BLACK BOX PLANNING LTD

ECOLOGYSOLUTIONS

Part of the ES Group

KNOLL HOUSE HOTEL,
FERRY ROAD,
STUDLAND

APPENDIX 7.2: SHADOW HABITATS REGULATIONS ASSESSMENT

Pursuant to Regulation 63 of The Conservation of Habitats and Species Regulations 2017

November 2022
9405.ShadowHRA.vf

ecology solutions for planners and developers

CONTENTS

PLANS

ANNEXES

1. INTRODUCTION

1.1. Background

1.1.1. A planning application (REF: 6/2018/0566) was initially submitted as part of previous proposals for the proposed development at Knoll House Hotel, Ferry Road, Studland (hereafter referred to as the 'Application Site'). The application was subsequently refused in February 2022 on the grounds of potential adverse impacts to the nearby European designated sites, as well as concerns regarding the AONB.

1.1.2. Ecology Solutions was commissioned by Black Box Planning Ltd in April 2022 to assess the updated development proposals at Knoll House Hotel, Ferry Road, Studland including a detailed assessment of the potential impacts of the proposals on international / European designated sites in the vicinity to support a new planning application.

1.1.3. The findings of this assessment work are set out within this 'Shadow Habitats Regulations Assessment' document (Shadow HRA), such that the Competent Authority (the Dorset Council in this case) has all the necessary information before it in order to carry out its duties in considering the application, in line with relevant planning policy and legislation, including specifically The Conservation of Habitats and Species Regulations 2017 (hereafter referred to as the Habitats Regulations).

1.1.4. The information contained within this document is intended to provide the Competent Authority with all of the information that they may reasonably require to inform their formal assessment pursuant to the Habitats Regulations (in accordance with Regulation 63(2)).

1.2. Application Site Characteristics

1.2.1. The Application Site is located along Ferry Road, to the north of Studland, Dorset. To the north and west, the Application Site is bounded by a woodland, which forms part of the Wider Study Area, Studland and Godlingston Heath Nature Reserve lies beyond. To the east the Application Site is bounded by Ferry road, with part of the Wider Study Area beyond comprising a golf course and Knoll beach and Studland bay located beyond. The Application Site is bounded to the south by an area of grassland, which lies within the Wider Study Area, with open countryside and areas of existing residential dwellings, whilst to the west the Application Site is bordered woodland with lowland heathland beyond.

1.2.2. The Application Site itself is dominated by hardstanding and buildings with small areas of amenity planting, amenity grassland, scattered trees and a tree line. The Wider Study Area comprises mixed woodland to the north and west, with an area of semi-improved grassland to the east and small areas of hardstanding.

1.3. Development Proposals

1.3.1. The description of development is outlined below:

"The redevelopment of Knoll House Hotel which will include the partial demolition of the existing hotel building and the erection of a new hotel as an extension to include 30 rooms, 22 apartments, 26 villas and ancillary leisure facilities which includes a restaurant, bistro, gym, swimming pool and spa along with associated car parking, servicing, and landscaping."

1.3.2. The development proposals are shown on the proposed roof plan produced by AWW, a copy of which is included at Annex 1 of this assessment.

1.4. Consultation

NATURAL ENGLAND OBJECTION SUBJECT TO FURTHER INFORMATION (15 FEBRUARY 2019)

1.4.1. Natural England (NE) initially objected to a previous application in February 2019 on the basis of insufficient information provided to demonstrate that no adverse impacts will arise to the surrounding European and internationally designated sites. Specific concerns were raised with regard to the change in use and occupancy levels of the new proposals.

1.4.2. Prior to the submission of the revised Environmental Statement Addendum in September 2019 NE provided a consultation response (15 February 2019) to the original planning application. This document is included at Annex 2 and ecological concerns raised in the response can be summarised as follows:

Unsuitable information to assess if there will be adverse effects from:

i. increased recreational pressures on the adjacent heathland designations;
ii. Risk of surface and foul water pollution to the adjacent designated sites;
iii. Potential increases in recreational pressures on Poole Harbour SPA / Ramsar;
iv. Potential nutrient enrichment of Poole Harbour SPA / Ramsar; and
v. Deficiency in ecological and visitor survey information

1.4.3. This response confirmed that, overall, NE were of the opinion that there will likely be significant adverse effects on the nearby designated sites and therefore an Appropriate Assessment should be undertaken by the local authority and that based on the current information it was their opinion that the proposals would fail the tests of the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations).

1.4.4. The response refers to the inclusion of 'market housing' as part of the proposals, concerns over the inclusion of a 'public swimming pool' (with regard to the latter reference is made to appeal cases which concluded such facilities resulted in net increases to the adjacent

countryside; albeit no specific cases are cited) and inclusion of self-catering accommodation. It was subsequently clarified that open market residential units do not form part of the proposals, the leisure facilities will only be available for guests and a membership for residents living in a very local catchment area and that associated units are also not traditional self-catering units.

1.4.5. There was also reference to the Design & Access Statement showing direct provision for access directly into the designated sites to the west. Again it was subsequently clarified that no direct access to the designated sites would be provided and that any circular walk provided could be designed to avoid access to these areas.

1.4.6. Much of NE's concern rested over the way occupancy rates were calculated (and the misconception that the number of people on site at the hotel would increase rather than slightly decrease when accounting for the resident staff), the efficacy of the Property Management System and the presentation and 'lack of explanation' of the evidence base. This was sought to be addressed and clarified in the Environmental Statement addendum (September 2019).

1.4.7. Particular criticism was made of the visitor survey conducted. It is understood that despite requests from Focus Ecology Ltd, NE would not engage over the visitor survey design. Nonetheless, many of the criticisms raised were addressed/justified in the 2019 ES addendum, e.g. the appropriateness of face to face interviews and the professional experience of Focus Ecology Ltd.

1.4.8. The NE response criticises the lack of information in relation to the staff living on site within the visitor survey but again further information / clarification was given on this aspect in the 2019 ES addendum.

1.4.9. There was clarification from NE that adverse effects on the designated sites due to air pollution (e.g. from increase traffic generation) is unlikely to occur.

1.4.10. The response considered that potential effects from recreational and nutrient enrichment on Poole Harbour SPA / Ramsar could not be ruled out based on the evidence presented but there is also reference to the ability to provide contributions to relevant Poole Harbour Supplementary Planning Document (SPD) initiatives for both recreation and nutrient enrichment in any event. Notwithstanding, the Environmental Statement addendum (September 2019) sought to clarify the fact that as there is no net increase in units (and, in fact, a slight reduction in occupancy) there would be no increased recreational pressures and a likely betterment in foul-water/nutrient terms.

1.4.11. Concerns over the lack of any reptile survey were also raised but subsequent survey (as reported in the 2019 ES addendum) addressed this issue.

1.4.12. The NE response also raised concerns over proposed planting of trees within acid grassland priority habitat (this relates to the proposed off-site vegetative screening) but welcomed the various management

measures to off-site habitats, e.g. Woodland Management Plan and Biodiversity Mitigation & Enhancement Plan.

NATURAL ENGLAND OBJECTION SUBJECT TO FURTHER INFORMATION (17 FEBRUARY 2020)

1.4.13. Following the submission of the 2019 ES addendum, Natural England provided a further consultation response (included at Annex 3) which maintained an objection to the proposals which is largely on the same grounds as per the February 2019 response. In summary, the objection was based on:

i. Unsuitable information to assess if there will be adverse effects from increased recreational pressures on the adjacent heathland designations;
ii. Likelihood of surface and foul water pollution to the adjacent designated sites;
iii. Potential increases in recreational pressures on Poole Harbour SPA / Ramsar;
iv. Potential nutrient enrichment of Poole Harbour SPA / Ramsar; and
v. Proposal of ineffective mitigation measures and lack of certainty over delivery of the mitigation measures in the long-term given lack of control over adjacent land.

1.4.14. There remained a misunderstanding about how the proposed villa and apartment accommodation would be operated, with NE considering that they would comprise open market housing. However, it had been proposed that they would be restricted to a use which was aligned to the hotel and form part of a tourism resort. This was a principle discussed with the LPA. Consequently, NE was of the opinion that the proposals are contrary to the Dorset Heathlands SPD and the type of development that is deemed acceptable within 400m of the SPA / SAC / Ramsar. This aspect was addressed in detail in the correspondence from Black Box Planning to Dorset Council dated 11th May 2020 (Annex 4).

1.4.15. There also remained a misconception that there would be an increase in occupancy at the hotel and therefore, in turn, increased recreation pressures on both the Dorset Heathlands SPA / SAC / Ramsar and Pool Harbour SPA / Ramsar and an increase in surface water / foul-water discharges affecting Poole Harbour SPA / Ramsar. Again, a detailed response on the issue of occupancy was provided in Annex 4 and the information provided demonstrates that occupancy post-development would be slightly reduced whichever way the data is interrogated (e.g. worst-case full occupancy or accounting for seasonal variations in occupancy rates). Further detailed information in relation to the treatment of surface water (via SuDS) was also provided to satisfy NE concerns in this regard.

1.4.16. NE also raised concern over an increase in cycle storage and car parking on site and suggest this would potentially increase levels of off-road cycling and visits by dog-walkers to the nearby designations. NE suggested that there should not be any net increase in car parking spaces.

1.4.17. NE cited that the covenant to restrict the keeping of cats is not enforceable and is therefore ineffective.

1.4.18. There was acknowledgement from NE that some 'mitigation measures' could be secured via agreement over the adjacent landholdings leased to the applicant by the National Trust. However, NE has queried the certainty of delivery of proposed measures on this land due to the imminent expiry of the lease (cited as being September 2020).

1.4.19. NE confirmed that prior concerns in relation to reptiles had been addressed through the provision of additional information within the 2019 ES addendum and the implementation of the BMEP which could be secured by way of condition.

FURTHER CONSULTATION WITH NATURAL ENGLAND

1.4.20. A further consultation response was received on 22nd January 2021 from NE in relation to the proposed development, this letter is included at Annex 5.

1.4.21. On 6th April 2021, a meeting was held with NE to discuss outstanding concerns with regard to potential adverse impacts to the European sites, in response to the latest letter. The full minutes of this meeting are included at Annex 6.

1.4.22. During this meeting it was agreed that staff questionnaires would be undertaken in order to ascertain the existing usage of the local European sites by staff living onsite. It was also agreed that there was little merit in undertaking updated visitor questionnaires, given the COVID-19 restrictions that were in place. The staff questionnaires were sent to NE for comments and following the agreement of the questionnaires, they were distributed to all staff at the hotel.

1.4.23. Following completion of the staff questionnaires, NE provided comments to the Dorset Council on 29th October 2021. A number of concerns raised within the correspondence were addressed by Black Box Planning within a letter dated 8th November 2021. This response can be seen at Annex 7.

1.4.24. A further letter of objection was subsequently received from NE on 14th December 2021, which is included at Annex 8.

PLANNING APPLICATION REFUSAL

1.4.25. On 9th February 2022, the planning application (REF: 6/2018/0566) was refused by Dorset Council. Once of the main reasons for refusal was:

"The application site is located within 400m of protected heathlands and C3 use is proposed. Mitigation measures have been identified but do not address all matters and have not currently been secured in perpetuity. In this instance there is no overriding public interest and as such it cannot be certain, on the evidence presented, that the proposal would not adversely affect the integrity of the Dorset Heathlands

European sites and international sites. Or, for that matter the Poole Harbour due to increase recreation in the harbour."

NEW 2022 PLANNING APPLICATION

1.4.26. On 28th June 2022, a meeting was held with NE to discuss a new planning application based on updated proposals for a reduced scheme within the Application Site. Full minutes are not available for this meeting, however the main concerns were centred around the proposed C3 usage as part of the new proposals. It was also suggested that a formal request was submitted to NE questioning the requirement updated visitor surveys be undertaken, following the lifting of COVID-19 restrictions.

1.4.27. It was strongly recommended within subsequent email correspondence that updated visitor surveys are undertaken to support the new planning application. The questionnaires were designed to align closely with the staff questionnaires, as NE had agreed the scope of the staff questionnaires. The visitor questionnaires were distributed to NE before they were undertaken, however no response was received. Visitor surveys were subsequently undertaken and are detailed further in section 4 below.

1.5. Purpose of this Report

1.5.1. This report specifically assesses the potential significant effects of the development proposals on international / European designated sites. Within this document specific regard is had to the test under Regulation 63 of the Habitats Regulations. Regulation 63 is described and considered further in Section 2 of this document.

1.5.2. Assessment under Regulation 63 of the Habitats Regulations is required in this instance, since the Application Site lies in proximity to a number of international / European designated sites, specifically:

- Dorset Heathlands SPA / Ramsar;
- Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC;
- Isle of Portland to Studland Cliffs SAC;
- Studland to Portland SAC;
- Solent and Dorset Coast SPA;
- Poole Harbour SPA / Ramsar; and
- St Albans Head to Durlston Head SAC.

1.5.3. The proximity of the Application Site to these international / European designated sites is described in detail at Section 3 of this report and is also shown on Plan HRA1.

1.5.4. As part of this assessment, professional judgement has been applied in some instances in order to interpret information. This report has been produced by experienced professional ecological consultants at Ecology Solutions who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and are therefore

both qualified and experienced to make such judgements where appropriate.

1.5.5. This document assesses the likely significant effects of the development proposals as a whole, both alone and in combination with other plans / projects. It then goes on to consider whether the development proposals will give rise to an adverse effect on the integrity of the relevant designated sites.

1.5.6. It is the opinion of Ecology Solutions, following detailed assessment, that the development proposals would not result in a significant adverse effect on the integrity of any international / European designated sites, either alone or in combination with any other plans or projects, and that as such the test contained at Regulation 63 of the Habitats Regulations would not be failed.

2. LEGISLATIVE AND PLANNING POLICY BACKGROUND

2.1. This section of the document outlines further details regarding the legislation and planning policy of relevance to the development proposals. Further detail with regard to relevant guidance is provided in Annex 9 and summarised below (insofar as it relates to the development proposals).

2.2. Legislation and relevant case law

2.2.1. The proximity of the Application Site to international / European designated sites means that the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive) and the EC Directive on Wild Birds (Birds Directive) are of relevance. The Directives are transposed in UK legislation through the Habitats Regulations (2017, as amended).

2.2.2. It is noted that the Application Site also lies in proximity to the Dorset Heathlands and Poole Harbour Ramsar sites. The UK is a signatory to the Convention on Wetlands of International Importance Especially as Wildfowl Habitat 1971, commonly known as the Ramsar Convention after the town in which it was signed. Parties to the Ramsar Convention are obliged to designate particular sites as Wetlands of International Importance.

2.2.3. The obligations imposed by the Convention are in themselves not particularly strong, in that they require the promotion and encouragement of the stated aims, rather than any specific action. However, as a matter of policy[1], Ramsar sites receive the same protection as designated SPAs and SACs. The procedures applicable to European sites are therefore to be applied to Ramsar sites, even though these are not European sites as a matter of law.

2.2.4. The relevant Directives and UK legislation are discussed below.

Habitats and Birds Directives

2.2.5. Under the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, commonly referred to as the Habitats Directive (Council Directive 92/43/EEC), Member States are required to take special measures to maintain the distribution and abundance of certain priority habitats and species (listed in Annexes I and II of the Directive). In particular, each Member State is required to designate the most suitable sites as Special Areas of Conservation (SACs). All such SACs will form part of the Natura 2000 network under Article 3(1) of the Habitats Directive.

2.2.6. Article 2(3) sets out that member states have a duty, in exercising their obligations under the Habitats Directive to:

".. take account of economic, social and cultural requirements and local characteristics."

[1] As noted at paragraph 176 (b) of the National Planning Policy Framework (February 2019)

2.2.7. Under the EC Directive on Wild Birds (the Birds Directive) (Council Directive 2009/147/EC, previously 79/409/EEC), Member States are required to take special measures to conserve the habitats of certain rare species of birds (listed in Annex I of the Directive) and regularly occurring migratory birds.

2.2.8. Each Member State is required to classify the most suitable areas of such habitats as Special Protection Areas (SPAs). This is designed to protect wild birds, and to provide sufficient diversity of habitats for all species so as to maintain populations at an ecologically sound level. All Bird Directive SPAs will also be part of the Natura 2000 network under article 3(1) of the Habitats Directive.

2.2.9. Thus, there is an obligation under the Habitats Directive and the Birds Directive for member states to designate sites before turning to measures for their protection.

2.2.10. The protection afforded to SPAs and SACs is delivered through Article 6 of the Habitats Directive. Article 6(2) requires member states to take appropriate steps to avoid the deterioration of natural habitats and disturbance of species for which the sites have been designated, in so far as the disturbance could be significant in relation to the objectives of the Directive. Article 6(3) and Article 6(4) require that a plan or project not directly connected with the management of the site, but likely to have a significant effect upon it, either individually or in combination with other plans or projects, must be subject to an Appropriate Assessment of its implications on the site, in view of the site's Conservation Objectives.

2.2.11. Having undertaken an Appropriate Assessment, the competent authority may agree to a plan or project where it can be concluded that it will not adversely affect the integrity of the site. In light of a negative assessment on the implications for the integrity of the site, Article 6(4) provides that the plan or project may still proceed where it can be demonstrated that there are no alternatives and there are imperative reasons of over-riding public interest as to why it must proceed. In the event that a plan or project is to proceed on the basis of imperative reasons of over-riding public interest, by direction of Article 6(4), compensatory measures must be put in place to ensure that the overall coherence of the Natura 2000 network is protected.

<u>The Conservation of Habitats and Species Regulations 2017 (as amended)</u>

2.2.12. The Conservation of Species and Habitats Regulations 2017, commonly referred to as the Habitats Regulations, transpose the requirements of the Habitats Directive and Birds Directive into UK legislation. The Habitats Regulations aim to protect a network of sites in the UK that have rare or important habitats and species in order to safeguard biodiversity. The Habitats Regulations 2017 consolidate all of the previous amendments made to the Habitats Regulations 2010.

2.2.13. Under the Habitats Regulations, Competent Authorities have a duty to ensure that all the activities they regulate have no adverse effect on the integrity of any of the Natura 2000 sites (e.g. SPAs and SACs).

Regulation 63 of the Habitats Regulations requires that:

"63(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for a plan or project, which:-

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects) and

(b) is not directly connected with or necessary to the management of the site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.

63(3) The competent authority must for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specifies.

63(5) In the light of the conclusions of the assessment, and subject to regulation 64, the authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

63(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given."

2.2.14. Regulation 63 of the Habitats Regulations therefore sets out a two-stage process. The first test is to determine whether the plan / project is likely to have a significant effect on the European site. The second test (if applicable) is to determine whether the plan / project will affect the integrity of the European site.

2.2.15. Some key concepts of the Habitats Directive and Habitats Regulations have been clarified through case law. The most pertinent cases in relation to the development proposals are the *Waddenzee* Judgement, the *Sweetman* Cases, the *Holohan* Judgement, the *Wealden* Judgement and the Dutch Nitrogen Cases. These are considered in chronological order and discussed below.

2.2.16. Whilst the UK left the European Union on 31 January 2020, EU case law prior to this date will continue to be relevant for the purposes of assessment pursuant to the Habitats Regulations. However, relevant cases in the EU after this date will not be relevant to the UK.

Waddenzee Judgement

2.2.17. In the '*Waddenzee'* case (C-127/02) [2004] the European Court of Justice considered the trigger for Appropriate Assessment. It decided that an appropriate assessment is required for a plan or project where

there is a probability or a risk that it will have a significant effect on the SPA. The Judgement states (at paragraph 3(a)) that:

"…any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects."

2.2.18. Hence, the need for an Appropriate Assessment should be determined on a precautionary basis. It is noted that this has been incorporated into the National Planning Practice Guidance (NPPG) on Appropriate Assessment[2].

2.2.19. The Judgement gives clarity that the test of 'likely significant effect' should also be undertaken in view of the relevant Conservation Objectives of the European site. It is stated at paragraph 3(b) that:

"where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site."

2.2.20. Paragraph 4 of the Judgement emphasises the requirement for the appropriate assessment to rely on objective scientific information:

"…an appropriate assessment…implies that, prior to its approval, all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the appropriate assessment of the implications…for the site concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects."

Sweetman Case

2.2.21. Further guidance in relation to the consideration of impacts in the light of the Habitats Regulations is provided in the '*Sweetman'* case (*Sweetman* v *An Bord Pleanala* (C-258/11) [2014]). The case as set out by the Advocate General considered in detail the test for likely significant effect in paragraphs 50 and 51:

"50. The test which that expert assessment must determine is whether the plan or project in question has 'an adverse effect on the integrity of the site', since that is the basis on which the competent national authorities must reach their decision. The threshold at this (the second) stage is noticeably higher than that laid down at the first stage. That is because the question (to use more simple terminology) is not 'should we bother to check' (the question at the first stage) but rather 'what will happen to the site if this plan or project goes ahead; and is that

consistent with "maintaining or restoring the favourable conservation status" of the habitat or species concerned'…

51. It is plain, however, that the threshold laid down at this stage of Article 6(3) may not be set too high, since the assessment must be undertaken having rigorous regard to the precautionary principle. That principle applies where there is uncertainty as to the existence or extent of risks. The competent national authorities may grant authorisation to a plan or project only if they are convinced that it will not adversely affect the integrity of the site concerned. If doubt remains as to the absence of adverse effects, they must refuse authorisation."

2.2.22. The Court of Justice of the European Union (CJEU) agreed with the Advocate General's conclusions, and held:

"40. Authorisation for a plan or project, as referred to in Article 6(3) of the Habitats Directive, may therefore be given only on condition that the competent authorities – once all aspects of the plan or project have been identified which can, by themselves or in combination with other plans or projects, affect the conservation objectives of the site concerned, and in the light of the best scientific knowledge in the field – are certain that the plan or project will not have lasting adverse effects on the integrity of that site. That is so where no reasonable scientific doubt remains as to the absence of such effects."

2.2.23. Hence a plan or project may be authorised only if no reasonable scientific doubt remains as to the absence of effects. Reasonable scientific doubt will exist if the evidence is not sufficiently conclusive, or if there are gaps in the information.

<u>People over Wind Case (Sweetman II)</u>

2.2.24. The CJEU in *People over Wind v Coillte Teoranta* (C-323/17) [2018], commonly referred to as '*People over Wind*' or Sweetman II, has reversed the position adopted under the *Dilly Lane* Decision that it was right and proper for mitigation or avoidance measures, which formed a feature of a plan / project, to be viewed as integral to the plan / project and not excluded when considering the likely significance test at Regulation 63(1).

2.2.25. The decision by the CJEU ruled that:

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site."

2.2.26. In accordance with this ruling, avoidance or mitigation measures cannot be considered at the first stage of the test at Regulation 63(1) (the 'Likely Significant Effect' stage), and that these can only be considered at the Appropriate Assessment stage. The *People over*

Wind ruling therefore conflicts with and overrules domestic case law in this regard. It is noted that this is also addressed in the NPPG[Error! Bookmark not defined.].

ESB Wind Developments (Sweetman III)

2.2.27. In this case, a request for a preliminary ruling was made to the CJEU concerning the interpretation of Articles 6(3) and 6(4) of the Habitats Directive. The request was made in relation to proceedings brought by Mr Peter Sweetman and Edel Grace against the decision of An Bord Pleanala concerning the latter's decision to grant ESB Wind Developments Ltd and Coillte permission for a wind farm project within an SPA. The ruling was handed down on 25th July 2018 (C-164/17).

2.2.28. This ruling distinguishes between, for the purpose of the application of Articles 6(3) and 6(4) of the Directive, 'mitigation' that consists of measures intended to avoid or reduce harm to the protected site, and measures intended to compensate for any harm (Compensatory measures). It is stated:

"Article 6 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project, the part of the site that is in fact likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned; that fact falls to be considered, if need be, under Article 6(4) of the directive."

2.2.29. The ruling clarifies (in the context of the specifics of that project, which concerned development *on* a designated site, as opposed to the development proposals for Lea Bridge) what constitutes mitigation and what should correctly be termed compensation. It confirms that mitigation should be subject to Appropriate Assessment under article 6(3) but that measures designed to compensate for any harm rather than prevent it, cannot be considered under article 6(3) (Appropriate Assessment). In such instances, the proposal must be considered under article 6(4) and thus it cannot be permitted unless there are "Imperative Reasons of Overriding Public Interest".

Holohan Judgement

2.2.30. In the case of *Holohan v An Bord Pleanala* (C-461/17) [2018] the CJEU considered the appropriate assessment procedure to be

adopted when considering potential impacts on a European Site. In considering this case, the CJEU ruled, amongst other matters:

a) An appropriate assessment must catalogue the entirety of the habitat types and species for which a site is protected.

b) It must also identify and examine the implications of the proposed project for the species present on that site and for which that site has not been listed. Additionally, it must examine the implications for habitat types and species outside the boundaries of the protected site, insofar as those implications are liable to affect the site's Conservation Objectives.

c) Where the competent authority rejects findings of an expert that additional information must be obtained, the Appropriate Assessment must include a detailed statement dispelling all reasonable scientific doubt concerning effects on the protected site.

2.2.31. This assessment document seeks to comply with the relevant parts of the Holohan Judgment. The qualifying interest features are referred to wherever appropriate in Section 4 below. The relevant information, as submitted to Europe, is included as relevant appendices to this assessment and referenced where appropriate. Consideration has been given to implications for habitats and species located outside of the international / European designated sites, with reference to the site's Conservation Objectives and the possibility that an adverse effect on the integrity of the site could arise.

Wealden Judgement

2.2.32. In relation to air quality impacts on designated sites (most notably in relation to Nitrogen deposition), until relatively recently, Natural England's advice regarding the screening threshold for a likely significant effect may be summarised as follows. "*Where either the resulting deposition / concentration equates to 'less than 1% of the relevant benchmark', or the predicted Annual Average Daily Traffic (AADT) value is less than 1000, a likely significant effect can be screened out for the project when it is considered both alone and in combination with other plans or projects*".

2.2.33. However, relevant guidance has changed in the light of the High Court judgment in Wealden v SSCLG [2017] EWHC 351 (Admin) ('the Wealden Judgment').

2.2.34. The Wealden Judgment confirms that the use of the project / plan level 1000 AADT threshold (equivalent to 1% of the critical level/load for receiving habitat) as the only means of addressing in-combination effects was not appropriate, particularly where other AADT values are known and importantly which, when added together, breach the threshold. The 1000 AADT (and 1%) thresholds themselves were not questioned in terms of their use for assessment purposes.

2.2.35. The Judgment clarified that whilst the 1000 AADT (and 1% of the critical load / level) threshold is appropriate for use in screening assessments when applying the tests of the Habitats Regulations, a

true in combination assessment must be undertaken, in view of all relevant AADT data.

2.2.36. As a result of the Wealden Judgement, updated guidance has been produced by Natural England (as referenced below) in relation to the assessment of road traffic emissions on European designated sites.

The Dutch Nitrogen Cases

2.2.37. On 7th November 2018 the Judgment of the CJEU was handed down pursuant to a reference for a Preliminary Ruling relating to the application of Article 6 of the Habitats Directive in joined cases C-293/17 and C-294/17. The cases concerned authorisation schemes for agricultural activities which cause nitrogen deposition on Natura 2000 (European) sites in the Netherlands.

2.2.38. Key parts of the ruling (insofar as they are relevant to this assessment) are discussed below.

2.2.39. In line with preceding case law (Waddenzee and Sweetman, as discussed above) the need for scientific rigour and firm conclusions as to the absence of effects are a pre-requisite for authorisation of a plan / project. Ruling 3 in the case states:

"Article 6(3) of Directive 92/43 must be interpreted as not precluding national programmatic legislation which allows the competent authorities to authorise projects on the basis of an 'appropriate assessment' within the meaning of that provision, carried out in advance and in which a specific overall amount of nitrogen deposition has been deemed compatible with that legislation's objectives of protection. That is so, however, only in so far as a thorough and in-depth examination of the scientific soundness of that assessment makes it possible to ensure that there is no reasonable scientific doubt as to the absence of adverse effects of each plan or project on the integrity of the site concerned, which it is for the national court to ascertain."

2.2.40. Ruling 4 in the case states:

"Article 6(3) of Directive 92/43 must be interpreted as not precluding national programmatic legislation, such as that at issue in the main proceedings, exempting certain projects which do not exceed a certain threshold value or a certain limit value in terms of nitrogen deposition from the requirement for individual approval, if the national court is satisfied that the 'appropriate assessment' within the meaning of that provision, carried out in advance, meets the criterion that there is no reasonable scientific doubt as to the lack of adverse effects of those plans or projects on the integrity of the sites concerned."

2.2.41. Ruling 5 in the case states:

"Article 6(3) of Directive 92/43 must be interpreted as precluding national programmatic legislation, such as that at issue in the main proceedings, which allows a certain category of projects, in the present case the application of fertilisers on the surface of land or below its

surface and the grazing of cattle, to be implemented without being subject to a permit requirement and, accordingly, to an individualised appropriate assessment of its implications for the sites concerned, unless the objective circumstances make it possible to rule out with certainty any possibility that those projects, individually or in combination with other projects, may significantly affect those sites, which it is for the referring court to ascertain."

2.2.42. Ruling 6 in the case confirms that any measures which are relied upon to mitigate or avoid adverse effects on the integrity of the European site in question, must be certain at the time of assessment. It is stated:

"Article 6(3) of Directive 92/43 must be interpreted as meaning that an 'appropriate assessment' within the meaning of that provision may not take into account the existence of 'conservation measures' within the meaning of paragraph 1 of that article, 'preventive measures' within the meaning of paragraph 2 of that article, measures specifically adopted for a programme such as that at issue in the main proceedings or 'autonomous' measures, in so far as those measures are not part of that programme, if the expected benefits of those measures are not certain at the time of that assessment."

2.3. Key Guidance and other Relevant Documents

2.3.1. Guidance on the interpretation of key terms and concepts contained within the European and UK legislation of relevance to European designated sites is provided through several documents issued by the European Commission and national organisations such as the Joint Nature Conservation Committee (JNCC) and Natural England. Key elements of this guidance are outlined below, with further information included at Annex 9 of this assessment.

Natura 2000 Standard Data Forms

2.3.2. A standard reporting format has been developed for Natura 2000 sites (SPAs and SACs) to ensure that the relevant site selection information is reported and stored in a consistent manner which can be easily made available.

2.3.3. A standard reporting form for SPAs and SACs was developed by the European Commission and published in 1996. The form is used for all sites designated or proposed to be designated as SPAs and SACs under the relevant Directives, with the information stored on a central database.

2.3.4. Article 4 of the Habitats Directive provides the legal basis for providing the data. Article 4 states that information shall include a map of the designated site, its name, location, extent and the data resulting from application of the criteria specified in Annex III and that this shall be provided in a format established by the Commission. Under Article 4 (paragraph 3) of the Birds Directive, Member States are required to provide the Commission with all relevant information to enable it to take any appropriate steps in order to protect relevant species in areas where the Directive applies.

2.3.5. Whilst it is the relevant country agency (i.e. Natural England) that is responsible for designating a site, it is the JNCC who are responsible for collating the lists of European and international designated sites, together with relevant supporting information. The Natura 2000 Data Forms for SPAs and SACs are therefore made available by JNCC.

2.3.6. Within the explanatory notes for Natura Standard Data Forms the following "main objectives" of the Natura data form / database are given:

1. *"to provide the necessary information to enable the Commission, in partnership with the Member States, to co-ordinate measures to create a coherent Natura 2000 network and to evaluate its effectiveness for the conservation of Annex I habitats and for the habitats of species listed in Annex II of Council Directive 92/43/EEC as well as the habitats of Annex I bird species and other migratory bird species covered by Council Directive 79/409/EEC."*

2. *"to provide information which will assist the Commission in other decision making capacities to ensure that the Natura 2000 network is fully considered in other policy areas and sectors of the Commission's activities in particular regional, agricultural, energy, transport and tourism policies."*

3. *"to assist the Commission and the relevant committees in choosing actions for funding under LIFE and other financial instruments where data relevant to the conservation of sites, such as ownership and management practice, are likely to facilitate the decision making process."*

4. *"to provide a useful forum for the exchange and sharing of information on habitats and species of Community interest to the benefit of all Member States."*

2.3.7. Copies of the Natura 2000 Standard Data Forms for the European designated sites of relevance to this assessment are included as appendices to this document.

Conservation Objectives

2.3.8. The formal European Site Conservation Objectives for SPAs and SACs are produced by Natural England.

2.3.9. For clarity, a copy of the European Site Conservation Objectives (and where available, Supplementary Advice) for the relevant European designated sites are also included as appendices to this document.

2.4. Planning Policy

National Planning Policy Framework (NPPF) and ODPM / DEFRA Circular (ODPM / DEFRA, 2005)

2.4.1. Paragraphs 170 and 176 of the National Planning Policy Framework (July 2021) are of direct relevance. Paragraph 174 makes reference to protecting and enhancing sites of biodiversity value "*in a manner*

commensurate with their statutory status or identified quality in the development plan". Paragraph 181 asserts that potential SPAs, possible SACs, listed or proposed Ramsar sites and sites providing compensatory measures for adverse effects should be afforded the same level of protection as classified SPAs and designated SACs (referred to in the NPPF as 'habitats sites').

2.4.2. Guidance on the determination of whether an effect on a European designated site is likely to be significant, together with the scope of Appropriate Assessments and ascertaining the effect on the integrity, was previously provided within Circular 06/2005 "*Biodiversity and geographical conservation – statutory obligations and their impact within the planning system*" (DEFRA). The Circular originally accompanied Planning Policy Statement 9 (PPS9) and is referenced in the NPPF at footnote 56.

2.4.3. With respect to the significance test, the Circular states at paragraph 13 that:

"The decision as to whether an appropriate assessment is necessary should be made on a precautionary basis".

2.4.4. The *Waddenzee* Judgement is specifically referred to at paragraph 13 of the Circular. With regard to the need to undertake an Appropriate Assessment; this is only required where it is not possible to conclude, on the basis of objective information, that the plan / project will not have a significant effect on the European site, either individually or in-combination with other plans / projects.

2.4.5. Paragraph 14 clarifies that in considering the likely significance of an effect, the decision taker should assess whether the effect would be significant in terms of the site's Conservation Objectives.

2.4.6. Paragraph 15 clarifies the importance of assessing the likely significant effect on each of the interest features for which the site is designated.

2.4.7. Guidance on the scope of an Appropriate Assessment was provided at paragraph 17:

"If the decision-taker concludes that a proposed development (not directly connected with or necessary to the management of a site) is likely to significantly affect a European site, they must make an Appropriate Assessment of the implications of the proposal for the site in view of the site's conservation objectives. These relate to each of the interest features for which the site was classified…The scope and content of an Appropriate Assessment will depend on the nature, location, duration and scale of the proposed project and the interest features of the relevant site. It is important that an Appropriate Assessment is made in respect of each interest feature for which the site is classified; and for each designation where a site is classified under more than one international obligation…"

2.4.8. At paragraph 20 the definition of 'integrity' for the purpose of interpreting the tests contained within the Habitats Regulations is given as:

"The integrity of a site is the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified."

2.4.9. The Circular included a flow diagram setting out the series of steps competent authorities are required to take in considering proposals affecting internationally designated nature conservation sites. This was based on the information and flow charts given in guidance issued by the European Commission (European Commission Environment DG, 2001). A copy of this flow diagram is included at Annex 10 of this sHRA.

2.4.10. Paragraph 182 of the updated NPPF (July 2021) states that:

"*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site*".

2.4.11. Further guidance is available at the 'appropriate assessment' section of planning practice guidance on the GOV.UK website[2]. This largely summarises the requirements of an assessment, in light of the case law outlined above, with particular regard afforded to changes arising as a result of the *People over Wind* judgement.

Local Policy

2.4.12. For the purposes of this sHRA policies BIO, DH and PH of the adopted Purbeck Local Plan Part One and policies E7, E8 and E9 of the Draft Purbeck Local Plan 2018 -2034 are of direct relevance.

[2] Ministry of Housing, Communities and Local Government. *Guidance – Appropriate Assessment.* Available at: http://www.gov.uk/guidance/appropriate-assessment (published 22 July 2019)

3. LOCATION OF APPLICATION SITE IN RELATION TO INTERNATIONAL / EUROPEAN DESIGNATED SITES

3.1. The following international / European designated sites are located within 10km of the Application Site (by straight line distance; 'as the crow flies'):

- Dorset Heathlands SPA / Ramsar;
- Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC;
- Isle of Portland to Studland Cliffs SAC;
- Studland to Portland SAC
- Solent and Dorset Coast SPA;
- Poole Harbour SPA / Ramsar; and
- St Albans Head to Durlston Head SAC.

3.2. The relationship between the Application Site and these designated sites is shown on Plan HRA1 and discussed in further detail below.

Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC

3.3. The Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC lies approximately 60m west of the Application Site and is separated by an area of mixed woodland that lies within the Wider Study Area.

Isle of Portland to Studland Cliffs SAC

3.4. The Isle of Portland to Studland Cliffs SAC lies approximately 0.6km southeast of the Application Site and is separated by open countryside and a small amount of residential development and a car park.

Studland to Portland SAC

3.5. The Studland to Portland SAC lies approximately 2.3km southeast of the Application Site and is well separated from the Application Site by open countryside and the settlement of Studland.

Solent and Dorset Coast SPA

3.6. The Solent and Dorset Coast SPA lies approximately 0.3km east of the Application Site and is separated by the eastern Wider Study Area, as well as a car park.

Poole Harbour SPA / Ramsar

3.7. The Poole Harbour SPA and Ramsar site lies approximately 0.6km northwest of the Application Site and is separated by the Studland and Godlingston heathland.

St Albans Head to Durlston Head SAC

3.8. The St Albans Head to Durlston Head SAC lies approximately 4.8km southwest of the Application Site and is well-separated by open countryside, the settlement of Studland and the town of Swanage.

4. CONSIDERATION OF BASELINE INFORMATION

4.1. In undertaking a project-level Habitats Regulations Assessment, it is necessary to have a comprehensive understanding of the relevant qualifying interest features of the international / European designated site, and the formal Conservation Objectives as defined in relation to those interest features. It should be noted that there are no formal Conservation Objectives for Ramsar sites.

4.2. It is also necessary to understand the baseline situation in terms of the current condition (in nature conservation terms) of the interest features, any identified threats to their favourable condition and the extent to which those threats could be exacerbated by the development proposals.

4.3. In the first instance, key information has been collated and is presented below in relation to the international / European designated sites. This includes details in relation to the qualifying interest features of the SPA, Ramsar site and SAC (and the SSSIs that underpin them), and the formal Conservation Objectives for the European designated sites.

4.4. Conservation Status of International / European Designated Sites

4.4.1. The following section of this assessment describes the reason for the designation of the international / European designated sites, together with supporting information and the Conservation Objectives.

Dorset Heathlands SPA

Qualifying Features

4.4.2. Dorset Heathlands SPA was classified in October 1998 and covers an area of 8184.96 hectares. The SPA is underpinned by 40 separate SSSIs. The only components situated within 10km of the Application Site are Studland & Godlingston Heaths SSSI and Poole Harbour SSSI.

4.4.3. The SPA qualifies under Article 4.1 of the Birds Directive (79/409/EEC) by supporting a population of European importance of the following Annex I species:

- Dartford Warbler *Sylvia undata*
- Nightjar *Caprimulgus europaeus*
- Woodlark *Lullula arborea*
- Hen Harrier *Circus cyaneus*
- Merlin *Falco columbarius*

4.4.4. The SPA Citation and Natura 2000 Standard Data Form for the SPA are included at Annex 11 of this assessment.

Conservation Objectives

4.4.5. The Conservation Objectives for Dorset Heathlands SPA are included at Annex 12 of this assessment, and are defined by Natural England as being:

"With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

A082 Circus cyaneus; Hen harrier (Non-breeding)
A098 Falco columbarius; Merlin (Non-breeding)
A224 Caprimulgus europaeus; European nightjar (Breeding)
A246 Lullula arborea; Woodlark (Breeding)
A302 Sylvia undata; Dartford warbler (Breeding)"

4.4.6. The Conservation Objectives also state that they should be "*read in conjunction with the accompanying Supplementary Advice document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above*".

4.4.7. A copy of the Supplementary Advice for Dorset Heathlands SPA is included at Annex 13 of this assessment.

<u>Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC</u>

Qualifying Features

4.4.8. Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC was designated in April 2005 and covers an area of 2221.94 hectares. The SAC is underpinned by a total of 12 SSSIs. The only components situated within 10km of the Application Site are Studland & Godlingston Heaths SSSI and Poole Harbour SSSI.

4.4.9. The SAC comprises 7 Annex I habitats of European importance:

- Alkaline fens. (Calcium-rich springwater-fed fens)
- Calcareous fens with Cladium mariscus and species of the Caricion davallianae. (Calcium rich fen dominated by great fen sedge (saw sedge))*
- Depressions on peat substrates of the Rhynchosporion
- European dry heaths
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae). (Purple moor-grass meadows)
- Northern Atlantic wet heaths with Erica tetralix. (Wet heathland with cross-leaved heath)
- Old acidophilous oak woods with Quercus robur on sandy plains. (Dry oak-dominated woodland)

4.4.10. The SAC also supports two Annex II species:

- Great crested newt *Triturus cristatus*
- Southern damselfly *Coenagrion mercuriale*

4.4.11. The SAC citation and Natura 2000 Standard Data Form for Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC are included at Annex 14 of this assessment.

Conservation Objectives

4.4.12. The Conservation Objectives for Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC are included at Annex 15 of this assessment and are defined by Natural England as being:

4.4.13. "*With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;*

4.4.14. Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species*
- *The structure and function (including typical species) of qualifying natural habitats*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*
- *The populations of qualifying species, and,*
- *The distribution of qualifying species within the site.*

Qualifying Features:

H4010 Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath
H4030 European dry heaths
H6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae); Purple moor-grass meadows
H7150 Depressions on peat substrates of the Rhynchosporion; Depressions on peat substrates
*H7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae; Calcium-rich fen dominated by great fen sedge (saw sedge)**
H7230 Alkaline fens; Calcium-rich springwater-fed fens
H9190 Old acidophilous oak woods with Quercus robur on sandy plains; Dry oak-dominated woodland
S1044 Coenagrion mercuriale; Southern damselfly
S1166 Triturus cristatus; Great crested newt"

4.4.15. The Conservation Objectives also state that they should be read in conjunction with the accompanying Supplementary Advice document. A copy of the Supplementary Advice for Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC is included at Annex 16 of this assessment.

Dorset Heathlands Ramsar;

4.4.16. Dorset Heathlands was designated as a Ramsar site in October 1998. The boundary of the Ramsar site is consistent with the SPA.

4.4.17. The site qualifies under Ramsar Criterion 1 under the following justification:

"Contains particularly good examples of (i) northern Atlantic wet heaths with cross-leaved heath Erica tetralix and (ii) acid mire with Rhynchosporion.

Contains largest example in Britain of southern Atlantic wet heaths with Dorset heath Erica ciliaris and cross-leaved heath Erica tetralix."

4.4.18. The site also qualifies under Ramsar Criterion 2 under the following justification:

"*Supports 1 nationally rare and 13 nationally scarce wetland plant species, and at least 28 nationally rare wetland invertebrate species*."

4.4.19. The site also qualifies under Ramsar Criterion 3 under the following justification:

"*Has a high species richness and high ecological diversity of wetland habitat types and transitions, and lies in one of the most biologically-rich wetland areas of lowland Britain, being continuous with three other Ramsar sites: Poole Harbour, Avon Valley and The New Forest*."

4.4.20. A copy of the Ramsar Information Sheet (RIS) for the site is included at Annex 17 of this assessment

Studland & Godlingston Heaths SSSI and Poole Harbour SSSI

4.4.21. As outlined above, both the Dorset Heathlands SPA and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC in close proximity to the Application Site are underpinned by Studland & Godlingston Heaths SSSI and Poole Harbour SSSI. The citations for these SSSIs (of direct relevance to this assessment) lists those interest features (habitats and species) for which the sites are designated. The full citation for Studland & Godlingston Heaths SSSI and Poole Harbour SSSI are reproduced at Annexes 18 and 19 of this assessment, respectively.

4.4.22. Detailed information on the current management and quality of the SSSIs are provided in the SSSI unit condition assessments. A copy of this information for is reproduced for Studland & Godlingston Heaths SSSI at Annex 20 and Poole Harbour SSSI at Annex 21.

Isle of Portland to Studland Cliffs SAC

Qualifying Features

4.4.23. Isle of Portland to Studland Cliffs SAC was designated in April 2005 and covers an area of 1447.5 hectares. The SAC is underpinned by five SSSIs The only components situated within 10km of the Application Site are Studland Cliffs SSSI and Purbeck Ridge (East) SSSI.

4.4.24. The SAC comprises three Annex I habitats of European importance:

- Annual vegetation of drift lines
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia). (Dry grasslands and scrublands on chalk or limestone)
- Vegetated sea cliffs of the Atlantic and Baltic coasts

4.4.25. The SAC also supports the Annex II species Early gentian *Gentianella anglica.*

4.4.26. The SAC citation and Natura 2000 Standard Data Form for Isle of Portland to Studland Cliffs SAC are included at Annex 22 of this assessment.

Conservation Objectives

4.4.27. The Conservation Objectives for Isle of Portland to Studland Cliffs SAC are included at Annex 23 of this assessment and are defined by Natural England as being:

"With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species*
- *The structure and function (including typical species) of qualifying natural habitats*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*
- *The populations of qualifying species, and,*
- *The distribution of qualifying species within the site*

Qualifying Features:

H1210 Annual vegetation of drift lines
H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts

H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia); Dry grasslands and scrublands on chalk or limestone
S1654 Gentianella anglica; Early gentian"

4.4.28. The Conservation Objectives also state that they should be read in conjunction with the accompanying Supplementary Advice document. A copy of the Supplementary Advice for Isle of Portland to Studland Cliffs SAC included at Annex 24 of this assessment.

Studland Cliffs SSSI and Purbeck Ridge East SSSI

4.4.29. As outlined above, the Isle of Portland to Studland Cliffs SAC in close proximity to the Application Site is underpinned by Studland Cliffs SSSI and Purbeck Ridge East SSSI. The citations for these SSSIs (of direct relevance to this assessment) lists those interest features (habitats and species) for which the sites are designated. The full citation for Studland Cliffs SSSI and Purbeck Ridge East SSSI are reproduced at Annexes 25 and 26 of this assessment, respectively.

4.4.30. Detailed information on the current management and quality of the SSSIs are provided in the SSSI unit condition assessments. A copy of this information for is reproduced for Studland Cliffs SSSI at Annex 27 and Purbeck Ridge East SSSI at Annex 28.

Studland to Portland SAC

Qualifying Features

4.4.31. Studland to Portland SAC was designated in September 2017 and covers an area of 33184.28 hectares.

4.4.32. The SAC comprises one Annex I habitat of European importance:

- Reefs

4.4.33. The Natura 2000 Standard Data Form for Studland to Portland SAC is included at Annex 29 of this assessment.

Conservation Objectives

4.4.34. The Conservation Objectives for Studland to Portland SAC are included at Annex 30 of this assessment and are defined by Natural England as being:

4.4.35. "With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

4.4.36. Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats*

- *The structure and function (including typical species) of qualifying natural habitats, and*
- *The supporting processes on which the qualifying natural habitats rely*

Qualifying Features:

H1170 Reefs

4.4.37. The Conservation Objectives also state that they should be read in conjunction with the accompanying Supplementary Advice document. However, the Supplementary Advice for Studland to Portland SAC was not available at the time of writing this assessment.

Solent and Dorset Coast SPA

Qualifying Features

4.4.38. Solent and Dorset Coast SPA was classified in December 2020 and covers an area of 88,980.55 hectares.

4.4.39. The SPA qualifies under Article 4.1 of the Birds Directive (79/409/EEC) by supporting a population of European importance of the following Annex I species:

- Sandwich tern *Sterna sandvicensis*
- Common tern *Sterna hirundo*
- Little tern *Sternula albifrons*

4.4.40. The SPA Citation and Natura 2000 Standard Data Form for this SPA are included at Annex 31 of this assessment.

Conservation Objectives

4.4.41. The Conservation Objectives for Solent and Dorset Coast SPA are included at Annex 32 of this assessment, and are defined by Natural England as being:

"With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

Qualifying Features:

A191 Sterna sandvicensis; Sandwich tern (Breeding)
A193 Sterna hirundo; Common tern (Breeding)
A195 Sternula albifrons; Little tern (Breeding)"

Poole Harbour SPA

Qualifying Features

4.4.42. Poole Harbour SPA was classified in March 1999 and covers an area of 4157.52 hectares. The SPA is underpinned by 6 separate SSSIs. The only components situated within 10km of the Application Site are Studland & Godlingston Heaths SSSI and Poole Harbour SSSI.

4.4.43. The SPA qualifies under Article 4.1 of the Birds Directive (79/409/EEC) by supporting a population of European importance of the following Annex I species:

- Common tern *Sterna hirundo*
- Sandwich tern *Sterna sandvicensis*
- Mediterranean gull *Larus melanocephalus*
- Little egret *Egretta garzetta*
- Eurasian spoonbill *Platalea leucorodia*
- Pied Avocet *Recurvirostra avosetta*

4.4.44. The SPA also qualifies under Article 4.2 of the Directive by supporting populations of European importance of the following migratory species:

- Shelduck *Tadorna tadorna*
- Icelandic-race blacktailed godwit *Limosa limosa islandica*

4.4.45. The SPA Citation and Natura 2000 Standard Data Form for this SPA are included at Annex 33 of this assessment.

Conservation Objectives

4.4.46. The Conservation Objectives for Poole Harbour SPA are included at Annex 34 of this assessment, and are defined by Natural England as being:

"With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*

- *The distribution of the qualifying features within the site.*

  Qualifying features:

  A026 Egretta garzetta; Little egret (Non-breeding)
  A034 Platalea leucorodia; Eurasian spoonbill (Non-breeding)
  A048 Tadorna tadorna; Common shelduck (Non-breeding)
  A132 Recurvirostra avosetta; Pied avocet (Non-breeding)
  A156 Limosa limosa islandica; Black-tailed godwit (Non-breeding)
  A176 Larus melanocephalus; Mediterranean gull (Breeding)
  A191 Sterna sandvicensis; Sandwich tern (Breeding)
  A193 Sterna hirundo; Common tern (Breeding)
  Waterbird assemblage"

4.4.47. The Conservation Objectives also state that they should be "*read in conjunction with the accompanying Conservation Advice document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above*".

4.4.48. A copy of the Conservation Advice for Poole Harbour SPA is included at Annex 35 of this assessment.

Poole Harbour Ramsar;

4.4.49. Poole Harbour was designated as a Ramsar site in July 1999. The boundary of the Ramsar site is consistent with the SPA.

4.4.50. The site qualifies under Ramsar Criterion 1 under the following justification:

"*The site is the best and largest example of a bar-built estuary with lagoonal characteristics (a natural harbour) in Britain*."

4.4.51. The site also qualifies under Ramsar Criterion 2 under the following justification:

"*The site supports two species of nationally rare plant and one nationally rare alga. There are at least three British Red data book invertebrate species.*."

4.4.52. The site also qualifies under Ramsar Criterion 3 under the following justification:

"*The site includes examples of natural habitat types of community interest - Mediterranean and thermo Atlantic halophilous scrubs, in this case dominated by Suaeda vera, as well as calcareous fens with Cladium mariscus. Transitions from saltmarsh through to peatland mires are of exceptional conservation importance as few such examples remain in Britain.*

The site supports nationally important populations of breeding waterfowl including Common tern, Sterna hirundo and Mediterranean gull Larus melanocephalus. Over winter the site also supports a nationally important population of Avocet Recurvirostra avosetta."

4.4.53. In addition, the site also qualifies under Ramsar Criterion 5 under the following justification:

"*Assemblages of international importance:*

Species with peak counts in winter:
24709 waterfowl (5 year peak mean 1998/99-2002/2003)"

4.4.54. A copy of the Ramsar Information Sheet (RIS) for the site is included at Annex 36 of this assessment

St Albans Head to Durlston Head SAC

Qualifying Features

4.4.55. St Albans Head to Durlston Head SAC was designated in April 2005 and covers an area of 297.22 hectares. The SAC is underpinned by South Dorset Coast SSSI and Townsend SSSI.

4.4.56. The SAC comprises two Annex I habitats of European importance:

- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco Brometalia) (important orchid sites). (Dry grasslands and scrublands on chalk or limestone, including important orchid sites)
- Vegetated sea cliffs of the Atlantic and Baltic coasts

4.4.57. The SAC also supports the following Annex II species:

- Early gentian *Gentianella anglica*
- Greater horseshoe bat *Rhinolophus ferrumequinum*

4.4.58. The SAC citation and Natura 2000 Standard Data Form for St Albans Head to Durlston Head SAC are included at Annex 37 of this assessment.

Conservation Objectives

4.4.59. The Conservation Objectives for St Albans Head to Durlston Head SAC are included at Annex 38 of this assessment and are defined by Natural England as being:

"With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

The extent and distribution of qualifying natural habitats and habitats of qualifying species

- *The structure and function (including typical species) of qualifying natural habitats*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*
- *The populations of qualifying species, and,*
- *The distribution of qualifying species within the site.*

Qualifying Features:

H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts
*H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia) (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)**
S1304. Rhinolophus ferrumequinum; Greater horseshoe bat
S1654. Gentianella anglica; Early gentian"

4.4.60. The Conservation Objectives also state that they should be read in conjunction with the accompanying Supplementary Advice document. A copy of the Supplementary Advice for St Albans Head to Durlston Head SAC included at Annex 39 of this assessment.

South Dorset Coast SSSI and Townsend SSSI

4.4.61. As outlined above, the St Albans Head to Durlston Head SAC located within 10km of the Application Site is underpinned by South Dorset Coast SSSI and Townsend SSSI. The citations for these SSSIs (of direct relevance to this assessment) lists those interest features (habitats and species) for which the sites are designated. The full citation for South Dorset Coast SSSI and Townsend SSSI are reproduced at Annexes 40 and 41 of this assessment, respectively.

4.4.62. Detailed information on the current management and quality of the SSSIs are provided in the SSSI unit condition assessments. A copy of this information for is reproduced for South Dorset Coast SSSI at Annex 42 and Townsend SSSI at Annex 43.

4.5. Existing Hotel Occupancy

4.5.1. The maximum occupancy rates of the hotel complex at full capacity comprises a total of 163 bedrooms which equates to a total maximum occupancy of 66 staff and 273 guests. This information is detailed at Annex 44.

4.6. Recreational usage of the nearby European sites from the Existing Hotel Complex

4.6.1. In order to ascertain existing recreational usage of the local European sites, survey work was undertaken by Ecology Solutions to investigate the usage of staff and guests, through the undertaking of questionnaires.

4.6.2. The results of the staff questionnaires are detailed at Annex 45, while the results from the visitor questionnaires are detailed at Annex 46. The findings from these surveys are summarised below.

4.6.3. Percentage usage of the nearby sites by staff were recorded as follows:

- Knoll/Studland Beach 84.6%;
- Local Heathland 53.8%; and
- Poole Harbour 34.6%.

4.6.4. Comparatively, the percentage usage of the nearby sites by hotel guests were recorded as follows:

- Knoll/Studland Beach 55.6%;
- Local Heathland 30.8%; and
- Poole Harbour 13.5%.

4.6.5. The staff visitor surveys also concluded that around 50% and two thirds of the respondents visit the local heathland sites and Knoll/Studland beach respectively at least 1-3 times a week or more (i.e. a high frequency). While the visitor surveys concluded that around 50% and 80% of guests visit the local heathland sites and Knoll/Studland beach respectively at least 1-3 times or more during their stay (i.e. a high frequency).

4.6.6. The most common reasons for staff visiting local heathland and beach were for walking and enjoying scenery, while the most common reasons for guests included also included walking and enjoying scenery, with greater levels of dog walking on the local heathland and greater levels of dog walking, water sports and swimming at Knoll/Studland beach.

5. ASSESSMENT OF THE IMPLICATIONS OF THE DEVELOPMENT PROPOSALS FOR THE CONSERVATION OBJECTIVES OF THE INTERNATIONAL / EUROPEAN DESIGNATED SITES

5.1. Section 2 of this document sets out the legislation, guidance and case law of relevance to an assessment of the implications of a plan / project on a European site. Having regard to this legislation and supporting guidance, it is clear that the assessment is a two-stage process, the first being the 'likely significant effect', and the second being the 'integrity test'.

5.2. It is clear that the Conservation Objectives of a European site are the most important consideration in determining whether the plan / project will have an adverse effect on the site, including any effects on its integrity.

5.3. It is evident that there is a clear hierarchical approach to assessing effects on European sites in line with the Habitats Directive / Regulations. The primary test is that against the Conservation Objectives with other considerations following these.

5.4. In line with the above, whilst the qualifying interest features of the sites and other baseline information have informed this assessment, the greatest weight has been placed upon the formal Conservation Objectives for the European sites, as set out by Natural England.

5.5. This section includes a description of the potentially significant effects arising from the development proposals at the site on the integrity of the nearby European sites. The potential effects are assessed within this section in order to address the test under Regulation 63 (1) in the first instance (the 'likely significant effect' stage).

5.6. In undertaking this assessment, regard has been had to the best available scientific knowledge. This approach is therefore consistent with the *Waddenzee* Judgement, which requires the use of the best scientific knowledge to inform a decision where no reasonable scientific doubt remains as to the presence and / or absence of effects that would adversely affect the integrity of the designated site (see Section 2 above).

5.7. Furthermore, consideration is given to the *People over Wind* Judgement, which confirmed the view of the CJEU that avoidance or mitigation measures can only be taken into consideration at the Appropriate Assessment stage.

5.8. As outlined in Section 1 above, the current development proposals are for "*The redevelopment of Knoll House Hotel which will include the partial demolition of the existing hotel building and the erection of a new hotel resort as to include 30 rooms (C1), 22 apartments (restricted C3), 26 villas (restricted C3) and ancillary leisure facilities which includes a restaurant, bistro, gym, swimming pool and spa along with associated car parking, servicing, and landscaping*."

Identification of potential pathways

5.9. Given that the reasons for classification as are similar, it is reasonable to consider the potential impacts upon the designations together, as opposed to undertaking a separate assessment for each.

5.10. On this basis, assessment has been undertaken in relation to the following sites (grouped as stated below):

- Dorset Heathlands SPA / Ramsar / Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC

- Isle of Portland to Studland Cliffs SAC / Studland to Portland SAC / Solent and Dorset Coast SPA / Poole Harbour SPA / Ramsar / St Albans Head to Durlston Head SAC

5.11. In order for a likely significant effect to occur at the international / European sites, it is axiomatic that there must be a potential pathway for a meaningful effect to occur. Initially, all potential pathways between the Application Site and the sites identified above have been identified, with consideration afforded to the likelihood of an adverse (net) effect arising as a result of the development proposals.

5.12. In identifying the potential pathways for effects, consideration has been afforded to the ecology of the qualifying features of the SPAs and SACs. Regard has also been given to the qualifying features of the Ramsar sites and component SSSIs, as outlined above.

Initial scoping of potential pathways for effects

Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC

5.13. As shown on Plan HRA1, the Application Site is separated from the nearest parts of the international / European designated sites by the Wider Study Area. As a result, the development proposals will not result in any direct losses to the designated sites (‘land take’).

5.14. Given that no change in the type of development is proposed (i.e. the re-development of a hotel complex), it is not considered that any adverse impacts would arise from noise as a result of the proposals.

5.15. It is noted that the Dorset Heathlands Planning Framework 2020-2025 supplementary planning document sets out a Strategic Access Management and Monitoring (SAMM) mitigation strategy through financial contributions to mitigate for potential recreational impacts upon the heathlands. The SAMM document applies to a 400m-5km radius, given the policy of no net increase in dwellings within 400m of the site. However, given there is no net increase in primary residences/people as set out above, it is not considered that any adverse impacts would arise as a result of the proposed development and such financial contributions would not be deemed necessary. The new villas and apartments will also be subject of controls, to restrict how they are used which will be alongside the hotel, forming part of a single resort.

5.16. A sympathetic lighting regime is proposed to reduce potential impacts from light spill to adjacent tree/woodland habitats to the Application Site as part of the proposed development. Such measures would also ensure that no adverse lighting impacts arise to the nearby European sites as a result of the proposals.

5.17. As noted in Section 1 above, the majority of the Application Site comprises hardstanding and buildings, with other habitats present including trees and amenity grassland/planting.

5.18. Given the developed nature of the site, the existing habitats present within the Application Site boundary are not suitable to support any of the qualifying species of the international / European designated sites. Indeed, none of the species associated with these sites were recorded within the Application Site during any of the survey work undertaken (as outlined in the Ecological Assessment report). As such it can be concluded that the Application Site does not represent land that could be classified as being important 'supporting habitat' associated with the designated sites (sometimes referred to as 'functionally linked habitat').

5.19. As set out within section 4, the existing maximum occupancy rates of the hotel complex at full capacity comprises a total of 163 bedrooms which equates to a total maximum occupancy of 66 staff and 273 guests, which equates to a total maximum occupancy of 339 people. The proposed development will have a maximum occupancy of 296 guests and there would be no resident staff on site (in contrast to the existing). As such, an overall reduction in maximum occupancy of 43 people is anticipated as a result of the proposals. This information is detailed at Annex 44.

5.20. As there will be no net increase in people onsite as a result of the proposals, it is not considered that any adverse effects with regard to air quality would arise as a result of the proposals. Indeed, during consultation of the previous application, NE clarified that adverse effects on the designated sites due to air pollution (e.g. from increase traffic generation) is unlikely to occur.

5.21. As part of the proposed development, there are a number of enhancements proposed including a circular walk of approximately 1.72km in length would be promoted to guests to encourage them utilise land within the Wider Study Area, rather than using the adjacent European sites. This circular walk is shown on Plan HRA2.

5.22. An existing access point is present within the northwestern corner of the Wider Study Area, which currently allows easy access from the woodland into Godlingston Heath. As part of the new scheme, it is proposed that this access point is removed, which aims to discourage guests from entering the heathland from this location.

5.23. A new enclosed dog-walking area is proposed within the eastern section of the Wider Study Area (see Plan HRA2), where guests can safely let their dogs off leads. As highlighted by the 2022 visitor surveys, there is existing usage of the designated sites by guests for dog-walking purposes. The provision of this dog-walking area, together with the promotion of the circular walk, aims to reduce the usage of the heathland for dog-walking purposes. Indeed, the results from the visitor questionnaire indicated that 77.8% of respondents with dogs stated that they would use a dog exercising area at least once a day. Furthermore, in order to address concerns with regard to the potential for an increase in dog numbers a restriction on the rooms with dogs (in terms of both location and number)

can be imposed by condition or agreement. It should be highlighted that no existing restriction is in place with regard to dog numbers.

5.24. It is also proposed to re-instate a former mire along the western boundary of the Wider Study Area (as indicated on Plan HRA2), which will represent an enhancement to the drainage strategy serving the adjacent heathland habitat.

5.25. Cats are not permitted on the existing hotel premises and will also not be permitted as part of the new development (and it is exceptionally rare for people to take cats to a hotel in any event). As such, no adverse impacts from cat predation would arise as a result of the proposed development.

5.26. Given that the existing hotel already provides cycle hire, it is not considered likely that the proposals would result in additional recreational users on the adjacent designated sites particularly given the slight decrease in overall occupancy of the hotel post-development.

5.27. The proposed development will offer a greater range of onsite facilities in comparison to the existing hotel complex, including the provision of spa and gym facilities and a new restaurant. Through this, as well as the re-development of the existing complex (which is in significant need of renovation), it is considered that guests will be far more likely to stay within the hotel complex, which in turn would likely reduce recreational pressure upon the nearby European sites further.

5.28. Drainage within the existing site is unregulated. Through the implementation of the proposed drainage strategy, the proposals are not considered to result in any adverse impacts with regard to water quality of local watercourses and nearby European sites. Indeed, it is also noted that the local water authority are upgrading the pumping station at Wadmore, which will be an overall betterment over the existing situation.

Isle of Portland to Studland Cliffs SAC / Studland to Portland SAC / Solent and Dorset Coast SPA / Poole Harbour SPA / Ramsar / St Albans Head to Durlston Head SAC

5.29. Given the distance between the Application Site and the of Isle of Portland to Studland Cliffs SAC, Studland to Portland SAC, Solent and Dorset Coast SPA, Poole Harbour SPA / Ramsar and St Albans Head to Durlston Head SAC, no adverse impacts are anticipated to these sites in relation to ‘land take’, lighting impacts or noise impacts.

5.30. The Poole Harbour Recreation 2019-2024 supplementary planning document sets out a SAMM mitigation strategy through financial contributions to mitigate for potential recreational impacts upon Poole Harbour. However, in this case, as no increase in the overall occupancy of the hotel is proposed, it is not considered that any adverse impacts would arise with regard to nutrient neutrality or air quality as a result of the proposals.

5.31. The Nitrogen Reduction in Poole Harbour supplementary planning document details a mitigation strategy to offset potential increases in nitrates through the mechanism of financial contributions. However, given the proposed reduction in occupancy detailed above, it is considered that

an overall reduction in nutrient outputs would be achieved, therefore representing an overall betterment to nutrient neutrality issues associated with the local European sites (i.e. Poole Harbour).

5.32. As set out above with regard to Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC, it is considered that the nature of the new hotel facilities will reduce the recreational pressure upon nearby designated sites through the provision of new facilities.

5.33. With regard to the specific concerns surrounding the proposed C3 usage of the new proposals, given the relationship of the accommodation to the hotel complex, it is not considered that the behaviour of guests staying within this accommodation would differ to that of guests staying within the hotel building itself. There are existing property controls associated with the existing hotel which mean that there cannot be a move away from the use of the site as a visitor destination. These measures provide a robust check and balance to ensure that the C3 use will be anything other than used in association with the hotel, for visitor accommodation. In order to address NE's concerns with regard to this C3 usage in the event that the hotel usage were to cease, an appropriately worded planning condition could be implemented to ensure that usage of the accommodation would only be permitted under usage of the hotel, to prevent any separation of the C3 units from the hotel complex and any potential residential usage of the buildings.

6. APPROPRIATE ASSESSMENT

6.1. Based on the information presented in the prior sections of this document it is not considered that the development proposals are likely to result in any adverse effects on any SAC, SPA, Ramsar site or SSSI (when considered either alone or in combination with other plans and projects).

6.2. Given that the proposals are not deemed to result in an overall increase in guests, no mitigation measures are considered necessary. As such the below measures proposed as part of the proposed development are deemed as enhancements.

Enhancement Measures

6.3. A number of enhancements are proposed as part of the proposed development, as detailed within section 5. These enhancements are summarised below:

- An overall reduction of total maximum occupancy of the hotel complex and likely subsequent reduction in nutrient and recreational impacts;
- The promotion of a circular walk to encourage guests away from sensitive European sites;
- Removal of an existing direct access point to the heathland from within the Wider Study Area woodland;
- Provision of a new enclosed dog-walking area;
- Restrictions on numbers of rooms with dogs;
- Reinstation of former mire along Wider Study Area boundary; and
- Vast improvement of onsite facilities providing greater attraction for guests to remain onsite.

6.4. In addition, Visitor Information Packs would be produced that would include information on local recreation including both destination for visits in the area to offer residents a choice of places to go, identification of the alternative circular walk available to guests (e.g. as per Plan HRA2 of this document), the sensitivities of local and designated sites and steps visitors can take to conserve the designated sites and wildlife for future generations while enjoying it themselves.

6.5. This would include ‘Countryside Code’ type information, e.g. explaining the need to keep dogs on leads when walking near sensitive sites such as the local heathland, cleaning up after a dog to avoid eutrophication effects etc.

6.6. If required, an appropriate planning condition can be attached to any planning permission to secure the proposed information packs.

6.7. Taking into account the enhancement measures outlined above and within section 5, at the Appropriate Assessment stage it is considered that the development proposals will avoid any potential significant adverse effects when the project is considered alone. At worst, the plan / project would give rise to effects which would be classed as nugatory.

Specific consideration of the In-Combination Test

6.8. It is considered by Ecology Solutions that likely potential effects from the development proposals on the: Dorset Heathlands SPA / Ramsar; Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC; Isle of Portland to Studland Cliffs SAC; Studland to Portland SAC; Solent and Dorset Coast SPA; Poole Harbour SPA / Ramsar; and St Albans Head to Durlston Head SAC (and component SSSIs) can be screened out from requiring Appropriate Assessment when the plan / project is considered alone or in combination. Nonetheless, enhancement measures are proposed to provide certainty over potential adverse effects on the European sites, at the Appropriate Assessment stage, it may be concluded with certainty that there would be no significant residual adverse effects.

6.9. On the basis that any other relevant development proposals will need to provide appropriate mitigation / avoidance measures to ensure no adverse effects on the European sites (in relation to potential in combination effects), and that when avoidance and mitigation is considered effects arising from the development proposals are nugatory, it is therefore concluded that there would not be any potential significant in-combination effects on any of the European sites (or component SSSIs).

6.10. Natural England have produced an internal document titled '*Natural England's approach to advising competent authorities on the assessment of road traffic emissions in the Habitat Regulations*' (June 2018). Although this document has been produced in relation to traffic emissions, they do set out their approach to in-combination effects, stating (with our emphasis):

6.11. *"In general terms, it is important for a competent authority to remember that the subject plan or project remains the focus of any in-combination assessment. Therefore, it is Natural England's view that care should be taken to avoid unnecessarily combining the insignificant effects of the subject plan or project with the effects of other plans or projects which can be considered significant in their own right. The latter should always be dealt with by its own individual HRA alone. In other words, it is only the appreciable effects of those other plans and projects that are not themselves significant alone which are added into an in combination assessment with the subject proposal (i.e. 'don't combine individual biscuits (=insignificant) with full packs (=significant)')"*

6.12. Also of note is the judgement *handed* down by Lord Justice Sales on 5th March 2015 in Dianne Smyth v The Secretary of State for Communities and Local Government [2015] EWCA Civ 174. At paragraph 98 it is stated that:

6.13. *"Mr Goodwin had emphasised in his evidence (see para. [50] above) that there was an important safeguard associated with the JIA arrangements, in that as each new proposed site was brought forward and planning permission sought in future, the relevant local planning authority, in consultation with Natural England, would have to make a further assessment under Article 6(3) before permission was granted for the development of that site (i.e. a further screening assessment and, as necessary, an "appropriate assessment", pursuant to the first and second limbs of Article 6(3), respectively; and see para. 8.5 of the Interim Report). Accordingly, the potential in-combination effects identified by the Council and by Mr Goodwin could not occur without further screening and*

appropriate assessments by a relevant competent authority, advised by Natural England."

6.14. As the development proposals are the subject of a specific HRA (this document), which concludes that there will be no adverse effect on the integrity of the European sites (i.e. that the effects alone are at worst nugatory, such that they are so small as to not be measurable), and that there will be no residual effects that would exacerbate any impacts on these sites, it can be concluded that there would be no in-combination effects arising from the development proposals.

Assessment Method for Determining Effects on Site Integrity

6.15. Judgements of whether the integrity of the European sites are likely to be adversely and significantly affected should be made in relation to the features for which the European site was designated, their formal Conservation Objectives, and set against the definition of integrity.

6.16. As referenced in Section 2 above, English Nature (now Natural England) produced internal guidance on determining site integrity (English Nature, 2004), which includes "*a simple, pragmatic checklist for assessing the likely effect on integrity*". This asks the competent authority to pose a series of five questions, as follows:

a) That the area of Annex I habitats (or composite features) will not be reduced?

b) That there will be no direct effects on the populations of the species for which the site was designated or classified?

c) That there will be no indirect effects on the populations of the species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?

d) That there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?

e) That there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?

6.17. The guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there is not an adverse effect on the integrity. If the answer is 'No' to one or more of the questions, then further site-specific factors need to be considered in order to reach a decision.

6.18. These site-specific factors are:

- Scale of impact;
- Long-term effects and sustainability;
- Duration of impact and recovery/reversibility;
- Dynamic systems;
- Conflicting feature requirements;

- Off-site impacts; and
- Uncertainty in cause and effect relationships and a precautionary approach.

6.19. This process has been used to assess the impact of the potential effects on the integrity of the Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC / Isle of Portland to Studland Cliffs SAC / Studland to Portland SAC / Solent and Dorset Coast SPA / Poole Harbour SPA / Ramsar / St Albans Head to Durlston Head SAC / (or Studland and Godlingston Heaths SSSI / Poole Harbour SSSI / Studland Cliffs SSSI / Purbeck Ridge East SSSI / South Dorset Coast SSSI / Townsend SSSI.

6.20. The effects of the proposed development are considered in relation to Natural England's site integrity checklist in Table 1 below:

Table 1: Consideration of Natural England's integrity checklist

	Qualifying Interest Feature
Dorset Heathlands SPA	Annex I Species : • Dartford Warbler *Sylvia undata* • Nightjar *Caprimulgus europaeus* • Woodlark *Lullula arborea* • Hen Harrier *Circus cyaneus* • Merlin *Falco columbarius*
Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC / Dorset Heathlands Ramsar / Studland and Godlingston Heaths SSSI	Annex I habitats: • Alkaline fens. (Calcium-rich springwater-fed fens) • Calcareous fens with Cladium mariscus and species of the Caricion davallianae. (Calcium rich fen dominated by great fen sedge (saw sedge))* • Depressions on peat substrates of the Rhynchosporion • European dry heaths • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae). (Purple moor-grass meadows) • Northern Atlantic wet heaths with Erica tetralix. (Wet heathland with cross-leaved heath) • Old acidophilous oak woods with Quercus robur on sandy plains. (Dry oak-dominated woodland) Annex II species: • Great crested newt *Triturus cristatus* • Southern damselfly *Coenagrion mercuriale*
Isle of Portland to Studland Cliffs SAC / Studland Cliffs SSSI / Purbeck Ridge East SSSI	Annex I habitats: • Annual vegetation of drift lines • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia). (Dry grasslands and scrublands on chalk or limestone) • Vegetated sea cliffs of the Atlantic and Baltic coasts

	Annex II species: • Early gentian *Gentianella anglica*.
Studland to Portland SAC	Annex I habitat: • Reefs
Solent and Dorset Coast SPA	Annex I species: • Sandwich tern *Sterna sandvicensis* • Common tern *Sterna hirundo* • Little tern *Sternula albifrons*
Poole Harbour SPA / Ramsar / SSSI	Annex I species: • Common tern *Sterna hirundo* • Sandwich tern *Sterna sandvicensis* • Mediterranean gull *Larus melanocephalus* • Little egret *Egretta garzetta* • Eurasian spoonbill *Platalea leucorodia* • Pied Avocet *Recurvirostra avosetta* Article 4.2 migratory species: • Shelduck *Tadorna tadorna* • Icelandic-race blacktailed godwit *Limosa limosa islandica*
St Albans Head to Durlston Head SAC / South Dorset Coast SSSI / Townsend SSSI	Annex I habitats: • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco Brometalia) (important orchid sites). (Dry grasslands and scrublands on chalk or limestone, including important orchid sites) • Vegetated sea cliffs of the Atlantic and Baltic coasts Annex II species: • Early gentian *Gentianella anglica* • Greater horseshoe bat *Rhinolophus ferrumequinum*
Has the Information for Appropriate Assessment shown that:-	
1) the area of Annex I habitats (or composite features) will not be reduced?	**Yes**. The proposed development will result in no losses through direct land take to any of the above designated sites.
2) there will be no direct effect on the population of the species for which the site was designated or classified?	**Yes.** The proposed development will not result in any direct effects on species including: • Dartford Warbler *Sylvia undata* • Nightjar *Caprimulgus europaeus* • Woodlark *Lullula arborea* • Hen Harrier *Circus cyaneus* • Merlin *Falco columbarius* • Great crested newt *Triturus cristatus*

	• Southern damselfly *Coenagrion mercuriale* • Early gentian *Gentianella anglica*. • Sandwich tern *Sterna sandvicensis* • Common tern *Sterna hirundo* • Little tern *Sternula albifrons* • Mediterranean gull *Larus melanocephalus* • Little egret *Egretta garzetta* • Eurasian spoonbill *Platalea leucorodia* • Pied Avocet *Recurvirostra avosetta* • Shelduck *Tadorna tadorna* • Icelandic-race blacktailed godwit *Limosa limosa islandica* • Greater horseshoe bat *Rhinolophus ferrumequinum*
3) there will be no indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity / quality)?	**Yes**. The proposed development will have no significant adverse effects on habitats supporting the following species: • Dartford Warbler *Sylvia undata* • Nightjar *Caprimulgus europaeus* • Woodlark *Lullula arborea* • Hen Harrier *Circus cyaneus* • Merlin *Falco columbarius* • Great crested newt *Triturus cristatus* • Southern damselfly *Coenagrion mercuriale* • Early gentian *Gentianella anglica*. • Sandwich tern *Sterna sandvicensis* • Common tern *Sterna hirundo* • Little tern *Sternula albifrons* • Mediterranean gull *Larus melanocephalus* • Little egret *Egretta garzetta* • Eurasian spoonbill *Platalea leucorodia* • Pied Avocet *Recurvirostra avosetta* • Shelduck *Tadorna tadorna* • Icelandic-race blacktailed godwit *Limosa limosa islandica* • Greater horseshoe bat *Rhinolophus ferrumequinum*
4) there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	**Yes**. The proposed development will not result in a direct impact to the Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC / Studland and Godlingston Heaths SSSI / Isle of Portland to Studland Cliffs SAC / Studland to Portland SAC / St Albans Head to Durlston Head SAC / Poole Harbour SSSI / Studland Cliffs SSSI / Purbeck Ridge East SSSI / South Dorset Coast SSSI / Townsend SSSI and therefore have no increased impacts upon habitats present.
5) that there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?	**Yes**. The proposed development will have no significant adverse effects on the designating features of the Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC / Studland and Godlingston Heaths SSSI / Isle of Portland to Studland Cliffs SAC / Studland to Portland SAC / Solent and Dorset Coast SPA / Poole Harbour SPA / Ramsar / St Albans Head to Durlston Head SAC / Poole Harbour SSSI / Studland Cliffs SSSI / Purbeck Ridge East SSSI / South Dorset Coast SSSI / Townsend SSSI, either alone or in combination.

6.21. As stated previously, the Natural England guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there will not be an adverse effect on integrity. It follows that in this case there is no need to consider any further site-specific factors in order to reach a decision.

Summary Conclusion of Appropriate Assessment

6.22. Having considered all of the potential significant effects that could arise from the development proposals, Ecology Solutions conclude that the proposals would not be likely to give rise to a significant effect on the integrity of the Dorset Heathlands SPA / Ramsar and Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC / Studland and Godlingston Heaths SSSI / Isle of Portland to Studland Cliffs SAC / Studland to Portland SAC / Solent and Dorset Coast SPA / Poole Harbour SPA / Ramsar / St Albans Head to Durlston Head SAC / Poole Harbour SSSI / Studland Cliffs SSSI / Purbeck Ridge East SSSI / South Dorset Coast SSSI / Townsend SSSI, when the development proposals are considered, either alone or in combination with other plans or projects. The proposed development would by definition be acceptable under the tests of the Habitats Regulations and therefore in those terms it is considered that the Competent Authority could grant consent for the proposed plan / project.

7. SUMMARY AND CONCLUSIONS

7.1. As outlined in this Shadow Habitats Regulations Assessment report, produced by Ecology Solutions, a detailed assessment of the implications of the development proposals on international / European designated sites has been undertaken, in view of the Conservation Objectives for the relevant sites. For completeness, consideration has also been given to effects on the component SSSIs of the European sites (albeit this site does not strictly trigger the tests of the Habitats Regulations).

7.2. The findings of this work are set out within this document such that the Competent Authority (the Dorset Council in this case), in exercising their duties under the Habitats Regulations, has all the necessary information before them in considering the development proposals.

7.3. All relevant potential pathways for significant effects to arise on the nearby European sites (and component SSSIs) as a result of the development proposals have been fully examined. A number of enhancement measures have also been proposed. This assessment has been undertaken with due regard had to relevant legislation, case law and planning decisions, guidance and information provided by Natural England.

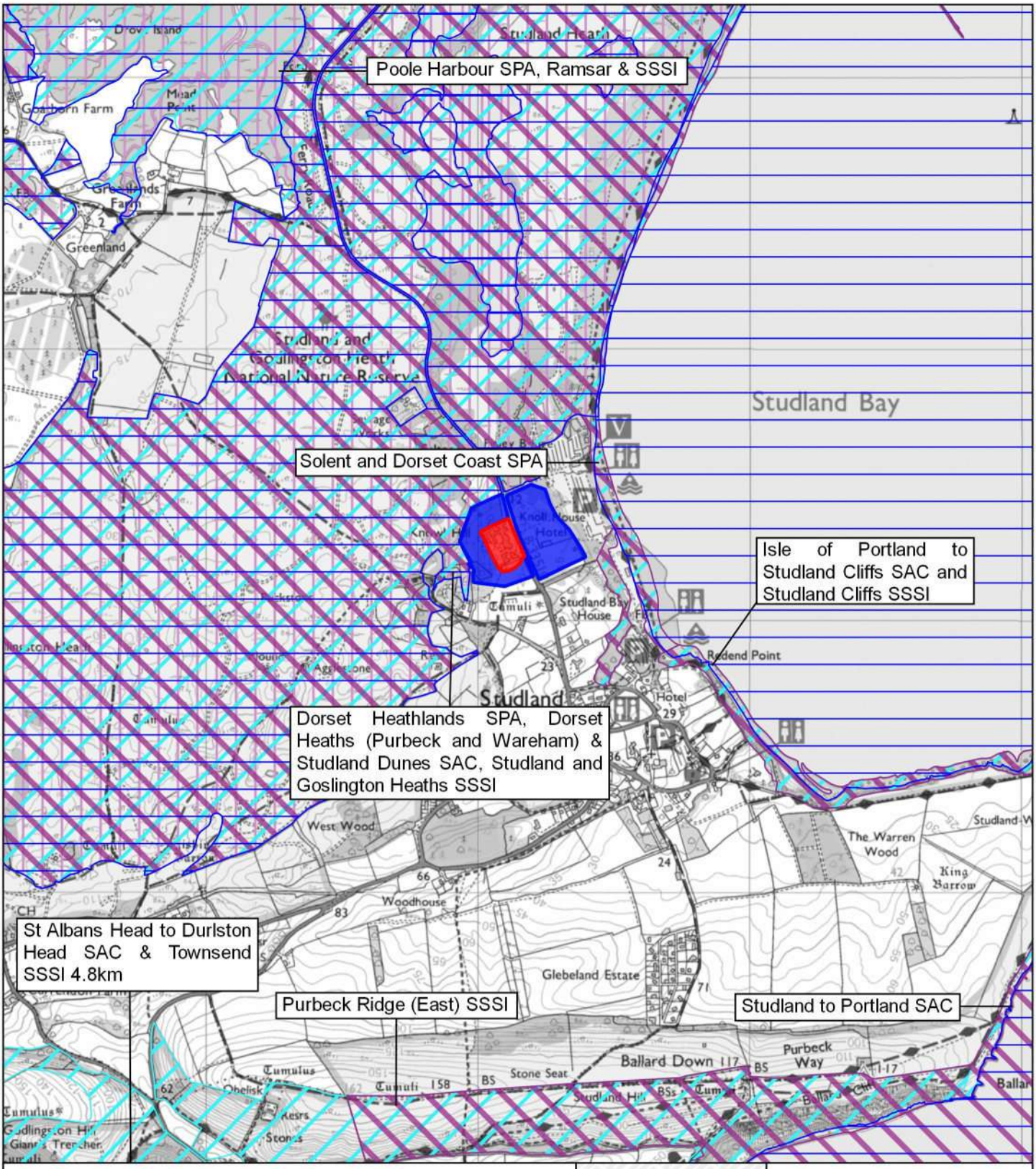
7.4. Having considered all of the potential significant effects that could arise from the development proposals, Ecology Solutions conclude that adverse effects on all nearby European sites could be screened out at the first stage of the assessment process such that an Appropriate Assessment (the second stage of the assessment process) is not required. However, proposed enhancement measures detailed within section 5 and 6 provide added certainty of no adverse effects. As such, the Appropriate Assessment process was completed in any event and concluded that the proposals would not result in any adverse effects on the integrity of any nearby European sites (in view of their conservation objectives) either alone or in combination with any other plans or projects (and the same would be true for the component SSSIs).

7.5. As such, the development proposals would, by definition, be acceptable and the competent authority could legally and safely grant consent for the proposed plan/project.

PLANS

PLAN HRA1

Application Site Location in relation to International / European Designated Sites



KEY

- APPLICATION SITE
- WIDER STUDY AREA
- SPECIAL PROTECTION AREAS (SPA)
- SPECIAL AREAS OF CONSERVATION (SAC)
- SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- RAMSAR SITE

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND, SWANAGE

PLAN HRA1: APPLICATION SITE LOCATION, ECOLOGICAL DESIGNATIONS AND OFFSITE POND LOCATION

Rev: A

Nov 2022

PLAN HRA2

Ecological Enhancements Plan

Existing access from woodland to Godlingston Heath removed

Former mire to be restored along Wider Study Area boundary

Circular Walk promoted to guests approximately 1.72km in length

Enclosed dog-walking area where guests can safely let dogs off leads away from designated sites. Dog waste bins and biodegradeable dog bags to be provided.

KEY:

- APPLICATION SITE
- WIDER STUDY AREA
- DOG WALKING AREA
- ENHANCED WOODLAND
- RESTORED HEATHLAND
- MIRE RESTORATION
- ADJACENT WET WOODLAND
- CIRCULAR WALK TO BE PROMOTED TO GUESTS

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND, SWANAGE

PLAN HRA2: ECOLOGICAL ENHANCEMENTS

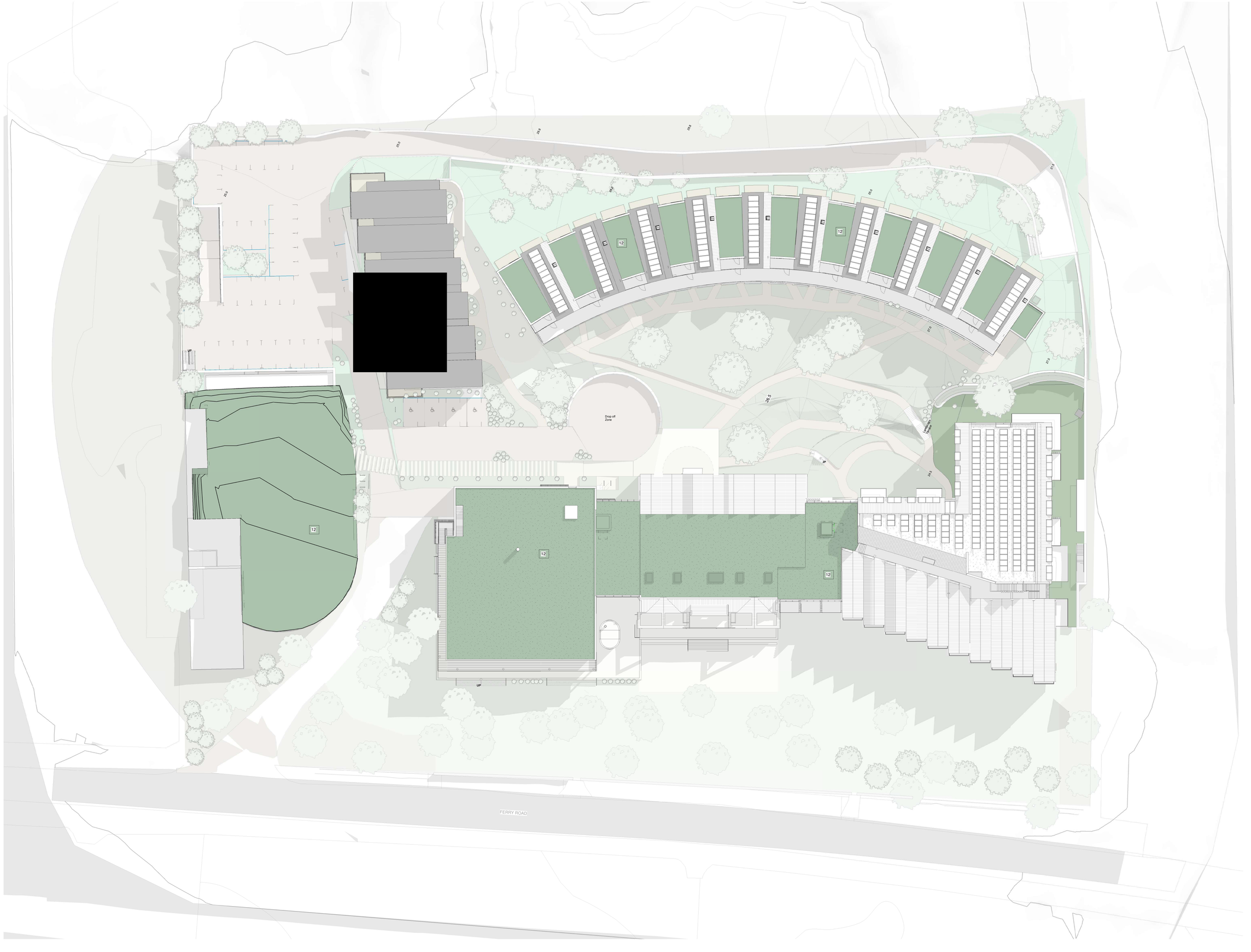
Rev: A

Nov 2022

ANNEXES

ANNEX 1

Site Roof Plan (AWW)



Notes

Do not scale from this document, unless for the purposes of planning applications where a scale bar is provided. Refer to figured dimensions only. All dimensions to be verified on site prior to construction. Report all discrepancies or ambiguities to the Document Originator immediately. This document is to be read in conjunction with relevant documents, drawings and standards.

Landscape proposals represent an outline design only. Detailed design to be developed by landscape architect.

25.000m Proposed level

[25.000] Existing level

Landscape Key

- Existing tree retained
- New tree proposed
- 1 Band 1: Outer fringe planting - native species heath and grassland
- 2 Gabion retaining wall with planting
- 3 Vehicle route - Resin bound gravel
- 4 Band 2: Grasses, heather, native trees and bulb planting
- 5 Low stone wall
- 6 Pedestrian route - resin bound gravel
- 7 Band 3: Lawned garden
- 8 Band 4: Paved Terrace
- 9 Steel access steps dark grey finish
- 10 Paved steps
- 11 Green wall
- 12 Green roof
- 13 Timber Screen

Rev	Date	Notes	Drn	Chk'd
P06	17/10/23	ISSUED FOR PLANNING	GCT	MAS

2 0 2 4 6 8 10 m

SCALE 1:200

Document Originator

AWW

London 106 Weston Street, SE1 3QB 020 7160 6000
Plymouth East Quay House, PL4 0HX 01752 261 282
Bristol pivot + mark, 48-52 Baldwin Street, BS1 1QB 0117 923 2535

RIBA Chartered Practice www.aww-uk.com

Client
Kingfisher Resorts Studland Ltd

AWW Project Number
4561

Project Stage
STAGE 2

Project Title
Knoll House
Studland

Title
Site - Roof Plan - Proposed

Scale @ A0
As indicated

Document Status
PLANNING

Project	Origin	Volume	Level	Type	Role	Number	Rev
4561	AWW	SI	RF	DR	A	20003	P06

ANNEX 2

Consultation Response from Natural England (dated 15th February 2019)

Date: 15 February 2019
Our ref: 265295
Your ref: 6/2018/0566

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Mr Collins,

Planning consultation: Redevelopment of existing hotel to provide new tourist accommodation including 30 bedroom hotel, apartments & villa accommodation, associated leisure & dining facilities (Environmental Impact Assessment development)
Location: Knoll House Hotel, Ferry Road, Studland, Swanage, BH19 3AH

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Summary
The ES has failed to provide suitable information to allow Natural England to advise the authority that there will not be adverse effects relating to a number of European and internationally designated sites. These arise from increased and intensified recreation and recreation related harmful activities on the heathland and dune area and follow from a simplistic approach to the assessment of existing and future levels of activity and impacts based solely on numbers of rooms/keys. Increased levels of recreation related pressures on Poole Harbour SPA and Ramsar. Increased levels of nutrients enriching Poole Harbour SPA/Ramsar.

A risk of surface and foul water pollution to the adjacent designated sites.

There is a deficiency in ecological and visitor survey information.

Natural England concur with the Dorset AONB that the proposal will lead to significant adverse effects contrary to national and local policy and the Dorset AONB Management Plan.

Objection further information required

The development is within 400m of European and internationally designated sites and within 40m-5km of additional component parts of the designated sites.

Change of use of the site from a hotel to residential use is a major concern for Natural England. This is apparent from the CIL liability statement which states that there will be 8023m of market housing and 7019m of non-residential floorspace. The provision of 63 units which are referred to as villas and apartments all within 400m is likely to have a substantial impact on the surrounding designated sites both within 400m but also in the area 400m – 5km without adequate mitigation *if* these are effectively residential units. It would appear so from the CII information, however Natural England advise that this point needs clarification.

Design and Access statement
It is acknowledged at p7 that the proposal will result in an intensification of use but states it will not

be significant. This is not quantified in the documentation.

The constraints and opportunities plan makes reference to 400m distance, the evidence available indicates a 2.3km distance is a much more realistic distance for recreational access.

Natural England is very concerned that the application proposes a number of attractions such as a public swimming pool which create a real risk of attracting people to the site and then using the surrounding areas for recreation as part of the visit. This consideration has been a factor in other appeal cases which concluded that such facilities resulted in net increases to the adjacent countryside.

Natural England note the applicant has taken on board some comments concerning the design and materials used which do help *somewhat* to reduce the visual impacts if not the scale and mass of the buildings within a rural setting in the AONB.

At page 70 the access links clearly indicate provision will be made/maintained for access directly into the designated sites to the west.

Environmental Statement
Para 4.8-4.9 There is a lack of clarity about the occupation of the current facility. Terms are mixed and confused with keys, rooms staff on site and beds being conflated to maximise an apparent number of bedrooms. There is no evidence of actual occupancy rates amongst the residents or staff. It is now clear that it is currently being occupied all year round by the current owner. At 4.10 it is stated there is a reduction in 35 units but no indication of where this figure arises from? It would be a reasonable assumption that from 106 bedrooms in the Hotel to 93 accommodation units is a reduction in 13 not 35. There is no confirmation of the number of car parking spaces currently however it calls into question the veracity of the document that whilst there will be 93 in total accommodation units the number of carparking spaces will be 84 not allowing for local users of the new facilities or even staff who may come by car. The Transport Assessment(TA) provides some further highly questionable information with no robust survey of car numbers and an estimated car parking capacity of 79 spaces, although these are not confirmed just estimated. Similarly the document has difficulties separating out hotel rooms from keys with circa 95 keys out and 55 vehicles parked, no methodology just noted on one occasion. However this ratio of 0.58 can then be extended *reliably* to other assertions.

Paragraph 8.46 indicates that there is likely to be an increase in average stay duration, more and larger groups of visitors and an increase in guest time in the hotel.

The applicant has not provide clear evidence, other than by written statements, relating to the number of rooms available in the hotel and their likely capacity. They have provided detail of a number of “keys” however there is no clear evidence as to what this relates to. Natural England require the applicant to provide additional supporting evidence to demonstrate current use and capacity of the hotel although TA para 2.18 indicates that there is a an occupancy of 95 rooms out of 106 in the high season.

Para 8.48 The ES does not quantify how the resorts operation will actually change residents behaviour. It is clear to Natural England that the setting and location of the site are key attractors and that it is highly unlikely that the offer on site will be an alternative to the natural landscapes surrounding. To state that the provision of facilities as diverse as a nail bar and Jacuzzi will provide an effective diversion from the surrounding designated landscapes is simply not evidenced. There seems to be confusion about facilities as both facilities are stated as having indoor and out door pools?

Given the focus on healthy activities such as swimming, gym, fitness studio and a crèche it seems much more likely that residents will be more active in the main attraction the surrounding landscapes than for the current user group.

Natural England is particularly concerned that 63 apartments will have a self catering

accommodation. The SPD makes a clear distinction between hotel and self catering accommodation in considering adverse effects, the latter having far greater risks than the former.

Para 2.31 of the Transport Assessment provides some background indicating that those arriving by car use it for 70% of the time eg 30% is spent nearby the resort whilst those who arrive by another method remain close to the destination for 80% of the time and that families are more likely to be car free during a holiday.

Para 8.50, there is no detail about what the Property Management system is or how it offers statistically accurate predictions on what occupants will do. Reliance on the survey of visitors is flawed as set out above. There is no actual explanation of how additional recreational pressure will be reduced, simply a discussion about number of visitors and facility capacity without a suitably robust evidence base.

Para 8.51 There are no trekking activities allowed on the foreshore during the summer months so no visitors would have this opportunity. No evidence is presented to demonstrate that residents will actually do less recreation in the surrounding countryside or cause any less litter, soil erosion or any of the other adverse effects documented – the statements simply rely on a marginally lower level of accommodation units, 93 compared to 95. Invasive species are already present in Little Sea as a result of public access so it is not credible to discount this pathway. The particular species referred to in this section is Erica ciliaris. With respect to burning this adverse effect is due to arson or possibly accidental fires including careless barbequing, increased access increases the risks. The TA does not present data which is conclusive that there will be less traffic, in fact it shows that in the high season there is a need for 55 spaces against a provision of 79 whilst the application claims to be reducing the reliance on cars whilst increasing capacity to 84. There is however unlikely to be adverse effects on the designated sites due to air pollution.

Para 8.54 The applicant has not demonstrated that there will not be adverse effects on the adjacent heathland sites or Poole Harbour SPA. In respect of Poole Harbour SPA/Ramsar recreation related access to the foreshore and harbour cannot be discounted and a suitable contribution should be made to the Poole Harbour Recreation Planning Framework 2019-2034 SPD. The applicant has not considered nutrient enrichment effects on the Harbour and a suitable contribution should be made to the Nitrogen Reduction in Poole Harbour (SPD 2017).

Reptiles

There has been no survey of reptiles despite the site lying within close proximity of an area supporting all species of UK species. From personal experience both sand lizards and smooth snakes can disperse into woodland and managed landscaped areas such as gardens and acid grassland habitats. In this context the development site is very close to supporting habitats and with open countryside between which is no serious barrier. Natural England advise that the authority must satisfy its self that these species are not present by requiring a reptile survey. No effective mitigation can be planned or established until such is carried out. In addition the authority will establish the presence or absence of other legally protected reptile species which are similarly likely to utilise the area. Natural England advise that the use of a local ecological contractor to carry out reptile survey be considered. This information should be secured prior to the granting of any permission.

Residents questionnaire

The methodology and information provided is substantially flawed and does not present the authority with a reliable set of data with which to assess levels of use and behaviour of residents. Details are provided at Annexe 1, examples include the lack of professional experience in the consultancy, the lack of a clear briefing text for those handing out the questionnaires, no record of how many were handed out and no contextual information about the actual period when these were handed out and hotel occupancy during this period. The absence of a person to complete the questionnaire with the respondent means that questions were likely to be misunderstood and so incorrectly completed. Locations detailed are confused and would lead to respondents just ticking boxes, use of a map would have been required to ensure veracity. The most critical point is that the survey was essentially self-selecting rather than being comprehensive.

The survey did not provide any information on the number of staff living on site or their use of the surrounding areas, Natural England assume this to be negligible.

Based on the occupancy level of 95 hotel rooms in the high season, a reduction to 93 before any changes in behaviour due to the nature of the occupants eg self-catered villas and apartments are considered it is clear to Natural England that the ES has been unable to show that there will not be a likely significant effect.

Preliminary Ecological Appraisal with HRA scoping opinion.
Natural England note reference at 3.4.1 to a Property Management System which has data relating to hotel occupancy (Annexe 4.5). This report has not been located either within this document or in the ES. It provides important information relating to many assertions in the documentation and needs to be available for scrutiny by the LPA and Natural England.

Surface Water - Knoll House Hotel Drainage Strategy (260799-KHH-REP-DR-0002)

This report states that the conclusions reached are not based on any survey or formal site studies and are largely assumptions. Water quality from both surface water and foul water is a serious concern because of the close proximity of SAC, and Ramsar sites. Section 4.1 notes that there are streams to the west of the site and indicates a potential drainage strategy. Given the natural springs to the north (4.2) of the site there is a clear risk to water quality in the designated sites which has not been considered and therefore Natural England can only conclude a Likely Significant Effect and that further details must be provided. In addition there is no clear assessment of the infrastructure or works which may be needed to deal with the foul sewage or if the pumping station which is known to have occasional leaks has the necessary infrastructure or capacity. Natural England has raised the issue of some natural management measures.
Para 6.1.3 indicates that the STW has not confirmed that the capacity proposed can be accommodated.

Natural England advise that all the water from the pool should be discharged to the foul system to avoid pollution of adjacent natural habitats, and support the proposed discharge timing to avoid other higher flow periods. This should be secured through a planning condition.

Natural England welcome the proposal to keep roof drainage separate from other surface waters. However further assessment is required overall to confirm the potential pollution pathways to the designated sites have been avoided.

The report notes the following occupancy at para 6.1.2

39 hotel staff on site
30 hotel rooms = 60 people (2 occupants)
43 apartments = 172 people (4 occupants)
20 villas = 80 people (4 per villa)

A total of 351 on site, comparatively the current hotel has 106 rooms with 56 on site staff a total of 268.

NVC Survey
Natural England does not concur with the view expressed that it would be acceptable to plant trees in the acid grassland, there is no benefit to this priority habitat. Natural England agree that the proposal to remove all piri piri burr from the site would be welcome.
A Heathland Management Plan as proposed in Section 7 would be welcomed, it should include drain blocking. The Woodland management should in addition remove non-native evergreen species such as Holm Oak etc and aim to open up vegetation around the springlines from Knoll Hill by removing the brick built structures.

It is unclear if the area of acid grassland referred to in the Ecological Impact Assessment (EcIA) as

being lost is the same are as shown in Fig 8.1 as semi improved grassland in the Phase 1 Survey.

Transport Assessment and parking capacity
The prosed car parking numbers seem highly unlikely to be sufficient given the level of guest accommodation units and also staff parking which may be necessary. There is little if any suitable staff accommodation in Studland and some may well wish to drive to work from other settlements with affordable rents. With the additional attraction of a public pool, restaurant, nail bar etc it is difficult to see the application resulting in anything than increased congestion in the area. This is a particular concern as there is a significant and increasing fire risk on the designated sites and increased congestion through parking is likely to hamper emergency efforts during the peak period in the summer months.

The addition of self catering accommodation as well as displacement of on site staff is likely to lead to increased use of roads by private cars both for trips but also for parking off site, it is unrealistic to rely on public transport provision which is in steady decline locally. The data available indicated that the occupancy within the application site will be substantially increased, in raw numbers of residents, additional visitors using facilities and in terms of all year round use rather than any demonstrable level of reduction in use.

Were the hotel staff to operate the speculative suggestion of car sharing they would need 10 car parking spaces further reducing on site capacity 93 accommodation units and 10 spaces for cars compared to 79 proposed.

Landscape impacts
Plan ref: Knoll House 0163_011-Off Site Screen Planting indicates planting to screen the development in an area for which the priority objective is to restore semi-improved acidic grassland as is present in the adjacent field. The removal of the existing rocks and soil is to be welcomed although it is not clear that the applicant has secured agreement with the landowner to permit access to carry out the works. The restoration of grassland, removal of rocks and imported soil etc should be the subject of a planning condition requiring a Method Statement. No trees should be planted.

Natural England is concerned about the highly visually intrusive glass storey proposed, not only is this feature not in keeping with the general context it is also likely to create more significant impacts at night and during the day from reflections. This has not featured in any discussions with Natural England.

It is unclear if path 4 will be open to occupants to access the surrounding countryside?

Landscape planting within the red line area (Knoll House 0163_300-Planting Proposed Trees), Natural England object to the use of Amelanchia which is an invasive species on heathland sites. In addition Natural England advise that use of species such as alder and field maple would be in appropriate on the dry acidic heathland soils. Use of mountain ash should be only a native stock rather than variety. The replacement of a priority habitat

LVIA
Natural England note the extensive and detailed advice provided by the Dorset AONB Landscape Planning Officer over a number of communications. The detailed review of the information in the ES which is some 16 pages makes it clear that there remain substantive and robust concerns with the assessment and its conclusions. These clearly are at odds with the NPPF and may be summarised by Mr Browns advice:

"In my opinion there are clear grounds to consider the application to fail this aspect of the test. Overall, the application does not conserve or enhance the character and appearance of the AONB. Instead the application generates significant adverse effects, including upon SQs that underpin the AONB's designation. For this reason, I consider that the application conflicts with those policies of the current AONB Management Plan that I have listed in section 3.3.1."

Natural England support the position and confirm the advice to the authority that the assessment and its mitigation measures are not compliant with the NPPF or Local Plan policy as well as the AONB Management Plan and would lead to significant adverse effects. Natural England would welcome ongoing discussions with the applicant to revise the proposal in the iterative manner implied by the EIA process.

The ES takes a view that no mitigation measures are required despite the clear guidance set out in adopted Local Plan policy, adopted SPDs and a draft SPD relating to European and internationally designated sites in close proximity. The applicant has not provided information to demonstrate conclusively that there will not be a likely significant effect. Natural England advise the authority that there will be likely significant effects on the following designated sites:

Dorset Heathlands SPA
Dorset Heathlands Ramsar
Dorset Heaths (Purbeck and Wareham) and Studland Dunes (SAC)
Dorset Heaths SAC
Poole Harbour SPA
Poole Harbour Ramsar

In the light of the recent ECJ ruling (People Over Wind & Sweetman v Coillte Teoranta (Case C-323/17)) which concluded that the avoidance/mitigation, e.g. as set out in the Dorset Heathlands Planning Framework (2015 – 2020) SPD, cannot be taken into consideration when considering the Likely Significant Effects of proposals on European wildlife sites (and Ramsar sites as a matter of Government policy). Natural England advise your authority to undertake an Appropriate Assessment of the application as is required under Reg 63. At this time however Natural England advise the authority that the *lack of information* alone would be sufficient to determine the application in accordance with the regulations.

Natural England advise the authority that because of the sensitivity of the specially protected bats to increased light levels the authority should require a planning condition requiring a lighting strategy to be submitted indicating the location and specifications of the lighting to avoid sensitive areas and that this strategy is to be supported by a written confirmation from the consultants that the adverse effects are avoided for the European protected species. The strategy should require the provision of lighting which is controlled more strictly during summer months to avoid dawn and dusk periods rather than 24 hour lighting, (DA statement p71).

Restoration of existing areas of land currently within the leasehold but outside of the red line application site will need to be agreed and secured through a planning condition eg Knoll Hill area.

Natural England note that the application includes a Biodiversity Mitigation Enhancement Plan certificate signed off by the DCC NET (8/5/2018) and conclude that the securing of the BMEP through a planning condition will secure suitable mitigation and enhancement in compliance with the authorities statutory duties, and the requirements of the NPPF Habitats Regulations.

The veracity of the FTP is questioned as it appears to have been a document formerly relating to a different location, essentially paying lipservice to this requirement : see para 7.6 indicating a location close to Edwalton? Rather than confirming actual commitments many of the measures are simple suggestions which have no actual weight and are unsecured eg para 7.13

> *A shuttle bus service could be implemented to transport staff and guests from local hubs in the surrounding area. The pick-up locations could be determined as part of the initial baseline travel surveys, identifying the main home locations amongst staff.*

I trust this advice will assist you and the authority in considering the application further.

Yours sincerely

Nick Squirrell
Conservation and Planning Lead Advisor
Dorset and Hampshire Team
Dorset, Hampshire and Isle of Wight Area Team
Natural England
Mob: 07766 133697
Email nick.squirrell@naturalengland.org.uk

Annexe 1
Initial comments on survey methodology

1. No confirmation of methodology from Natural England, resulting in numerous flaws.
2. Survey should have had a professional surveyor asking all residents consistently for a period of time, not just handed out and so self selecting.
3. Need to carefully brief staff to elicit all questions.. some not answered
4. Forms provided to guests at check in “during July and September 2018”, August included, dates for visits would have been essential.
5. Relative rate of response to the number of visitors in the hotel
6. Better to elicit survey face to face on check out
7. Bespoke questions should have been agreed eg have you visited any of the following? Dunes, Agglestone, heathland, Littlesea, Poole Harbour foreshore with a walking map.
8. Locations used by dog walkers as survey not specific eg grassland surrounding hotel?
9. Cycling – thin thick tyres?
10. Use of map to show used locations? Some unclear, eg front and side of hotel east and south do people know what this means, a map would have been best. Also places named may be confusing to residents, Stud and God NNR includes the dunes… so total these.
11. By naming sites you assume that people know where they are going… confirm on map
12. What about picking up dog faeces?
13. No post codes to ascertain distribution and distances travelled?
14. Seven people did not understand Q17-22 should have been fully excluded shows the approaches weakness by not having a person to take the responses down.
15. Refusals were not recorded or the total number handed out or how this was communicated to respondents, was the form handed out to all or just those with dogs – a lot of chance for error, how were hotel staff asked to introduce the form and were all staff briefed ?
16. Hotel occupancy? Number of sheets handed out number of days represented – all unclear
17. No indication if these are regular visitors or first timers…
18. 156 responses, can one assume proportions for users/activities numbers of visits?
19. Lack of professional experience in the Ecological Consultancy is clear from the experience cited

ANNEX 3

Consultation Response from Natural England (dated 17th February 2020)

Date: 17 February 2020
Our ref: 265295
Your ref: 6/2018/0566

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Mr Collins,

Planning consultation: Redevelopment of existing hotel to provide new tourist accommodation including 30 bedroom hotel, apartments & villa accommodation, associated leisure & dining facilities (Environmental Impact Assessment development). Submission of revised plans and further EIA information (Reg 25).
Location: Knoll House Hotel, Ferry Road, Studland, Swanage, BH19 3AH

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Summary
The ES has failed to provide suitable information to allow Natural England to advise the authority that there will not be adverse effects relating to a number of European and internationally designated sites. These arise from increased and intensified recreation and recreation related harmful activities on the heathland and dune area and follow from a simplistic approach to the assessment of existing and future levels of activity and impacts based solely on numbers of rooms/keys. Increased levels of recreation related pressures on Poole Harbour SPA and Ramsar. Increased levels of nutrients enriching Poole Harbour SPA/Ramsar.

A likely hood of surface and foul water pollution to the adjacent designated sites.

The applicant has proposed ineffective mitigation measures and lacks control over the adjoining land to ensure delivery of any measures in the long term

Objection
The new information supplied indicates the following summary of the proposal:

- Proposed amendments to design and layout resulting in changes to accommodation schedule from a mix of 30 hotel rooms, 43 holiday apartments and 20 holiday villas to a 30 bed hotel, 41 holiday apartments, 6 villas and 16 maisonettes.

Occupancy type in the application.
Natural England advise that the proposed change from a Hotel use to a mixture of hotel and C3 uses is contrary to Local Plan policy in the Local Plan as well as the Dorset Heathlands Planning Framework 2015 - 2020 SPD advice within 400m of specially protected heathland sites.

Information provided in the CIL liability form dated 11/10/2018 and email correspondence dated 3/12/2018 confirm the applicant and authorities view that the development constitutes 8023 sq.m of market housing/additional dwellings. It is now Natural England's understanding that the proposal represents additional dwellings in use class C3 compared to a current hotel which falls into use class C1. The additional dwellings total some 63 residential units. This application is therefore

contrary to the adopted Local Plan policy DH as well as the guidance set out in the Dorset Heathlands Planning Framework 2015 - 2020 SPD. The SPD does not set out a need for generic mitigation measures for new Hotels, individual applications are considered on a case by case basis with particular scrutiny focussed on any proposals within 400m. Beyond 400m hotels are not generally required to secure mitigation relating to the Dorset Heathlands because the SPD advice focusses on residential developments or tourist developments which are self-catered. This application therefore falls into the type involving self-catered facilities where impacts are directly equivalent in effects generated to C3 development.

The application also leads to an increase in both cycle storage and car parking on site. This raises concerns about increased recreational pressure both from off road cycling and also from visitors to other facilities combining access to the heathland etc with dogs. Natural England advise there should not be a net increase in car parking from the current level of 79.

The applicant has proposed a covenant to restrict the keeping of cats (Proposed Ecological Enhancement Plan, App 4.1), this has been reviewed during Appeal Hearings and it does not provide sufficient certainty. There are no monitoring or enforcement mechanisms which would allow the authority to take action should an infraction of a convent occur. This is therefore an ineffective mitigation mechanism and must be discounted.

The applicant has proposed a woodland walk as a mitigation measure, the length of route provided and specification is not set out, however it is unlikely to deter access to the extensive countryside Studland Heath and beach or Godlingston which has a direct path from the west side. This measure is considered to be ineffective in this location.

Natural England advise to the authority is that the proposal will have a likely significant effect on a number of designated sites listed further below. These adverse effects arise from a change in the use of the site from a hotel to primarily residential use with concurrent increased occupancy throughout the year. The variety of new attractions and increased capacity for car parking/cycles are likely to attract more visitors who are then likely to access the designated sites. The effects include increased recreational pressures on the nearby heathlands, increased risk of foul and surface water discharges to the designated sites and increased recreational pressure on Poole Harbour SPA, Ramsar. Increased levels of nutrients arising post treatment from the nearby STW affecting Poole Harbour SPA, Ramsar.

Natural England advise the authority that some mitigation measures could be secured through agreement with the landowner adjoining, however the nature of the development, bringing in substantial C3 development means that the proximity of the designated sites is such that an adverse effect on integrity is not likely to be mitigated. Natural England sustain its objection.

LVIA Dorset AONB

Natural England concur and support the Dorset AONB objection dated 18 October 2019 that the proposal will lead to significant adverse effects contrary to national and local policy and the Dorset AONB Management Plan.

Natural England note that the applicant has reduced the height of buildings to the south (B1 and B2 and modified the design) which is welcome.

The height and mass of building C3 present particular issues of concern and it is particularly reliant on existing woodland screening (from south, north and west) which is of limited functional value given the tree ages and which is not within the applicants long term control to secure. The same comments apply to building D which seems particularly unsympathetic to the current development and local context.

Given the previously unexpected appearance of the glass box feature Natural England seeks clarification that there will be no access onto the green roof of building D which is a flat roof? The impacts of seating, perimeter fencing, awnings etc may need to be considered. The landscape masterplan shows features present.

It is a concern that the Photomontages at Annexe 3.2 Part C. appear to provide very optimistic views of the benefits of the trees planted, this includes an overly generous height estimate as well as a failure to consider that the current pine trees provide year round amelioration whilst the number of trees proposed which are evergreen is small compared to the deciduous species proposed. Natural England is sceptical that the claimed screening and growth rates are realistic, particularly from the southern aspects. No consideration of the effects of tree loss due to age, weather (height suppression due to wind and salt damage) etc has been carried out from the north or western view points.

Plan 0163_011-Off Site Screen Planting, shows planting of land to the south with oak and birch. This grassland is a priority habitat and the planting of trees degrades the habitat quality, in addition oak grown on acid grasslands are exceptionally slow growing and achieve limited height in Dorset.

Land ownership considerations
Natural England understand from the National Trust that land outside of the redline application area is leased to the applicant but that the lease terminates in September 2020. This being the case the authority can have no certainty concerning the delivery of any works to mitigate either landscape or biodiversity impacts. This includes certainty that adverse effects on European or internationally designated sites can be delivered as these lie outside of the authorities control and between the landlord and tenant, there is for example no certainty that the lease would be extended or that the landlord would agree to the proposals so that planning conditions would not be able to be delivered. The applicant has failed to demonstrate that measures beyond the immediate application boundary are secured and therefore certain. Therefore in determining the application the authority may not afford proposals within the redline area any weight in its assessment at this time. For any proposals to be considered as secured measures should be secured in perpetuity eg 80 years through a lease arrangement. Natural England in not aware of any discussions progressing towards meeting this requirement.

Reptiles
Natural England note the survey has now been carried out and concur with the findings and recommended need for a planning condition Section 3 (Appendix 4.3 Reptile Survey) which will ensure appropriate working conditions and mitigation through a BMEP process agreed with the NET.

Proposed Ecological Enhancement Plan (App 4.1)
The removal of non-native invasive species from the woodland is welcomed as is the creation of glades. Natural England advises that the area of SAC and SPA performs no function essential to the application and it should be relinquished to the National Trust who are the owner.

The same general comments apply for the Ecological enhancements outside of the application site, these are unlikely to be within the control of the applicant after 2020 because the lease expires. Hence neither the woodland management of dog exercise/training area may be considered as secure measures.

Woodland Management Plan App 4.4
The general objectives for the two compartments are acceptable to Natural England however the area lies outside of the applicants ownership. Natural England advise the authority that the preferred option for the woodland in Compartment 1 would be to establish a mixture of broadleaved woodland and heathland through the removal of non-native shrubby and tree species as well as gradual removal of pine trees which is in line with the owners intentions.

If this matter is resolved a planning condition securing the production of a costed Woodland Management Plan covering 25 years should be required.

Planting Schedule Overview 4/9/2019
Natural England object to the proposed planting of EM6, chalk meadow mix. This part of Dorset is

dominated by acidic low nutrient conditions, any habitats created should tie in with the local biodiversity rather than introduce a typical plant mixes. It should be noted that the soil type present will need substantial modification to achieve such species in the long term.

In addition Natural England object to the use of Amelanchier lamarckii in the formal planting areas, this species is known to be locally invasive into heathland soils where it is difficult to eradicate.

Surface Water - Knoll House Hotel Drainage Strategy (260799-KHH-REP-DR-0002) 14/11/2019
The current drainage strategy shows attenuation of flows to 2L/sec and 21 L/sec (1:30 yr) straight into a pond which is within the designated sites. Whilst it states that the flows have been calibrated for 1:100 year + 40% for Climate Change there are no details of what a 1:100 year event flow might be or where excess water might go. Natural England advise that simply discharging 21l/sec down a piped gradient will cause significant effects such as silt release/scour etc if there are no control structures at the discharge point. There is no silt or oil interception, no maintenance regime proposed for all elements and no consideration of the potential adverse effects of enriched water with a higher pH on the acidic communities in the designated sites. In the absence of such details it is clear that there could be accidental pollution which is not capable of being managed or controlled but simply runs off the applicants site into the designated sites.

It is noted that the report states that “Resilience and redundancy of this system should be considered in greater detail at the next stage in consultation with Wessex Water.” Natural England advise the authority that on the basis of the available information and the noted pollution events (over 36 per year on occasion) that this matter needs to be resolved now so that the authority may take a view. The pumping station lies between the designated sites and land in the ownership of the National Trust so options for a larger facility are very limited.

The layout plan 0163_451 shows the use of permeable paving to encourage infiltration. This is welcome however Natural England advise that this measure for avoiding polluted surface water run off does need a maintenance regime for the duration of the project, eg in perpetuity or 80 years. In addition it is unclear how the applicant intends to demonstrate that pollution events are avoided without an agreed method for monitoring water quality.

Flood Risk assessment 14/11/2019
4.2.4 Natural England is aware of the overflow of sewage from the pumping station to the west directly into the designated sites. With an increase in occupancy from the development it is difficult to see how current discharges will not increase due to increased volumes.

It is proposed to discharge surface water directly into a watercourse which flows through and into designated sites, this is not acceptable as there will be enrichment and pollutants from the surface water.

The plan SK-FW-0001 shows all foul water drainage to the nearby Wadmore Lane Pump House. This regularly overflows into the designated sites and watercourse. Natural England has advised the authority and applicant that a remediation/avoidance plan should be drawn up. At this time there is no information about additional expected flow rates in-relation to the capacity at the station.

Natural England advise that issues around surface and foul water management may be addressed but require a more proactive approach with the National Trust and Wessex Water. At this time Natural England conclude that there is a likely significant effect on the designated sites which is not shown to be avoided or mitigated.

The report notes the following occupancy at para 6.1.2

39 hotel staff on site
30 hotel rooms = 60 people (2 occupants)
43 apartments = 172 people (4 occupants)
20 villas = 80 people (4 per villa)

A total of 351 on site, comparatively the current hotel has 106 rooms with 56 on site staff a total of 268.

Appropriate Assessment
Natural England advise the authority that there will be likely significant effects on the following designated sites:

Dorset Heathlands SPA
Dorset Heathlands Ramsar
Dorset Heaths (Purbeck and Wareham) and Studland Dunes (SAC)
Dorset Heaths SAC
Poole Harbour SPA
Poole Harbour Ramsar

In the light of the recent ECJ ruling (People Over Wind & Sweetman v Coillte Teoranta (Case C-323/17)) which concluded that the avoidance/mitigation, e.g. as set out in the Dorset Heathlands Planning Framework (2015 – 2020) SPD, cannot be taken into consideration when considering the Likely Significant Effects of proposals on European wildlife sites (and Ramsar sites as a matter of Government policy). Natural England advise your authority to undertake an Appropriate Assessment of the application as is required under Reg 63. At this time however Natural England advise the authority that the *lack of information* alone would be sufficient to determine the application in accordance with the regulations.

Biodiversity Mitigation Plan
The applicant has submitted a BMEP, the authority should ensure that this is up to date and that the NET has issues a certificate prior to any approval. Natural England note that a number of measures proposed fall in the area currently leased by the National Trust which runs out at the end of 2020, these cannot be secured at this time.

I trust this advice will assist you and the authority in considering the application further.

Yours sincerely

Nick Squirrell
Conservation and Planning Lead Advisor
Dorset and Hampshire Team
Dorset, Hampshire and Isle of Wight Area Team
Natural England
Mob: 07766 133697
Email nick.squirrell@naturalengland.org.uk

Annexe 1
Consideration of capacity and occupancy across the submitted documents

The documents enclosed have a number of inconsistencies in considering current and proposed capacity. Natural England have reviewed the evidence and conclude the following:

- Current staff numbers of between 57 and 65 are unlikely to have any significant effect on the nearby sites as the staff are working. There is no clear evidence that residential staff access the designated sites outside working hours. Residential staff numbers are up to 57 and are discounted.
- The current hotel has up to 273 guests with an occupancy of 2.6 per room.
- The proposed development will have between 324 and 342 visitors on site
- This is an increase of between 51 and 69 visitors
- The economic impact report gives an increase of between 87 and 95 staff working at the site
- Currently there are 79 vehicle spaces this will increase to 87 and 36 cycle spaces
- The applicant applies an occupancy of 60% over a year, this must equally apply to the current use so there remains an increase in visitors as well as different use patterns expected.

Revised DAS 13 Sept 2019
This gives two figures on p38, 162 beds and 324 bed spaces. The capacity of the apartments is perhaps 278 bed spaces. But the hotel occupancy (2) is not consistent with the current hotel which is 2.6. If this is used then total occupancy is 342. The report lists 79 current car park spaces to rise to 87 with additional 36 cycle spaces.

App 5.2 Economic Impact
- 152 jobs in the operation of the hotel up from the current 65 (there are 57 staff rooms currently and 106 hotel rooms)
- At 1.31 the report gives a figure of 273 guests at full occupancy in the current hotel, occupancy in 106 rooms of 2.6 per room.
- After development the complex will have 30 hotel rooms and 63 apartments with a capacity of 328 visitors
- The capacity of the current hotel and staff is 273 plus 57 staff rooms = 269

Framework travel Plan Sept 19 2019
- It will establish 67 FTE jobs with up to 150 employees
- Onsite staff vary from 2 to 54
- No employees will be able to use the car park facilities
- 36 cycle spaces will be provided on site
- Highest demand on a shuttle bus is 22

Whilst these figures are apparently comparable to the current staffing levels there are some areas of concern such as the lack of capacity on site and in the provided bus both in the case of bus failure and also in the case of inclement weather leading to modal shift.

Appendix 5.1 Capacity Note - August 2019
- There is no definition of what the acronyms relating to apartment actually mean in the document. It is assumed that eg 2B4P = 2 beds and 4 persons?
- The documentation provided adds in a new figure of staff on site of 66 at full capacity but only 59 at peak season?
- Hotel room occupancy of 2 is not accepted based on the evidence provided for the current hotel
- The tables do not take into account the 67 FTE staff to be employed in the people numbers on site (FTP)
- If it is assumed that there are 328 visitors on site and a further 67 FTE this gives a total of 395 people on site compared to 273 visitors and 57 staff at total of 330.

As explained previously the actual number of visitors as opposed to staff does show a significant increase in the region of 51 to 69.

Annexe 1
Initial comments on survey methodology

1. No confirmation of methodology from Natural England, resulting in numerous flaws.
2. Survey should have had a professional surveyor asking all residents consistently for a period of time, not just handed out and so self selecting.
3. Need to carefully brief staff to elicit all questions.. some not answered
4. Forms provided to guests at check in “during July and September 2018”, August included, dates for visits would have been essential.
5. Relative rate of response to the number of visitors in the hotel
6. Better to elicit survey face to face on check out
7. Bespoke questions should have been agreed eg have you visited any of the following? Dunes, Agglestone, heathland, Littlesea, Poole Harbour foreshore with a walking map.
8. Locations used by dog walkers as survey not specific eg grassland surrounding hotel?
9. Cycling – thin thick tyres?
10. Use of map to show used locations? Some unclear, eg front and side of hotel east and south do people know what this means, a map would have been best. Also places named may be confusing to residents, Stud and God NNR includes the dunes… so total these.
11. By naming sites you assume that people know where they are going… confirm on map
12. What about picking up dog faeces?
13. No post codes to ascertain distribution and distances travelled?
14. Seven people did not understand Q17-22 should have been fully excluded shows the approaches weakness by not having a person to take the responses down.
15. Refusals were not recorded or the total number handed out or how this was communicated to respondents, was the form handed out to all or just those with dogs – a lot of chance for error, how were hotel staff asked to introduce the form and were all staff briefed ?
16. Hotel occupancy? Number of sheets handed out number of days represented – all unclear
17. No indication if these are regular visitors or first timers…
18. 156 responses, can one assume proportions for users/activities numbers of visits?
19. Lack of professional experience in the Ecological Consultancy is clear from the experience cited

ANNEX 4

Black Box Planning Response 11th May 2020

11th May 2020
BR/ref

Andrew Collins
Dorset Council (Purbeck)
Planning Services
Westport House
Worget Road
Wareham
Dorset BH20 4PP

Ben Read BSc (Hons) MA MRTPI
E: ben.read@blackboxplanning.co.uk
T: 07748594131

9 Marsh Street
Bristol
BS1 4AA
BlackBoxPlanning.co.uk

Dear Andrew,

Application Reference: 6/2018/0566 KNOLL HOUSE HOTEL, FERRY ROAD, STUDLAND

Further to our recent discussion regarding the letter received from Natural England (NE), dated 17th February 2020, I write to provide further clarification and to respond directly to some of the points raised.

This letter should also be read alongside the applicant's response in respect of the comments raised by the Dorset AONB Partnership, dated 18th October 2019, particularly in respect of whether the proposal constitutes major development in the AONB. As discussed, it is the applicant's view that it does not but, even if a contrary view is reached by the LPA, that there are exceptional circumstances in this case which point to the grant of planning permission having regard to the provisions of paragraph 172 of the National Planning Policy Framework (NPPF).

We wish to highlight that the applicant has always sought to engage with the LPA and other key stakeholders during the course of preparing and assessing this planning application. I am very conscious of the time which has now elapsed between the Local Planning Authority (LPA) consulting NE in September 2019 and their response received in February 2020, some six months later. Given this protracted timeframe there is now a desire, understandably, to progress matters in an expedient and productive manner towards resolution.

The key concerns raised by NE are underpinned by assumptions about the proposed occupancy of the resort. As such, I have firstly addressed the comments at Annexe 1 of the NE letter in this regard. The remainder of the points set out below follow the order in which they appear within the NE letter.

1. Annexe 1 - Consideration of capacity and occupancy across the submitted documents

NE comment: *The documents enclosed have a number of inconsistencies in considering current and proposed capacity. Natural England have reviewed the evidence and conclude the following:*

• Current staff numbers of between 57 and 65 are unlikely to have any significant effect on the nearby sites as the staff are working. There is no clear evidence that residential staff access the designated sites outside working hours. Residential staff numbers are up to 57 and are discounted.
• The current hotel has up to 273 guests with an occupancy of 2.6 per room.
• The proposed development will have between 324 and 342 visitors on site
• This is an increase of between 51 and 69 visitors

- *The economic impact report gives an increase of between 87 and 95 staff working at the site*
- *Currently there are 79 vehicle spaces this will increase to 87 and 36 cycle spaces*
- *The applicant applies an occupancy of 60% over a year, this must equally apply to the current use so there remains an increase in visitors as well as different use patterns expected.*

Applicant Response: Under the existing hotel operation there are a significant number of temporary staff who reside on the site. Typically, these tend to be young, seasonal workers, many who come from overseas. They do not have access to the leisure facilities at the hotel and we have been informed by hotel management that the staff do make use of the local sites in their recreation time. As stated, they are often from overseas and access the local area in the same way as a tourist may. They also have only basic accommodation with little ancillary space other than bedrooms. The local environs provide the only free resource for exercise and it is, generally, well utilised by the cohorts. Staff work irregular shift patterns, which often relate to meal times, for example, early start and early finish (breakfast and lunch) or late start and late finish (lunch to dinner and beyond), which gives them opportunity for local exploration and recreation. In addition, they do not have personal cars on site and therefore travel is restricted to public transport, this also has an impact on localising their leisure and recreation options.

Our view is that changing the model of the hotel from one where staff live on site to one where staff are employed on a more permanent basis from the local area should be considered a benefit in terms of reducing risk of recreational impacts on designated sites. It seems likely that if we were seeking to increase the numbers of staff living on site (rather than decrease them) then NE would want to include these people in any residential impact assessment rather than discount this element of impact altogether. We therefore consider their approach in this case to be at odds with their overall policy position.

Following redevelopment, staff will be recruited locally on a permanent basis and will therefore already be accounted for in the local community.

Revised DAS 13 Sept 2019

This gives two figures on p38, 162 beds and 324 bed spaces. The capacity of the apartments is perhaps 278 bed spaces. But the hotel occupancy (2) is not consistent with the current hotel which is 2.6. If this is used then total occupancy is 342. The report lists 79 current car park spaces to rise to 87 with additional 36 cycle spaces.

Applicant Response: The difference between the number of 'beds' and number of 'bed spaces' is because each bed has two bed spaces (i.e. a double bed). It is likely that not all beds will be occupied by two people and therefore the bed spaces figure is a maximum. For example, a visitor will have to book a room in the hotel with a double bed or an apartment with at least two bedrooms, which would result in under occupation. This approach was set out in the Capacity Note (August 2019) appended to the ES Addendum.

The occupancy figure of 2.6 people (on average) per room for the existing hotel is an actual figure taken from the inventory, which is made up of: 63no family rooms (30no with a capacity of two adults and two children and 33no with a capacity of 2 adults and 1 child), 11no standard doubles and 32no single rooms.

The ratio of 2 people per bedroom that has been applied to the proposed hotel because all of the rooms within the new hotel are proposed to have a maximum of 2 bed spaces (i.e. they are all double rooms)

The existing hotel is of a very different design and layout to that proposed and includes a mix of bedroom sizes including some family rooms that contain more than 2 bed spaces. The number of bed spaces in the existing hotel has been counted up and there is an average number of 2.6 bed spaces available per room.

We are unclear why NE are suggesting that we apply a ratio of 2.6 bed spaces per room to the proposed hotel which would only have a maximum of 2 bed spaces per room. This would be inaccurate. Comparing the existing and proposed hotels is not 'like for like' and whilst this has been set out in submissions previously, NE do not provide a rationale or reasoning for their position.

Notwithstanding the above, the Capacity Note was provided to compare existing and proposed people on site using a methodology which adopts a realistic approach to under occupancy (derived in conjunction with the Hotel Management based on real world experience). This is because the proposal is based completely on two occupants per room and, inevitably, not all rooms will be fully occupied (for example where families are an uneven number and for single visitors). However, Table 6 sets out a comparison between the two with no adjustment and therefore provides a worst-case scenario where every bed space is occupied.

NE have failed to have any appreciation for the difference between the management of the hotel currently and the proposed resort's model of accommodation. The existing hotel, given its standard of accommodation, format and quality, is operated as a high-density budget destination (this is essentially a model of filling the hotel with as many people as possible) at relatively low rates. However, the proposal is for a high-quality luxury destination where space is a premium and rates are higher. Therefore, whilst there is more space and more facilities relative to the number of people on site, the guests will pay more for those services in a high-quality luxury five-star environment.

Appendix 5.2 Economic Impact

- *152 jobs in the operation of the hotel up from the current 65 (there are 57 staff rooms currently and 106 hotel rooms)*
- *At 1.31 the report gives a figure of 273 guests at full occupancy in the current hotel, occupancy in 106 rooms of 2.6 per room.*
- *After development the complex will have 30 hotel rooms and 63 apartments with a capacity of 328 visitors*
- *The capacity of the current hotel and staff is 273 plus 57 staff rooms = 269*

Applicant Response: It is not clear what inconsistency is being identified with these figures. The stated figure of 273 for full occupancy of the existing hotel (based on 2.6 bed spaces per room) is consistent with what is stated within the ES Addendum and other documents.

Whilst it is not clear, the maths in the final bullet point also appears to be incorrect. If NE are assuming only a single employee per room (some of the rooms are twin or double), the calculation set out would be 330 people on site and not 269 as set out.

To clarify, the Economic Impact report (Appendix 5.2 of the ES Addendum) was prepared in March 2019. There were some further revisions made to the detailed design in response to the consultees comments that took place leading up to the revised application submission in September 2019. We took the view that these revisions did not have a material effect on the overall findings of the Economic Impact report and as such it was not updated for the September 2019 submission. In response to consultee requests for a further level of detail on occupancy rates, a stand-alone document entitled 'Knoll House Hotel – Assessment of Occupancy Rates' (Appendix 5.1 of ES

Addendum) was submitted in September 2019. This was prepared following further dialogue with the resort management regarding current hotel arrangements compared with the proposed development. If there are any minor discrepancies between figures in various documents, such as existing staff numbers etc, it is this more detailed, more recent document which should be referred to. However, the documents are all broadly consistent when assessing the same accommodation mix (it has already been noted that the mix in the Economic Impact Report is slightly different, albeit not materially).

Framework travel Plan Sept 2019

- *It will establish 67 FTE jobs with up to 150 employees*
- *Onsite staff vary from 2 to 54*
- *No employees will be able to use the car park facilities*
- *36 cycle spaces will be provided on site*
- *Highest demand on a shuttle bus is 22*

Whilst these figures are apparently comparable to the current staffing levels there are some areas of concern such as the lack of capacity on site and in the provided bus both in the case of bus failure and also in the case of inclement weather leading to modal shift.

Applicant Response: Again, it is not clear what the consistency concerns are with these figures from these comments. The Economic Impact Report stated an estimated maximum of 152 jobs being generated and the Framework Travel Plan quotes 150 jobs. Clearly these are very similar forecast figures.

As detailed within the application, the way in which the existing hotel has been operating is not typical within the hotel industry in providing a large amount of residential accommodation on-site for staff, in a hostel style fashion. This is due to the seasonal nature of the historic trade, which is a correlation with the quality of accommodation and dining experiences but a lack of all weather facilities on site. It also directly relates to the budget for staffing and training (i.e predominantly temporary contract staff with limited training). It is not expected that a new hotel should provide dedicated bedroom capacity for staff. The new resort will offer a five-star luxury experience with a cohort of staff who are better trained and paid, and therefore able to afford and live off site. Given that hotels rarely operate at full capacity, in an emergency scenario, a staff member could utilise a spare room. This is an operational consideration which would be dealt with as an when such an issue arose. It seems unlikely that regular bus failures would occur and Framework Travel Plans are not typically expected to account for such scenarios. This has not been raised by the Highway Authority as a potential risk or concern.

Appendix 5.1 Capacity Note - August 2019

- *There is no definition of what the acronyms relating to apartment actually mean in the document. It is assumed that eg. 2B4P = 2 beds and 4 persons?*

Applicant Response: Yes, this is correct.

- *The documentation provided adds in a new figure of staff on site of 66 at full capacity but only 59 at peak season?*

Applicant Response: The Capacity Report (Appendix 5.1) provides a more in-depth analysis of the likely staffing levels at different points of the year, based on dialogue with the Hotel Management and actual occupancy figures. As stated on p3 of this report, a hotel or resort is unlikely to operate at 100%

full capacity even during peak periods. This is reflected in the predicted staff numbers required during the different seasons.

• *Hotel room occupancy of 2 is not accepted based on the evidence provided for the current hotel*

Applicant Response: As above, the design of the existing hotel and the proposed hotel are different and offer different numbers of bed spaces per room. Therefore, the ratio used in each case is different. This is the more accurate approach.

In addition, as set out above, the commercial approach and management of the existing hotel and the proposed redeveloped resort are different. The existing hotel is a high density relatively low-cost operation. Whereas the proposal will be operated as a high-quality luxury resort (five star) where a premium is paid for space and level of facilities. It should be noted that such a premium is only possible with the extent of services and facilities proposed. A reduction in high quality leisure facilities and dining options would have an implication for the delivery of a high-end product. There is a lack of appreciation of this in NE's response, which may explain some of the comments raised. It is not a like for like redevelopment (although in market position terms the Knoll House Hotel of its hey day did occupy a similar position within the then market, but the market has now moved on as social trends and expectations have evolved).

• *The tables do not take into account the 67 FTE staff to be employed in the people numbers on site (FTP)*
• *If it is assumed that there are 328 visitors on site and a further 67 FTE this gives a total of 395 people on site compared to 273 visitors and 57 staff at total of 330.*
•*As explained previously the actual number of visitors as opposed to staff does show a significant increase in the region of 51 to 69.*

Applicant Response: The purpose of Tables 5 and 6 in the Capacity Report (Appendix 5.1 of the ES Addendum) is to provide a forecast of how many people are likely to be residing on the site at any one time and with the potential to access designated sites for recreational purposes. The aim is to provide a baseline of figures with which to underpin the recreational impact assessment.

In the existing scenario, staff are living on site and therefore able to access designated sites within their non-work time (they have limited opportunity for alternative recreational activity, without travel on public transport). However, in the proposed scenario, staff will not be living on site and therefore will not be in a position to access designated sites from the resort (they will principally be reliant on the staff bus to travel to and from work and will live within the wider local area so will already be accounted for). Future staff numbers for the redeveloped resort have therefore not been included in the number of people residing on site as they won't be living there. It is not fully understood why NE would consider that staff who do not live on site should be included within a net residential increase figure for the purposes of assessing recreational impact. If these people are already living locally, they would not be contributing a net increase to recreational impact from working at the resort. If they choose to visit sites on the weekends, they would already part of the existing baseline impact.

We would welcome examples from yourself within the Council's area of other methodologies where non-residential employment numbers have been included in similar assessments in this way.

The tables show that when comparing the existing occupancy rates (including the staff residential on site) with the proposed occupancy (guests only), there will be a decrease throughout the year in the

number of people residing on site. Given this decrease, our ecologists do not consider that there will be a net additional adverse impact on the designated sites.

If the existing residential staff numbers were to be excluded completely as NE suggest; the additional guest numbers range from an estimated 27 in the low reason to 55 at full capacity. In the context of all of the additional ecological enhancement proposed to be embedded within the redeveloped resort, it is still considered that the increased recreational impacts at these levels would be negligible.

Kingfisher's intention is that with all of the ecological enhancements proposed (summarised on the plan at Appendix 4.1) put in place, there will be net benefits through an overall improved understanding of the ecology of the area both for staff and guests.

2. Occupancy Type in the application

NE comment:
Natural England advise that the proposed change from a Hotel use to a mixture of hotel and C3 uses is contrary to Local Plan policy in the Local Plan as well as the Dorset Heathlands Planning Framework 2015 - 2020 SPD advice within 400m of specially protected heathland sites.

Information provided in the CIL liability form dated 11/10/2018 and email correspondence dated 3/12/2018 confirm the applicant and authorities view that the development constitutes 8023 sqm of market housing/additional dwellings. It is now Natural England's understanding that the proposal represents additional dwellings in use class C3 compared to a current hotel which falls into use class C1. The additional dwellings total some 63 residential units. This application is therefore contrary to the adopted Local Plan policy DH as well as the guidance set out in the Dorset Heathlands Planning Framework 2015 - 2020 SPD.

The SPD does not set out a need for generic mitigation measures for new Hotels, individual applications are considered on a case by case basis with particular scrutiny focussed on any proposals within 400m. Beyond 400m hotels are not generally required to secure mitigation relating to the Dorset Heathlands because the SPD advice focusses on residential developments or tourist developments which are self-catered. This application therefore falls into the type involving self-catered facilities where impacts are directly equivalent in effects generated to C3 development.

Applicant Response: The first part of this comment implies that the NE thinks that the applicant is seeking a permission for primary residence housing under C3. However, the second part of the comment describes the application involving self-catering facilities. Therefore, the objection that is being made here is rather unclear.

As you will be aware, self-catering holiday accommodation is typically considered to fall within planning use class C3 with restrictive conditions and covenants subsequently applied. This is a long-standing accepted planning approach for tourist accommodation supported by case law. The applicant has made it abundantly clear within the ES Addendum that the units are not intended to be used as primary residence market housing. In addition, the application submission also makes it clear that the C3 accommodation will remain managed by Kingfisher as part of the resort. Whilst residents will have some self-catering facilities, they will be encouraged to use the two forms of dining (and other casual dining options) within the proposal. The provision of a 'self-catering' element is to provide flexibility to families. However, it is not envisaged that guests staying in a high-quality resort will want to cook for themselves on anything other than a very infrequent basis. However, they may well want to take advantage of a private dining experience in their own villa or apartment. These assumptions are based

upon the applicant's experiences in similar resorts they have developed and operated in the UK and Europe.

Paragraphs 2.10-2.12 (p12) of the ES Addendum specifically addresses this point as this comment was previously raised on the first round of consultee comments. It states as follows:

> *2.10 The villas and apartments will be rented as holiday accommodation and will not be able to be used as market housing for principal residence. The apartments and villas will remain under the control and operation of Kingfisher. The cost of renting out the self-catering apartments per night/week and the nature of the accommodation means that it is considered highly unlikely that guests would seek to retain the accommodation on a long-term basis in the form of a second home.*
>
> *2.11 A condition will be placed on the planning permission by the Local Planning Authority to prevent the accommodation units from being used as a primary residence in perpetuity (i.e. permanently). This is a common planning approach for self-catering holiday accommodation.*
> *2.12 The villas and apartments will have kitchens or kitchenettes. However, these units will function as part of the resort. Guests will 'check-in' and the use of the resort facilities will be promoted, including the catering options. The villas and apartments will not function in the same way as a standalone self-catering cottage or house, they will form part of a holiday resort.*

We note that the same approach was proposed as part of the "Silverlake" quarry redevelopment (ref. 1/D/13/001112) within Dorset Council area. However, in this case concerns were not raised by NE in relation to the C3 use class. It is a recognised approach to delivering resorts with a range of accommodation types.

The Officer's report for this application stated the following in relation to this matter (paragraph 14.1) (my underlining):

> *This application is explicitly being proposed as holiday accommodation; dwellings to be occupied for holiday purposes only and not as a person's sole, or main place of residence. <u>This is a legitimate and well-established distinction in planning policy, and both Circular 11/95 - Use of conditions in planning permission - and the DCLG's Good Practice Guide on Planning for Tourism (2006) make clear that occupancy restrictions can be enforced through the use of conditions.</u> Therefore, although it is understandable to be anxious about the potential for holiday accommodation to insidiously transmute into permanent accommodation that would not be a sound basis for refusing planning permission. If we are content that holiday accommodation is acceptable in all other respects then we are really obliged to rely on occupancy restrictions to enforce the distinction.*

In relation to the CIL forms, as you may be aware there is not a box on the standard form that specifies 'holiday accommodation'. By offering a CIL contribution the applicant was simply following the Council's own advice. As per the Silverlake development we were advised by the Council that proposals for holiday homes normally attract a developer contribution equal to that required under C3 residential use class. It is misleading for NE to imply that by filling in a generic CIL form somehow this constitutes a backdoor way of seeking permission for market housing when this is clearly not the case.

3. Parking

NE comment:
The application also leads to an increase in both cycle storage and car parking on site. This raises concerns about increased recreational pressure both from off road cycling and also from visitors to other facilities combining access to the heathland etc with dogs. Natural England advise there should not be a net increase in car parking from the current level of 79.

Applicant Response: The number of parking spaces is proposed to increase from 79 to 87 spaces. It is considered this increase is *de minimis* and unlikely to give rise to significant additional recreational impacts as a result. The Highway Authority have already approved the Transport Statement, describing it as 'robust'. Nevertheless, the car parking spaces can be reduced down to 79 if that was required by the LPA. Alternatively, it can also be reduced to 83 as originally proposed with no objection from the Highway Authority.

The cycle storage provision is to bring the resort up to modern standard in promoting sustainable means of transport, for example for staff to cycle to work (amongst other sustainable travel choces, such as the staff bus), in line with Local Plan policy. In their response, the Highway Authority have described the proposed Travel Plan as 'commendable'. The provision is a response to transport policy, rather than an indication of recreational cycle storage. It is likely that the resort will offer some cycle hire, as they do now, but this is not a matter which can be controlled by planning policy.

Notwithstanding the above, the number of people residing on site remains the principal consideration in assessing impacts on the designated sites. There is no control over how existing people access the site and, therefore, if there is a net reduction in people residing on site with better access to sustainable transport modes this indicates opportunity to reduce impacts. In addition, the proposal was subject to an EIA Screening and Scoping exercise and there was no request from NE to consider air quality or eutrophication impacts and potential effects from vehicular movements. It is recognised that eutrophication is raised by NE in the context of drainage and this is considered further below.

4. Cats

NE comment:
The applicant has proposed a covenant to restrict the keeping of cats (Proposed Ecological Enhancement Plan, App 4.1), this has been reviewed during Appeal Hearings and it does not provide sufficient certainty. There are no monitoring or enforcement mechanisms which would allow the authority to take action should an infraction of a convent occur. This is therefore an ineffective mitigation mechanism and must be discounted

Applicant Response: This comment is noted about enforceability however it seems perverse for this measure to be discouraged when clearly there are likely to be net biodiversity benefits from the applicant implementing it. The applicant still intends to include this within their ecological enhancement plan and can control this through site operations as is common practice for holiday resorts.

5. Woodland Walk

NE comment:
The applicant has proposed a woodland walk as a mitigation measure, the length of route provided and specification is not set out, however it is unlikely to deter access to the extensive countryside

Studland Heath and beach or Godlingston which has a direct path from the west side. This measure is considered to be ineffective in this location.

Applicant Response: It was anticipated that the details of an improved circular woodland walk would be included as part of a Woodland Management Plan to be secured via condition. However, if required, these details could be provided up front.

It is not understood exactly why this measure is considered by NE to be ineffective when similar types of measures have been encouraged in many other locations within the Council area and also when the full specification of the route is not available to comment on. Appendix A within the Dorset Heathlands SPD (2015-2020) provides a long list of locations where new and upgraded routes and circular walks have been proposed as mitigation measures.

It is contended that providing a guided woodland walking route, on the doorstep of the resort will provide an alternative route for walkers, particularly those with young families.

6. LVIA Dorset AONB

NE comment: *Given the previously unexpected appearance of the glass box feature Natural England seeks clarification that there will be no access onto the green roof of building D which is a flat roof? The impacts of seating, perimeter fencing, awnings etc may need to be considered. The landscape masterplan shows features present.*

Applicant Response: The glass roof feature has been removed from the proposals as stated within the revised submission. There is no intention of providing visitor access to the green roof. The intention of the green roof is to provide biodiversity and landscape benefits. It is unclear why this measure is not welcomed as a benefit in this context.

Refer to separate response letter regarding AONB comments.

7. Land Ownership Considerations

NE comment: *Natural England understand from the National Trust that land outside of the redline application area is leased to the applicant but that the lease terminates in September 2020.*

Applicant Response: Kingfisher Resorts are in the process of agreeing their lease extension beyond September 2020 and have a statutory right to renew it. It is incorrect and inappropriate of NE to imply the lease will not be renewed and that that should be a planning consideration.

The delivery of mitigation measures can be secured through planning conditions (potentially Grampian conditions where required) and legal agreement in the usual way. In the eventuality that the proposed measures could not be delivered than the development would not proceed.

8. Proposed Ecological Enhancement Plan (App 4.1)

NE comment: *The removal of non-native invasive species from the woodland is welcomed as is the creation of glades. Natural England advises that the area of SAC and SPA performs no function essential to the application and it should be relinquished to the National Trust who are the owner.*

The same general comments apply for the Ecological enhancements outside of the application site, these are unlikely to be within the control of the applicant after 2020 because the lease expires. Hence neither the woodland management of dog exercise/training area may be considered as secure measures.

Applicant Response: As above, the applicant has a statutory right to renew their lease and are in the process of doing so. Agreed mitigations can be secured via condition/legal agreement in the usual way. It is not clear from this comment whether the principle of a dog exercise area is welcomed or not by NE. Within Policy SE of the PLP1 areas where dogs can run freely off the lead are promoted as part of SANG mitigation.

9. Woodland Management Plan App 4.4

NE comment: *The general objectives for the two compartments are acceptable to Natural England however the area lies outside of the applicant's ownership. Natural England advise the authority that the preferred option for the woodland in Compartment 1 would be to establish a mixture of broadleaved woodland and heathland through the removal of non-native shrubby and tree species as well as gradual removal of pine trees which is in line with the owners intentions.*

If this matter is resolved a planning condition securing the production of a costed Woodland Management Plan covering 25 years should be required.

Applicant Response: As above, the applicants have a statutory right to renew their lease and are in the process of doing so. The applicants agree to the provision of a costed Woodland Management Plan via condition.

10. Planting Schedule Overview 4/9/2019

NE comment: *Natural England object to the proposed planting of EM6, chalk meadow mix. This part of Dorset is dominated by acidic low nutrient conditions, any habitats created should tie in with the local biodiversity rather than introduce a typical plant mixes. It should be noted that the soil type present will need substantial modification to achieve such species in the long term. In addition, Natural England object to the use of Amelanchier lamarckii in the formal planting areas, this species is known to be locally invasive into heathland soils where it is difficult to eradicate.*

Applicant Response: These matters can be easily resolved through adjustment of the proposed planting schedule which can either be updated now or submitted via condition as required.

11. Surface Water - Knoll House Hotel Drainage Strategy (260799-KHH-REP-DR-0002) 14/11/2019

NE comment: *The current drainage strategy shows attenuation of flows to 2L/sec and 21 L/sec (1:30 yr) straight into a pond which is within the designated sites. Whilst it states that the flows have been calibrated for 1:100 year + 40% for Climate Change there are no details of what a 1:100 year event flow might be or where excess water might go.*

Applicant Response: Section 5.2 of the Drainage Strategy summarises the details of a 1:100 yr event flow. We are proposing to discharge off site at greenfield runoff rates for a 1 in 100-year event including 40% for climate change. This meets current legislation and if this surcharges it will be retained in low points on the site and not flow off site (as detailed within Section 5.4). The Lead Local Flood Authority have expressed their satisfaction with these rates and do not offer an objection to the proposals.

NE comment: *Natural England advise that simply discharging 21l/sec down a piped gradient will cause significant effects such as silt release/scour etc if there are no control structures at the discharge point. There is no silt or oil interception, no maintenance regime proposed for all elements and no consideration of the potential adverse effects of enriched water with a higher pH on the acidic communities in the designated sites. In the absence of such details it is clear that there could be accidental pollution which is not capable of being managed or controlled but simply runs off the applicant's site into the designated sites.*

Applicant Response: Detailed design can mitigate the flows at the outfall edge but discharging into a pond at greenfield runoff rates is unlikely to cause any scour when designed correctly. Oil interception, siltation and water pollution are all dealt with within the SuDs on site and these aspects will all be dealt with at the detailed design stage in the usual way (refer to Section 5.5 of Drainage Strategy).

In practice the discharge will not have any greater impact than the existing site. However, the drainage system and associated attenuation will be designed to modern standards having greater control over discharge rates, delivering betterment.

NE comment: *It is noted that the report states that "Resilience and redundancy of this system should be considered in greater detail at the next stage in consultation with Wessex Water." Natural England advise the authority that on the basis of the available information and the noted pollution events (over 36 per year on occasion) that this matter needs to be resolved now so that the authority may take a view. The pumping station lies between the designated sites and land in the ownership of the National Trust so options for a larger facility are very limited.*

Applicant Response: Wessex water have already confirmed they have capacity to accommodate the proposed development. NE would need to discuss with Wessex Water directly if they have concerns with the current operation of this pumping station as this is a third-party asset and not within the applicant's control.

NE comment: *The layout plan 0163_451 shows the use of permeable paving to encourage infiltration. This is welcome however Natural England advise that this measure for avoiding polluted surface water run off does need a maintenance regime for the duration of the project, eg in perpetuity or 80 years.*

Applicant Response: The proposed maintenance regime is detailed in section 7 of the Drainage Strategy. Full maintenance and management details for the surface water sustainable drainage scheme would be submitted via condition in the usual way as per the Lead Local Flood Authority's response.

12. <u>Flood Risk assessment 14/11/2019 4.2.4</u>

NE comment: *Natural England is aware of the overflow of sewage from the pumping station to the west directly into the designated sites. With an increase in occupancy from the development it is difficult to see how current discharges will not increase due to increased volumes.*

Applicant Response: Wessex water have already confirmed that they have capacity to accommodate the proposed development. NE would need to discuss with Wessex Water directly if they have concerns with the current operation of this pumping station as this is a third-party asset and not within the applicant's control.

NE comment: *It is proposed to discharge surface water directly into a watercourse which flows through and into designated sites, this is not acceptable as there will be enrichment and pollutants from the surface water.*

The plan SK-FW-0001 shows all foul water drainage to the nearby Wadmore Lane Pump House. This regularly overflows into the designated sites and watercourse. Natural England has advised the authority and applicant that a remediation/avoidance plan should be drawn up. At this time there is no information about additional expected flow rates in-relation to the capacity at the station.

Natural England advise that issues around surface and foul water management may be addressed but require a more proactive approach with the National Trust and Wessex Water. At this time Natural England conclude that there is a likely significant effect on the designated sites which is not shown to be avoided or mitigated.

Applicant Response: As set out above, Wessex water have confirmed that they have capacity for the proposed development.

With regard to the management and maintenance of the drainage system proposed, this is set out at Section 7 of the Drainage Strategy.

The Drainage Strategy also sets out measures for pollutant control from surface water runoff through the SuDS strategy. This will includes provision of a 'treatment train' to aid removal of any pollutants (such as from possible hydrocarbons from roads). In addition, the system will be designed to enable testing of discharge quality. This is not controlled currently and no measures are in place to treat runoff. The proposed strategy will offer betterment in terms of both discharge rates and water quality.

13. Appropriate Assessment

NE comment: *Natural England advise your authority to undertake an Appropriate Assessment of the application as is required under Reg 63. At this time however Natural England advise the authority that the lack of information alone would be sufficient to determine the application in accordance with the regulations.*

Applicant Response: Whilst acknowledging this is a well documented ecological matter in this area, our ecologists have advised that given the proposals involve a similar or slightly decreased number of people residing on site at any one time, any net impacts on designated sites would be *negligible.* As set out within Focus Ecology's updated HRA Screening Opinion (September 2019), they consider it unlikely that the proposals will cause any significant effects on protected sites and as such an Appropriate Assessment is not required.

However, as discussed, if the Council consider that an Appropriate Assessment is required we would be willing to provide a factual evidence report to inform this process and will continue to engage positively with all parties to develop an appropriate package of mitigations. In advance of this we suggest that common ground is reached with the Council in terms of comparisons between existing and proposed visitor numbers to ensure an agreed baseline is used.

It would have been helpful if NE could have listed the specific items of additional information they require as part of this comment.

14. Biodiversity Mitigation Plan

NE comment:
The applicant has submitted a BMEP, the authority should ensure that this is up to date and that the NET has issued a certificate prior to any approval. Natural England note that a number of measures proposed fall in the area currently leased by the National Trust which runs out at the end of 2020, these cannot be secured at this time.

Applicant Response: The revised BMEP was submitted to the Natural Environment Team as part of the revised application submission. As detailed above, the lease is in the process of being renewed therefore it should not be assumed that the measures cannot be secured.

It also considered important that the LPA recognise that the proposal affords the LPA and Natural England a major opportunity to bring about significant ecological benefits through secure management of the site and wider landscape as well as a wealth of integrated and targeted biodiversity benefits associated with redevelopment. These ecological gains align strongly with the requirements of the current NPPF (including paragraphs 170 and 175) as well as the ambition of the emerging Environment Bill 2020. There are no guarantees that these benefits would be realised other than through the development management process.

In order to move forward, in response to this letter it is respectfully requested that the planning authority now provide the applicant with the LPA's view on these matters.

We look forward to discussing further with you.

Yours sincerely

Ben Read MRTPI
Director

ANNEX 5

Consultation Response from Natural England (dated 22nd January 2021)

Date: 22 January 2021
Our ref: 265295
Your ref: 6/2018/0566

Click here to enter text.

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Mr Collins

Planning consultation: Redevelopment of existing hotel to provide new tourist accommodation including 30 bedroom hotel, apartments & villa accommodation, associated leisure & dining facilities
Location: Knoll House Hotel, Ferry Road, Studland, Swanage, BH19 3AH

Thank you for your consultation on the additional comments provided by the applicant dated 11 May 2020.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Summary

- Natural England cannot conclude that there will not be an adverse effect on the integrity of the designated heathland sites, SPA, SAC and Ramsar which surround the application site arising because of increased recreational related pressures which may not be readily avoided or mitigated because of the proximity of the designated sites.
- Natural England advises that the adverse effects from predominantly C3 apartments with self-catering facilities will be greater per group of visitors than for the current Hotel use, the applicant confirms that the level of visitor occupancy will be higher throughout the year.
- The applicant has not confirmed how they will provide mitigation for increased nutrients entering Poole Harbour SPA, Ramsar, information relating to the additional nutrients arising should be supplied.
- The applicant will need to confirm how the proposal will avoid harm to Poole Harbour SPA Ramsar in the light of the Poole Harbour Recreation SPD.
- The applicants evidence concerning the proposal is becoming clearer, there are increases in basic levels of tourist occupancy as well as capacity for other visitors who will use enhanced facilities. These basic figures need to be confirmed with the authority and applicant to inform the authority about levels of mitigation related to occupancy levels which may be needed .
- The veracity of the Visitor Survey evidence is called into question, both in the professional competence of those carrying it out and in the methodology used.
- The C3 use proposed is contrary to Local Plan Policy
- Both Natural England and the AONB Team advise there are significant adverse effects on the Dorset AONB in both the short and long term, the application may be considered by the Council as a major development which can affect how the application is assessed under the NPPF.

Natural Englands advice dated 17 February was intended to assist the Council in clarification of the relevant facts around the current use and the levels of use arising from the proposed development in a way that would then enable a proper consideration with agreed figures. As set out the EIA gives a quite wide variation of key figures in different parts and so the Council and Natural England have little certainty on which to base our considerations on.

These comments follow the structure of the applicants response.

Capacity
Natural Englands advice is that the applicant has presented no reliable information on how the variable number of staff might access the nearby countryside. In the absence of information, which had been flagged up with the applicant at an early stage, Natural England has no basis on which to consider the level of any effects which may arise from young seasonal workers at the hotel. It is perhaps most likely that access outside of the hotel would be focussed on the beach at Studland but this is only a supposition.

I note the proposal to employ local people on a permanent basis which *may* offer improved prospects for education about the sensitivities of the surrounding countryside.

Revised DAS 13 Sept 2019
The clarification on the derivation of the 2.6 occupancy figure for the hotel is helpful and noted and clarification that the proposed hotel rooms will only be doubles with no provision for children. The occupancy might be considered in a number of ways as is evident from the information provided. Natural England will seek advice from the Council about how this may be secured in operation.

The applicant considers that Natural England have not appreciated the difference in management of the proposed accommodation, however there is little in the commentary to provide any *evidence* that the adverse effects arising from the new proposal would be in any way different. In fact it could be considered that the new developments residents have higher aspirations concerning recreational use of the high quality surrounding landscapes. I have no doubt that it is correct for the Council to consider that the managing company will wish to see as many of the hotel rooms and apartments occupied for as much of the year as is possible and that they will make every effort to attract people from nearby to use the facilities provided on site.

Appendix 5.2 Economic Impact
Reference to this section of the ES is to confirm the variable information relating to the current and proposed level of occupancy across the evidence submitted.
"*Whilst it is not clear, the maths in the final bullet point also appears to be incorrect. If NE are assuming only a single employee per room (some of the rooms are twin or double), the calculation set out would be 330 people on site and not 269 as set out.*" Agreed the figure for total number of staying visitors on site should be 330.

Framework travel Plan Sept 2019
This is noted as again presenting a different range of figures and there is uncertainty as to which is most relevant to considering adverse effects compared to the current operation of the hotel with upto 273 staying visitors and perhaps 57 to 65/66 staff on site the current submitted figures for the application range from 37 to a range of 2 to 54 or I suggest the most reliable figure would be 67 from the FTE. It does not seem as if the way the hotel is currently using seasonal staff at present would be comparable to up to 67 FTE. Natural England is attempting to establish the likely level of people at the site currently and with the application and if this can be supported in any realistic way, for example by the available car parking/cycle capacity?

Appendix 5.1 Capacity Note - August 2019 – thank you for the clarification about the short hand. The intention in the comments is to try to first understand how the proposal contrasts with the current situation. Because the concerns are focussed on recreational impacts it is important to first understand and agree the numbers then consider how best to assess the risks from the number of people likely to be on site.

Natural England note that the applicant confirms that there will be additional guest numbers:
“If the existing residential staff numbers were to be excluded completely as NE suggest; the additional guest numbers range from an estimated 27 in the low reason to 55 at full capacity. In the context of all of the additional ecological enhancement proposed to be embedded within the redeveloped resort, it is still considered that the increased recreational impacts at these levels would be negligible.”

2. Occupancy Type in the application
Natural England will await a view from the Council about the use class of the development and whether they are satisfied that proposed rental arrangements demonstrate that there is sufficient certainty that units will not be occupied in a manner similar to dwellings. The advice set out in the SPD is clear that there is a restriction on additional C3 units, including self catering holiday units within 400m of the designated sites. This is because visitors are likely to behave in ways much more similar to residents eg longer stays, family groups catering for recreational activities likely to result in adverse effects on the designated sites.

At the Silverlake case mentioned a comprehensive area of designed natural greenspace will be available to residents including in addition SANG available for use by existing local residents which is intended to offset any additional use of nearby heathlands.

The Council will note accordingly whether the observation about CIL is pertinent to the concerns about the use class of the application.

3. Parking
The concern here is that the application is demonstrably providing additional attractive facilities aimed at residents as well as visitors. The increased capacity available increases the risks of additional recreational impacts on adjoining designated sites as visitors can then combine a visit with other harmful recreational activities effectively a net increase in pressure.

4. Cats
The issue here is that with the new C3 use proposed in the apartments and villas the risk of visitors bringing cats is increased. I am simply pointing out that this method of mitigation has been considered elsewhere by competent authorities and found to be uncertain. As such the authority is advised to place no weight on the proposal.

5. Woodland Walk
The reason why this measure is considered ineffective is set out. Elsewhere provision of natural greenspace adjacent to proposals is considered effective because it is more convenient for residents and the nearest designated sites will be at least over 400m away. Here the designated sites which are open access land are adjoining and there are existing routes onto them facilitating ready access to a high quality open landscape with destinations such as the Agglestone etc. The applicant is advised to set out the likely route of the proposed walk and its distance as it is a proposed mitigation measure which needs to be assessed.

6. LVIA
The removal of the glass feature is welcomed.

7. Land Ownership Considerations
The Council is advised to seek clarification from the land owner about this matter. At the least it constitutes very significant uncertainty in the applicants ability to deliver Habitats Regulations, biodiversity and landscape mitigation. In adition Natural England understand that the duration of any lease will only be for 25 years not the 80 years required to secure mitigation in perpetuity. Were the authority to rely on a 25 year period and the land owner subsequently took back the land, the development and its effects would be in existence, ongoing and unmitigated.

This applies equally to landscape mitigation proposed as well as mitigation for European designated sites.

8. Proposed Ecological Enhancement Plan (App 4.1)
The proposed dog exercise/training facility, if capable of being implemented and secured in perpetuity will provide a level of mitigation. It is also likely to attract other users at least in the short term and on balance and whilst there are some negative aspects Natural England advise that the measure *could* be a positive benefit. The comment that areas where dogs can run off lead freely within a SANG is mitigation is correct, however there is no area of SANG available apart from in Swanage, simply a small fenced of area which is not directly comparable.

9. Woodland Management Plan App 4.4: see comments above about security of tenure. It is my understanding that if taken back in hand the NT would be likely to favour removal of most pine trees in favour of native woodland which would impact significantly on the positive amelioration of the visual effects from the application. It may be helpful if the applicant can confirm the outline measures to be proposed in the Woodland Plan to avoid doubt.

10. Planting Schedule Overview 4/9/2019
The applicant should agree with the authority how this advice will be secured.

11. Surface Water - Knoll House Hotel Drainage Strategy (260799-KHH-REP-DR-0002) 14/11/2019
The concern, which the Lead Local Authority may not be aware of is on the potential effects of additional concentrated flows on the habitats in and around the pond as well as into Pipley Swamp which have not been surveyed/assessed as well as the discharge of surface water with a pollution load into the designated sites. This might include oils silts or water which is a higher pH due to the nature of car park surfacing etc.
The applicant needs to provide sufficient details at this point to allow the authority to conclude there will not be harm to the designated site features either in the short or longer term.

Foul water
Natural England advise that the proposal which has an increased occupancy as well as increased number of staff and visitors to the site due to improved facilities is likely to result in an increase in pollution events. Natural England advise that whilst this may be acceptable to the water company and Environment Agency the applicant has provided no evidence as to how this adverse effect is to be considered. Natural England advise that there is a possibility of securing a suitable mitigation measure – a wetland – on land owned by the National Trust adjacent to the pumping station. Such a wetland could provide mitigation for both surface and foul water discharges. The applicant is advised to scope out this option with the landowner and water company.

Natural England note the proposed maintenance regime which is welcomed. A planning condition should be required to secure the full details.

Mitigation
Such mitigation as set out at App 4.1 is scant and unlikely to be effective either in the short or long term. Whilst some of the mitigation such as the exercise area for dogs are appropriate if of limited benefit alone, others seeking to influence visitor behaviour are unlikely to be sufficiently certain in their effectiveness as to meet the test of certainty under the Regulations. The applicants have not considered the wide range of harmful effects which are likely and set out in the SPD. Proposals outside of the applicants red line area may not be relied upon, there is currently no secured agreement with the land owner and in any case agreement is only likely to be offered for 25 years.

Natural England remain unconvinced that the majority of the proposed mitigation will be effective and deliverable in perpetuity.

Landscape concerns in the Dorset AONB
The applicant states in their letter that they have provided a response to the concerns raised by the Dorset AONB Team. These comments do not appear to be on the application web pages. I have spoken recently to Mr Monro of the AONB Team recently concerning this matter and he confirmed that whilst there had been some minor adjustments to the design and materials, there were still

serious concerns about the overall massing and height of the application amongst other concerns. I also note that at this time the applicant, who lease surrounding land from the National Trust have yet to conclude any agreement about ongoing control of land which they might otherwise rely on for landscape mitigation.

I also note comments about the Councils own assessment as to whether this application is considered a major application or not in respect of the guidance in the NPPF. I am not aware if the Council have formed a view on this matter to date.

My advice is that there remains a significant distance between the applicants assessment of the visual impacts on the AONB and the expert advice of the AONB Team. Might I suggest that this sticking point might be clarified by the involvement of one of Natural England's Senior Landscape advisors. I have recently facilitated a meeting with an applicant in a similar position in order to give their advisor an opportunity, through a meeting, to present their findings to the Council, AONB and Natural England. This will enable a discussion with the expert advisors about the proposed mitigation measures, exploring additional onsite measures and potential offsite measures. Following that meeting Natural England the Council and AONB Team will review the proposal and update their advice in the light of the most up to date understanding of the proposal. If this is acceptable then Natural England could arrange to provide access to one of our national landscape advisors through our chargeable DAS facility.

14 BMP
The certainty with which mitigation agreed in the BMP can be delivered is a matter for the authority to consider. If the applicant has not secured a suitable level of control the authority may wish to review the BMP conclusion.

Natural England does not agree with the applicants claims that the application provides a the significant ecological benefits (App 4.1). Many of these fall in areas owned by the National Trust where it be expected that if in control of the land they would deliver similar benefits. At this time the BMP is delivering measures which are considered mitigation rather than benefits or net gain.

Natural England would welcome some clarity about the proposed lease, ownership etc mechanisms which the applicant is proposing to put in place for the 63 C3 units. It is not clear whether these will be long term arrangements (time share or ownership) or simply short term hire arrangements. This characterisation of the types of visits would assist in considering the nature and duration of risks to the designated sites.

Please note that if your authority is minded to grant planning permission contrary to the advice in this letter, you are required under Section 28I (6) of the Wildlife and Countryside Act 1981 (as amended) to notify Natural England of the permission, the terms on which it is proposed to grant it and how, if at all, your authority has taken account of Natural England's advice. You must also allow a further period of 21 days before the operation can commence.

Yours sincerely

Nick Squirrell
Conservation and Planning Lead Advisor
Dorset Team
Wessex Area Team
Natural England
Mob: 07766 133697
Email nick.squirrell@naturalengland.org.uk

ANNEX 6

Meeting with Natural England 6th April 2021

Ecology Solutions Limited
Farncombe House
Farncombe Estate
Broadway
Worcestershire
WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
www.ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND

MEETING NOTE – NATURAL ENGLAND (DISCRETIONARY ADVICE SERVICE)

Attendees:

John Stobart (Natural England) **JS**
Andrew Nicholson (Natural England) **AN**
Ben Read (Black Box Planning) **BR**
Jane Fuller (Black Box Planning) **JF**
Dominic Farmer (Ecology Solutions) **DF**
Robbie MacKenzie (Ecology Solutions) **RM**

Date of meeting: 6th April 2021 (via MS Teams)

Purpose of meeting

1. The purpose of the meeting was to discuss:

- The consultation response letter received from Natural England (NE) dated 22nd January 2021 in relation to Dorset Council (formerly Purbeck District) planning application ref **6/2018/0566**, redevelopment of Knoll House Hotel, Studland and to consider opportunities to resolve outstanding matters.

2. This note sets out NE's consultation response (as stated in the 22nd Jan letter) in bold and italics below, with the advisory meeting discussion set out below.

Extract from NE letter:

Summary:

- ***"Natural England cannot conclude that there will not be an adverse effect on the integrity of the designated heathland sites, SPA, SAC and Ramsar which surround the application site arising because of increased recreational related pressures which may not be readily avoided or mitigated because of the proximity of the designated sites.***

- ***Natural England advises that the adverse effects from predominantly C3***

apartments with self-catering facilities will be greater per group of visitors than for the current Hotel use, the applicant confirms that the level of visitor occupancy will be higher throughout the year.

- ***The applicant has not confirmed how they will provide mitigation for increased nutrients entering Poole Harbour SPA, Ramsar, information relating to the additional nutrients arising should be supplied.***

- ***The applicant will need to confirm how the proposal will avoid harm to Poole Harbour SPA Ramsar in the light of the Poole Harbour Recreation SPD.***

- ***The applicants evidence concerning the proposal is becoming clearer, there are increases in basic levels of tourist occupancy as well as capacity for other visitors who will use enhanced facilities. These basic figures need to be confirmed with the authority and applicant to inform the authority about levels of mitigation related to occupancy levels which may be needed.***

- ***The veracity of the Visitor Survey evidence is called into question, both in the professional competence of those carrying it out and in the methodology used.***

- ***The C3 use proposed is contrary to Local Plan Policy.***

- ***Both Natural England and the AONB Team advise there are significant adverse effects on the Dorset AONB in both the short and long term, the application may be considered by the Council as a major development which can affect how the application is assessed under the NPPF."***

3. **DF** introduced the meeting by raising the central issue of disagreement with NE with regard to hotel occupancy figures pre and post development and the need to agree common ground on occupancy numbers in order to move the determination of the application forward.

4. **JS** expressed concerns with regard to the policy principle of the conversion of a C2 use class hotel to a resort that in NE's view would include a net gain in C3 units and pointed to the Dorset Council SPD with reference to development 'not permitted' within 400m of heathland areas. **JS** stated that guests are likely to stay longer in C3 accommodation, compared with C2 and subsequently explore the local area more. While the provision of C3 accommodation is also considered more likely to lead to the provision of permanent open market apartments in the future if the hotel were to fail.

5. **BR** referred to the Operations Report that has recently been prepared and sets out that the C3 units will function as part of the resort, rather than independent units. This will be controlled by planning conditions which are commonplace. Further provisions to control this were considered later in the meeting (see below).

6. **DF** raised the fact that on-site staff should be included as part of the baseline occupancy numbers of the hotel and that this should be accounted for within

the C2 to C3 proposed use change. Overall, fewer people will be residing on site in total in the redeveloped resort scenario.

7. **JF** directed NE to the latest Purbeck Local Plan position (Proposed Main Modifications following examination – Dec 2020) that does not explicitly prevent the principle of a change of C2 use to C3 use within 400m of heathland. As a general principle, under Policy E8, net increases will not be permitted however the policy allows for exceptions in circumstances whereby it can be demonstrated that the type and occupier is restricted in perpetuity to those who would not have an adverse effect. The Local Plan policy states that (Inspector's proposed modification in bold):

   "residential development involving a net increase in dwellings or other uses such as tourist accommodation and equestrian-related development:

   - *will not be permitted within 400 metres of heathland, as shown on the policies map, unless, as an exception, the type and occupier of residential development* ***is restricted in perpetuity to those who*** *would not have an adverse effect upon the sites' integrity (e.g. nursing homes such as those limited to advanced dementia and physical nursing needs)* ***with the exception of Corfe Common****; and*

8. **BR** brought up the policy using the screen sharing facility. **AN** stated that he considered the term 'exception' to equate to development built with 400m that does not have an effect upon the heathland and does not consider a hotel refurbishment to qualify as 'exceptional'. However, **JS** later commented that National Trust ownership of the land, given their alignment of values with Natural England, as well as the legal covenant within the National Trust lease over the land (that would prevent the land reverting from tourism to primary residential) could form part of an argument that this case could be considered as an exception.

9. With regard to occupancy rates, **JS** stated that his concern was principally around the self-catering element as opposed to the overall numbers. If the proposal was all for C2 use then it wouldn't be perceived as a net increase when compared within the existing site, taking in to account the residential staff numbers. **JS** stated that the occupancy rates are really something that the Local Planning Authority (LPA) as the competent authority, should be assessing rather than NE and that he will therefore encourage them to do so (i.e. if the LPA is content then NE are content on the occupancy figures).

10. There was discussion around the challenges in trying to compare existing staff and visitor recreational behaviours with the new visitor demographic following the redevelopment. **BR** explained the increased self-containment model proposed, in terms of the proposed new luxury facilities and services that would retain visitors more on site than in the current scenario. **JS** said that the NE would go back and review the initial visitor survey undertaken and advised that a further visitor survey would be problematic given the pandemic and unpredictability of current behaviour.

11. **JS** advised that a new survey of the existing on-site residential staff behaviours in term of their usage of the heathland would be a useful data collection exercise and suggested that as a minimum the following information would be useful:

- Which circular walks were used;
- What the staff know about the heaths and which areas to avoid;
- How often the staff visited the heaths;
- How much time spent on the heaths; and
- Which points of access were used.

12. **DF** agreed that he would provide a draft of the staff questionnaire to NE for comment, to prevent being criticised on methodology as had occurred with the previous visitor survey.

13. **JS** questioned why a figure of 2 persons per room was used in the occupancy figures as opposed to 2.6 for the existing hotel. **BR** explained that the existing and proposed bed spaces had been counted up and compared. The new hotel will only provide a maximum of 2 bed spaces per room. NE accepted this approach.

14. **JS** questioned how many parking spaces were proposed and stated that it would be preferable to offer the same amount of parking as existing rather than increase parking provision. **BR** explained that it had already been offered to NE that parking space provision could remain at 79 spaces as existing and highways had accepted this.

15. **JS** asked about whether the on-site staff are permanent or temporary and stated that detailing an average staff occupancy over the year would be helpful. **JS** said it was an interesting point that on-site staff did not have access to cars and would therefore be likely to seeking local leisure activities.

16. There was discussion about proposed controls over pets in the redeveloped resort. **BR** explained that cats would not be allowed but dogs would continue to be allowed. **AN** raised concerns about dog walking on the heaths and perceived that generally guests are more likely to bring a dog while staying in C3 accommodation, as opposed to C2. **AN** highlighted that the current on-site staff were not likely to be allowed dogs and that dogs would have a greater impact upon the statutory site than people alone. It would be helpful to provide an estimate of existing and proposed dog occupancy. **DF** suggested asking if staff kept dogs as part of the staff questionnaire to check if **AN**'s assumption of their not keeping dogs were correct.

17. Discussion around what environmental betterments could be included. **DF** explained that 9ha of land around the hotel were included under the lease whereby improvements could be delivered such as boundaries, education info, promoting alternative walks, designated dog walking area, woodland management etc.

18. **AN** outlined proposed restoration works to a mire located within the Dorset Heaths SPA/SAC to the northwest of the site. It was highlighted that there is a direct access point to this part of the SAC/SPA from within the adjacent woodland to the hotel (within the blue line) and it would be preferable if this access point is removed to make accessing the heathland at this point more difficult. **AN** also commented that it would be helpful for the client to infill the ditches within the woodland which would aid the restoration of the mire and could be done at a relatively low cost, using onsite spoil to fill the ditches. **AN**

agreed to share information and location plan of the proposed mire restoration works and its location.

19. **AN** commented that the area within the blue line to the east of the site, currently used as a small golf course, has developed into a more heath-like habitat over time. As such, it could be used as a potential foraging ground for birds such as Nightjar. **AN** recommend that an appropriate management regime of this area is implemented and see it as a great opportunity to restore priority habitat for species such as Sand Lizards.

20. Discussion around the implications for the Poole Harbour SPA/SAC with regards to nutrients and potential for contributions in accordance with the SPD. **JS** stated that new guidance is soon to be released for phosphorus and nitrate calculations, which can be used if a net increase in nutrients is expected to arise as a result of the development. **DF** explained that given we are not proposing a net occupancy increase we considered that we would be nutrient neutral.

21. In relation to recreational pressure on Poole Harbour SPA/SAC, **AN** highlighted that a net increase in recreational pressure is likely, given that the current on-site staff do not have vehicles so are unlikely to have an impact, in comparison to a proposed increase in guest numbers. Therefore, effects upon this SAC/SPA should be calculated separately to Dorset Heaths SAC/SPA. **AN** confirmed any increase in nutrients and/or recreational impacts to Poole Harbour SAC/SPA can be offset through financial contributions.

22. The following were agreed as actions and next steps:

    - **JS** to communicate to the LPA about occupancy rates being for the competent authority to assess
    - **JS** to review existing Visitor Survey already submitted
    - **DF** to provide NE with a draft of a staff survey for comment
    - **AN** to provide plan and background information in relation to proposed mire restoration project
    - **BR** to discuss with Kingfisher potential for Golf Course area ecological management strategy and potential for controls over dogs

ANNEX 7

Black Box Planning Response 8th November 2021

8th November 2021
BR/ref

Andrew Collins
Dorset Council (Purbeck)
Planning Services
Westport House
Worget Road
Wareham
Dorset BH20 4PP

Ben Read BSc (Hons) MA MRTPI
E: ben.read@blackboxplanning.co.uk
T: 07748594131

36 Marsh Street
Bristol
BS1 4DZ
BlackBoxPlanning.co.uk

Dear Andrew,

Application Reference: 6/2018/0566 KNOLL HOUSE HOTEL, FERRY ROAD, STUDLAND

I write further to the recent comments received from Natural England (NE), dated 29th October 2021, and subsequent discussion about the redevelopment of Knoll House. The comments received from NE are, on the whole, welcomed as productive in enabling progress with the planning application. The applicant also welcomes the invitation to discuss these matters further, but also consider that there is an opportunity to progress the planning application in the short-term having regard to the range of measures set out in NE's email and providing suitable Heads of Terms to secure those measures.

NE have set out a list of measures that they consider to be necessary to mitigate/address the potential risk of increased recreational impacts on the designated sites. This matter sits at the heart of the issue relating to the potential for adverse effects on the heathland and other local designated sites. For assistance, this letter provides some clarification of the points raised by NE in respect of the occupancy and operation of the proposed development. These issues are central to reaching a conclusion as to whether the proposal is likely to result in the net increase or decrease of people occupying the site and therefore potential for recreational impacts on the designated sites. That said, and whilst we would welcome further discussion on this issue, the measures outlined by NE to address the potential for impacts (mitigations) have been included in the applicant's proposals in any event, albeit proposed as enhancements. Either way, the key issue, in the context of the Habitat Regulations, is to secure them in perpetuity to avoid any net impacts thus adopting a precautionary approach. This matter is considered further, below, alongside a set of proposed Heads of Terms.

Comments on points raised in Natural England Email, dated 29th October 2021

In light of the above, and to inform further clarification, I have provided comments on each of the points raised by NE in their email:

1. Natural England advise that the results of the recreational survey of existing staff indicate that over 50% of the staff survey use the local heaths for recreation 1-3 times a week (paragraph 3.5.2 Staff Questionnaire Survey Report). However there appears to be an error in this figure which should be 47% (see detailed comments). Overall the results of the survey show that a proportion of the staff resident on site access the designated sites and therefore Natural England advise that it is also reasonable to count a proportion of the staff in the occupancy rates of the existing hotel.

   Response comment: Paragraph 3.5.2 states "*around* 50%" not "over 50%" as suggested here. The precise figure is 47.3% (which has been rounded down by NE), but it is just a convenient way of summarising the figures. It is possible there is some confusion with para 3.2.1 of the Survey Report, which says the heathland is used by over half of the respondents full stop (ignoring frequency of visits). It also doesn't take account of the clarification at para 3.2.2, where it sets out that this is also probably an underestimate and that around 80% of the staff use the heathlands. The figure of 47.3% therefore understates the usage of the heathland by staff members but is a robust reference in context. This should also be considered in the context of the Visitor Survey Report, which demonstrates that proportionately fewer guests visit the heathland than staff.

2. The assessment of occupancy of the proposed facility indicates that while the number of guests increases in all seasons above the current facility (Knoll House Hotel – Assessment of Occupancy Rates Table 6).

   Response Comment: This is correct. The potential number of guests staying increases in all scenarios above existing guest levels, but the total number of people residing on site decreases in all scenarios. We assume this is just a point of clarification.

3. The staff questionnaire of 26 staff carried out in the holiday season in July 2021 provides information about the relative proportionate staff occupancy at the application site. This allows an estimate to be made of the likely level of equivalent staff in occupation on an *annual* basis. Natural England advise that it would be appropriate for the authority to use a figure of an equivalent of 39 full time staff on the site year round using the proportions present during the survey applied to the maximum 57 on site. This simplifies the consideration of simple numbers present on the site using table 6. The Hence the levels of recreation pressure from existing staff completing the questionnaire may better be equated to the residents in the proposed hotel and flats. It is not reasonable to consider that a figure of 57 should be used throughout the year nor an average staff level which might be calculated as 48 although Table 6 has insufficient information at present as well as varying staff figures some exceeding 57.

   Response Comment: It is appropriate to use the staff figures set out in Table 6. These are proportionate to the seasonal variation of the hotel. The maximum resident number of staff identified is 66, which is based on the number of staff beds available. The resident staff levels in the low and shoulder seasons have been reduced

proportionately. Table 6 does not identify 57 staff year round, in the off peak periods, for example, only 33 staff are identified in the staff accommodation.

This is considered a robust approach because the overall staff levels can exceed this with seasonal variations. The staff accommodation is also an attractive proposition in the context of hotel's current trading model i.e staff want to come and work at Knoll House because it provides staff accommodation - it is cheaper for them than seeking alternative accommodation. It is also appealing to the hotel because the accommodation is included in the staff salary package and therefore more cost effective. Having discussed this issue with the hotel management, it is also clear that the hotel surroundings are also part of the appeal for their staff, many of whom are from overseas. In terms of overall numbers, using the latest peak season as an example, the overall staffing numbers identified are a low estimate of overall operational needs (i.e. in the real world, staffing levels would be higher than quoted).

4. The assessment will need to include a consideration of the proportionate level of recreational activities of staff in the *new* facility rather than effectively assuming this to be zero. This is highly unlikely, indeed the staff survey suggest that 14% of visits to the heaths by the existing staff are less than 1 hour in duration and so could be taken during breaks. Further, it is likely that staff from the new facility will also continue to take opportunities for recreation on the heaths in the locality of the hotel after work. In order to be suitably precautionary we recommend that staff in the proposed facility are taken account in the occupancy figures for the proposals, having regard to their likely use of the heaths during and immediately after work. Based on the information available we recommend this is achieved by including 20% of the new staff in the occupancy figures for the new proposals.

   Response Comment: From a practical perspective, the staff in the new resort will not have an opportunity to utilise designated sites during their shifts. Staff get a 1hr break across an 8 hour shift. This is usually taken as a 30minute break for food and then shorter 'on the run breaks'. The Staffing and Travel Plan strategies submitted set out that there will be no opportunity for staff to drive to work and will be required to catch the staff bus. Many of the staff will be living in the local area and will already be in the system from a recreational impact perspective. Please see a copy of the Staffing Strategy submitted with the planning application. From a resort operation perspective, the Management will not allow staff to 'hang around' after their shift and there will not be the opportunity to utilise the designated sites. They will be working straight shifts which means that they will be bused in, work their shift and bused out. The move to more permanent roles with regular shift patterns means it is unrealistic that staff would be using the designated sites during the day in association with their work patterns. We do not consider applying a notional 20% to be an appropriate or robust methodology for these reasons and would question precisely how this figure has been derived.

5. The per room occupancy rates of the new facility are given as 2 compared to 2.6 in the existing hotel. The applicant has stated that the difference is based on the number of beds per room, with the new facility restricting bed spaces to 2. Natural England is satisfied with this approach provided the existing occupancy figure of 2.6 also only includes permanent bed spaces i.e. convertible sofa beds or temporary beds etc. are excluded. Further, clarification is also needed on what restrictions will be applied to ensure/detect that the new facility does not add bed spaces to the new rooms.

   Response Comment: The existing hotel is unrestricted in terms of numbers of beds and the inventory that was used to calculate the capacity includes family and larger (triple) rooms. The capacity of the proposed development can be controlled by way of planning condition or agreement. This can be enforced with Kingfisher keeping a booking log and inventory as they do anyway as part of their booking process.

6. A key difference between staff and guests will be the rate of dog walking. Natural England notes that it is proposed that the new facility will limit the number of rooms where dogs may stay so as to ensure there is no increase in dogs on site. Natural England welcomes this aspect of the proposals, however, your authority will need to be satisfied that the restriction can be suitably monitored and enforced (a requirement which is problematical in respect of the requirement for certainty in the Regulations) and further information may be needed from the applicant's in this regard.

   Response Comment: The existing hotel has no restriction on dogs and a number of guests do bring dogs. A restriction on the rooms (in terms of both location and number) can be imposed by condition or agreement. Operationally, the resort (as well as the existing hotel) will have rooms/keys that will be nominated for guests with dogs – this approach is in place currently. The hotel also charge a small fee for dogs, so it is recorded in the booking information. The booking data can be recorded and made available to the LPA to aid enforcement if required.

7. Notwithstanding the requirement for the total number of overnight stays being the equivalent of that of the existing facility there remains some uncertainty as to whether the guests of the new facility will use the heaths in the same way as the guests and staff from the existing facility, particularly in respect of access on foot and cycle across the designated sites.

   Response Comment: Please see the submitted Operations Report prepared by Kingfisher. It is considered that guests of the new resort will use the designated sites less than guests at present. The existing hotel is operated at the budget end of the market and the facilities on site are limited in number and quality. The quality of the hotel will also decline as the buildings also continue to decline. They are already in need of major investment. It is currently attractive to walkers who use it as a base from which to explore the local area. This will be less prevalent in the redeveloped scenario where guests will have greater opportunity and option to stay on site and make use of the facilities – this is consistent with the move to a luxury offer, increasing

self-containment and expenditure retention. It is considered that, per capita, the future guests will utilise the heathlands less. The Heads of Terms will include the obligation to deliver a circular walk and measures to reduce connectivity and opportunity to access the designated sites.

8. The proposals provide new facilities that will be attractive and open to non-guests. This is likely to further increase the risk of recreational activity in the area.

   Response Comment: Non-guest activity will be relatively small and will be for people within the existing catchment. Membership of the spa, gym and pool will be for local residents and offer an alternative to walking on the heathland and using the designated sites rather than encourage it. This is a benefit of the scheme which, it is considered will reduce recreation on the heathland by providing an appealing alternative.

The comments raised by Natural England are welcomed and are generally considered productive. It is hoped that the comments and points of clarification, set out above, help to address the issues raised. It is also worth highlighting, in context relevant to the levels of occupancy, that the existing hotel is unrestricted in terms of occupancy and the proposal offers the opportunity for a level of control. Kingfisher have agreed to limit the capacity of the proposal moving forward. Conversely, as the quality of buildings on site continue to decline, without the substantive investment required, Kingfisher will need to adjust how they trade it, which will require increases in the inventory (more bed spaces) at lower cost, to maintain their business.

As set out above, we would welcome the opportunity to discuss these issues with them directly.

Proposed Enhancements (applicant)/Mitigations (Natural England)

It is understood that much of NE's concern has centred around the ability of the applicant to secure the range of measures in perpetuity, rather than the measures themselves. I enclose with this letter, a set of Heads of Terms proposed for inclusion in a planning agreement to secure such provision. Such an approach is commonplace in the planning system and it will be necessary, in order to execute any Planning Agreement, to secure the signatures of all parties who have an interest in the land. Such provision will be necessary prior to the determination of the planning application and any resolution made by the Planning Committee will be subject to it. Therefore in the context of NE's concern about securing the measures set out, there is comfort that if the Planning Agreement is not executed by all parties, the planning permission will not be issued.

With regard to the measures identified, I have provided comment on these, in turn, below. In addition, I have also included a list of additional measures which form part of the proposals accordingly.

Measures sought by Natural England:

- The provision of new open space for guests and visitors designed to cater for dog walking. Natural England understands some 9ha of land are available within the lease, including the golf course. A recreational and habitat enhancement plan for these areas will need to be secured by any permission and maintained for the duration of the application (eg. in perpetuity). This should include new circular walks from the new facility, along with designated dog walking areas along with heathland / acid grassland habitat restoration management on the existing golf course. **Comment –** these items are agreeable to the applicant and have formed part of their proposals. Ecology Solutions have been instructed to prepare a plan showing the principle of the measures sought.
- Direct informal access from the hotel site to the adjacent heaths should be restricted through appropriate fencing and the restoration of mire habitats to the northwest of the site, which in itself will help prevent access. An agreed plan for the mire restoration should be agreed with Natural England and the land owner and its implementation secured by any permission. **Comment –** Agreed. The restoration of the mire will also help to restrict access to the designated sites.
- The scheme should ensure that there is no net increase in the public and private car parking spaces available within the new scheme. **Comment** – The applicant is flexible in respect of the level of car parking and has proposed a robust Travel Plan. A supplementary note has been provided under separate cover.
- Appropriate SAMM contribution in line with the Heathlands SPD. **Comment** – I would welcome comment from the LPA on the level of contribution sought, if necessary. The applicant is agreeable if it is considered necessary.
- Appropriate mitigation secured relative to the Recreation and Nutrients SPDs. **Comment** – as above. I would welcome confirmation of the level of contribution required, if necessary.

Additional measures also proposed by the applicant:

- Delivery of a Woodland Management Plan;
- Informative signage in key locations;
- Education about the surrounding area to form part of staff training;
- All rooms to be provided with Visitor Information Packs in relation to designated sites; and
- Construction Management Plan.

I hope that the information set out above is of assistance and I would welcome the opportunity to discuss matters further with Natural England in due course.

Yours sincerely

Ben Read MRTPI
Director

ANNEX 8

Consultation Response from Natural England (dated 14th December 2021)

Date: 14 December 2021
Our ref: 265295
Your ref: 6/2018/0566

Click here to enter text.

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Mr Collins

Planning consultation: Redevelopment of existing hotel to provide new tourist accommodation including 30 bedroom hotel, apartments & villa accommodation, associated leisure & dining facilities
Location: Knoll House Hotel, Ferry Road, Studland, Swanage, BH19 3AH

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Objection

Summary

Natural England object to the application which:

- Is contrary to Local Plan policy and would result in an increase of 63 C3 units within 400m of the designated heathland sites which will lead to a net increase in recreational pressure.
- The applicant has not demonstrated that they can secure land necessary for mitigation in perpetuity because it is leased from the National Trust and thus is due to be renegotiated in March 2022.
- Evidence provided is not suitable to establish a conclusive baseline of guests and staff use of the designated sites
- Surface water currently drains into the designated sites eg Littlesea
- Some mitigation measures are proposed and welcomed by Natural England however in many other areas potentially mitigating factors are simply asserted rather than secured
- Natural England concur with the views of the Dorset AONB Team that the visual impacts of the proposal, a major development, cannot be moderated and that far from enhancing the AONB the proposal will have adverse impacts

The applicant has provided a report surveying staff use, Knoll House Hotel Ferry Road, Studland : *Staff Questionnaire Survey Report Aug 2021*. Natural England provided advice relating to the content of the questionnaire in advance of it being carried out. Whilst the survey provides some useful information it has not allowed Natural England to adequately assess the adverse effects which are likely to arise from the proposal because of the previous surveys inadequacy. The data reported has not been presented in either a fully comprehensive eg raw data is omitted or appropriate manner eg use of % rather than actual numerical responses.

Knoll House Hotel – Assessment of Occupancy Rates, Natural England has reviewed this information and is unable to reach a firm conclusion about current and proposed occupancy rates which have altered during the application process. There are gaps in the data presented for annual

occupancy rates for example. What is clear is that the business model presented is just that and that the business objective will be to maximise occupancy as far as possible. This cannot be reasonably controlled or regulated by the authority to a no net increase were it currently possible to agree a seasonal level of occupancy.

Knoll House Accommodation Report: the report provides some insights as to how the applicant *anticipates* the residents will make use of the facilities, however these represent expectations on users rather than behaviours which are evidenced and could be relied upon by the authority in relation to the tests under the Habitats Regulations. Whilst facilities are provided, it is for residents to determine how they make use of these or not. The report emphasises the need to *retain expenditure within the resort*, however at this location, with access to very high quality and iconic natural resources such as Godlingston Heath, Studland heath and beach adjoining and which have open access it is difficult to see how recreational use of these areas will not occur. The proposal sets out how residents at its other facilities make use of these on site activities with a clear intention of keeping residents on site. Information provided details use of onsite facilities such as dining alone. Natural England advise that residents are in no way constrained in accessing other nearby countryside and thus is not possible to reasonably control or regulate activities outside the application site to demonstrate no net increase in recreational pressure.

The *Staff Survey and Accommodation Report* characterise the staff as :

> "Staffing of the existing hotel is predominately on a temporary seasonal contract basis recruited by specialist agencies. Typically, staff tend to be young seasonal workers, many of whom come from overseas."

The survey indicates a level of recreational useage by the staff which includes the nearby designated sites. A different scenario is proposed with staff living nearby but not at the site, there is no reason to anticipate that these staff would behave in a way differently to the current staff and some may travel to and from work across designated sites regularly.

Natural England has no *evidence* to confirm that the type and level of use, hence impacts, on the designated sites by current hotel residents could be equated on a one for one basis to that of residents in apartments or villas. The SPD refers to self-catering units as a proxy for family occupancy and associated family recreational uses such as walking and off road cycling. The applicant aspires to retain residents on site but cannot demonstrate this as a matter of certainty.

The report provided by the applicant indicated that they consider the apartment guests will have minimal kitchenette facilities and hence the apartments and guests are not comparable in their holiday behaviour to visitors who are mainly self-catering with provisions from local outlets. In part the provision of fine dining and other services are argued as factors which tie guests to the application site. These assertions are not evidenced and certainly not secured by restrictions either on apartment modifications or on guests accessing the adjoining designated sites.

The information provided by the applicant confirms that the villas and apartments will fall under the C3 use class and therefore the application is contrary to the Local Plan policy of no additional C3 use within 400m of designated heathland sites. The applicant has not provided evidence to show that the current hotel use will not give rise to increased and additional recreational effects. The initial visitor survey is wholly deficient in both methodology and reliability and does not represent the best available information which should inform decisions under the regulations.

New C3 use at the application site
As set out above Natural England is very concerned about the proposed change of use from C2 to C2/C3 in the form of 63 units all within 400m of the designated sites.

Comparability of effects and occupancy:
Natural England has sought to understand with the Council the baseline of people (staff and guests) present at the *current* Hotel and the likely level of people who would be present on site if the application was operating. This is the first stage in assessing impacts of the currently approved

Hotel so that this can be judged against the application. This would allow a consideration of effects relating to both staff and guests and consequently an appraisal of the net differences in impacts on the designated sites.

As a result of the evidence so far made available it has not been possible to reach a definitive conclusion about these potentially differing rates of overall occupancy either as maxima or on a seasonal basis. A consideration is provided below.

Natural Englands advise on the difference between hotel residents and those in self-catering units (even if limited to a kitchenette as proposed) is that the likely effects from the latter will be greater with guests in apartments having a more active, family orientated range of countryside activities eg walking, cycling and dog walking than Hotel guests.

In setting out this advice Natural England has taken into account that the apartment accommodation will be occupied at different rates through the seasons eg 40% winter and close to 100% high season and the letting arrangements for the apartments will result in multiple short term lets rather than for weeks or months at a time. This would increase the risk of occupiers seeking direct access into the designated sites from the facility. In addition Natural England advises the applicant will need to demonstrate that there are very strong safeguards such that apartments may not be occupied on a residential basis. The authority will need to be fully satisfied that a suitable legally binding agreement is in place which restricts both the current owner and future operators of the site from establishing residential use. Natural England is aware that in other approved schemes a *Primary Residence Restriction* has been secured on all self-contained units, this may be applicable.

The applicant has indicated that occupancy in the hotel will be 2 per room however there is no certainty that over time the managing company would not bring in additional capacity through single beds, sofa beds etc. the authority needs to be certain that it can monitor and take the necessary enforcement action to secure the stated level of occupancy. The applicant needs to address this concern to the authority.

Advice concerning changes in site capacity and hence likely recreation related impacts
Natural England has provided some previous guidance on how the authority may consider the effects due to staff numbers under the current and proposed regime. The applicant has however provided a number of differing values of current staff numbers in different submissions. Natural England advise that it would be appropriate for the authority to use an annualised figure of 39 for the current hotel use based on the level of staff being up to 57 as is set out in a number of submissions. The proposed development will alter arrangements so that there are no residential staff on site but there will be staff on site who will have opportunities for breaks etc. It is considered that a reasonable rate of heath use would be the 14.3% figure provided in the staff survey for staff using the area for up to 1 hour. Whilst the applicant states that staff will be brought in by bus this is not certain, its use cannot be secured hence staff could use other transport means, allowing time to access the designated sites.

The applicants approach has been to provide some information on proposed occupancy and staff levels across the different seasons of the year. It has not been possible to make use of this information because of the lack of detail. Further the applicant will naturally seek to maximise occupancy and it would be both unreasonable and unenforceable for the authority to attempt to restrict this through binding agreements in order to justify an approval. There is already evidence that the figures provided are highly variable.

Natural England conclude that there is considerable uncertainty about the numbers of guests and staff and that it would be appropriate, rather than making assumptions about the available evidence, to use maximum numbers.

This indicates the following:

Current hotel: 273 guests plus 39 staff resident (annualised) = 312
Proposal : 324 plus residual effects from the 150 FTE staff predicted to be on site (with 14.3 % of

staff likely to access the designated sites in up to 1 hour visits)

A difference in maximum capacity of 51 guests.

This represents a net increase in recreation related effects on the designated sites particularly when consideration is given to the combined Visitor Survey figure of 80% visiting the designated sites at Studland Beach and dunes and Studland and Godlingston Heath.

As previously noted it is difficult to draw definitive advice together from the evidence available but with larger guest numbers and a greater proportion of facilities for families and groups with some self-catering facilities available on balance it is advised that there will be likely to be greater recreational impacts on the designated sites without mitigation.

Car parking at the application site
The applicant has indicated 6 April 2021 that they will restrict car parking at the Hotel to the current level of 79 spaces. This should be secured by the Council through a legally binding agreement which will be enforceable over the long term eg S106. This will avoid additional recreational pressure on the designated sites through an increase in other visitors enabled by access to more parking.

Possible mitigation measures

Pets
Natural England notes that it is proposed that the new facility will limit the number of units where dogs may stay so as to ensure there is no increase in dogs on site. In the absence of clearer information than 30%, Natural England interpret this to mean that the nature of the boutique hotel would be such that this would only apply to the apartments eg 30% of 63 or 19 apartments, confirmation would be welcomed. Natural England advises that this aspect of the proposals is in principle acceptable on the basis of equivalency of related activities. However, your authority will need to be satisfied that the restriction can be suitably monitored and enforced (a requirement which is problematical in respect of the requirement for certainty in the Regulations) and further information may be needed from the applicant's in this regard.

The applicant has also indicated that under new arrangements staff will be restricted from bringing dogs to work, whilst this is welcome the comments relating to cats would apply eg certainty and enforcement.

Restriction on cats
It is appropriate to ensure that residents are restricted from bringing cats to the site, however Natural England is not aware how the authority can be certain that this measure will be adequately monitored and enforced against the managing company such that it meets the certainty required by the Habitats Regulations. The proposed boundary fence will also act to reduce the risk but not fully. Further information is required to clarify this matter.

Securing mitigation and moderation measures
Natural England has previously discussed the issue of land currently leased to the applicant which surrounds the application site with the land owner and applicant. Control of this land is essential to provide certainty that the applicant could deliver both AONB moderation measures and heathland recreational pressure mitigation measures.

The land necessary is not currently under a lease from the National Trust, it having expired recently. It appears that the duration over which this land might be available and the extent of land available will be resolved in spring 2022 after the authority has determined this application. Therefore Natural England advise that the authority may not rely on any agreed mitigation or AONB moderation measures being secured for the necessary duration. It is understood that the Trust is seeking to secure an option to take back areas of land which might otherwise be available for mitigation for use a offsetting car parking for example. In the case of agreement between the applicant and the Trust an agreement as short as 15 years only may be secured, far short of perpetuity.

The authority may take a view that, if both parties can be shown to have fully understood and agreed in principle to the advice provided, it would be reasonable to expect a S106 to be signed by both parties and therefore for the applicant to be bound by a Grampian condition requiring the S106 to be agreed prior to any commencement authorised by a permission. To this end Natural England has attempted to provide a level of detail such that the landowner and applicant may be clear of the expected measures which the authority may require.

The authority has also been provided with a draft Heads of Terms for a planning agreement that would secure a number of mitigation measures proposed by the applicant. Whilst the document is generally acceptable and comments on the requirements of specific parts are provided in this letter, as set out above the authority will needs a reasonable level of consensus between the parties that it will be agreed. This is not evidenced and represents uncertainty that the measures can be delivered in an acceptable way.

Fig 27
This sets out the landowners preferred option for relocating facilities lost due to sea level rise. It is acceptable in principle to Natural England as it is outside of designated sites and would not result in an increase in car spaces. It does impact on land which would otherwise have public access under the applicants proposal reducing the area available, however this is this time a suggestion rather than a formal proposal with a delivery timescale. Natural England advise that the loss of open habitats at this location should be addressed by minimising the area of pine woodland surrounding and so providing ready access around the car park. The proposed mitigation area would not be compromised to an extent that it would not be functional.

Plan 9405 ECO3 Natural England understands up to 9ha of land may be available within the leased area, including the mini golf course. A recreational and habitat enhancement plan for these areas will need to be secured by a legally binding agreement (S.106)with any permission offered and maintained for the duration of the application (eg in perpetuity). This should include circular walks from the new facility, with designated fenced dog exercise areas, along with heathland / acid grassland habitat restoration management on the existing golf course.

This plan is generally acceptable as a layout for the natural greenspace, Natural England advise that the modified version indicating the exercise area in the woodland is not preferred to a location east of the Ferry Road B3351. This is because it is intended that the area should also be readily accessible to other residents and visitors to the area with dogs. The size set out is significantly larger than that at other facilities which are more typically 30m by 60m which would be acceptable here, a dog bin should be provided outside. In principle Natural England would have no objection to an exercise area being provided by the applicant in the woodland as shown in the revised plan at some point in the future should they deem it a valuable option. A large area of heathland restoration is proposed south of the tennis courts, however this is not consistent with public pressure. A focus on more discrete areas of heath and acid grassland should be secured through a planning condition relating to the production of a CEMP in advance of commencement.

The applicant should engage with the National Trust concerning the general principle of access to the grassland to the south of the Hotel to reach an understanding that users need not be constrained within the area of any future tenancy agreement.

Natural England advise the applicant that the current mini golf course, should it become accessible natural greenspace should be enhanced by the provision of two more formal view points along the eastern edge close to the break of slope to facilitate user access. The precise design should be the subject of agreement with the landowner as part of the CEMP.

The applicant should provide guests with a plan/sign board indicating the Rights of Way available to access the beach and surrounding heathland and dunes as well for the surrounding facilities such as dog exercise area and circular walks and advice about appropriate

If areas required for recreational mitigation are required for other uses eg parking then removal of

the tennis courts may offset the reduction in available area.

Boundary fencing
Direct informal access from the hotel site to the adjacent heaths should be restricted through appropriate fencing and the restoration of mire habitats to the northwest of the site, which in itself will help prevent access. A plan is provided at **Annexe 2** indicating a suitable fencing route and it is advised that the authority should consider whether a 2m high green coated weld mesh with a grid size to be agreed might be acceptable. This may form the basis of an obligation in a S106 agreement as it would need to be maintained in perpetuity. It is further suggested that a mechanism is agreed whereby the authority or landowner can draw down a suitable sum from an escrow account to carry out repairs should panels be vandalised or otherwise damaged if the managing body does not carry out prompt repairs. The reason for this arrangement is that the boundary is consistent with the Godlingston Heath management unit and grazing animals could escape into the application site grounds and road.

This measure is proposed by the applicant on the Heads of Terms as well as at ECO3 which also includes a proposal to close an access to the designated sites. This is considered an appropriate measure both to avoid direct access to the designated sites and also in providing a level of security for residents. Natural England have provided an indicative plan (Annexe 2) for the authority to consider both the route and specification. I have also indicated locations for gates for residents which *could* be key pad operated. This is not an indication that this measure is accepted but rather that if acceptable to the authority, applicant and landowner in principle it could form the basis for a detailed proposal to be secured through a planning condition.

Designated land within the previous tenancy agreement
Natural England has previously raised the issue of land falling within the agreement which is part of the SPA, SAC and Ramsar site, this wet woodland is not a priority habitat but requires restoration to mire/fen. This area does not form part of the operational land used by the Hotel and should be surrendered to the National Trust so that restoration works can be carried out and long term management secured by the trust.

At the meeting on 26 April 2021 it was reiterated by Natural England that the adjacent pumping station facility causes harmful overflows into the designated sites. The application will result in additional loading and hence increased frequency of nutrient enriched water to the designated sites. A package of works including scrub clearance, ditch blocking and some surface water flow management is required to avoid harm to the designated sites. The Council should secure this mitigation measure through a planning condition/S106 requiring the agreed measures to be implemented prior to commencement of construction. This involves land in the control of the applicant and the National Trust and the applicant will need to provide evidence

Surface Water drainage
It is understood that the applicant will need to secure a route discharging surface water eastwards across National Trust owned land to avoid a western route into the designated sites. There is no evidence that this avoidance measure is agreed with the landowner and at this time this measure to avoid harm cannot be considered and hence there is a risk of harm to the designated sites from inappropriate surface water drainage.

Other designated sites
The authority will need to secure the appropriate level of mitigation in relation to Poole Harbour SPA, Ramsar nutrient neutrality and also recreational impacts on Poole Harbour as well as SAMM contribution in line with the Heathlands SPD in advance of occupation of the development. At present there is no agreement about net changes in site occupancy on which to base such mitigation contributions.

Appropriate Assessment
At this time Natural England is not able to advise the authority that the proposal will not have a likely significant effect on the European and internationally designated sites. In the light of the recent ECJ ruling (People Over Wind & Sweetman v Coillte Teoranta (Case C-323/17)) which concluded that

the avoidance/mitigation, e.g. as set out in the Dorset Heathlands Planning Framework (2015 – 2020) SPD, Nitrogen Reduction in Poole Harbour (SPD 2017) and Poole Harbour Recreation Supplementary Planning Document (SPD), cannot be taken into consideration when considering the Likely Significant Effects of proposals on European wildlife sites (and Ramsar sites as a matter of Government policy). Natural England advise your authority to undertake an **Appropriate Assessment** of the application under Reg 63.

AONB

The application site lies in the Dorset AONB, a designation of national importance with the highest status of protection in relation to landscape and scenic beauty. In exercising or performing any functions in relation to, or so as to affect, land in an Area of Outstanding Natural Beauty (AONB), all public bodies, local planning authorities and Natural England, have a duty to have regard to the statutory purpose of AONBs, which is the purpose of conserving and enhancing the natural beauty of the area (Section 85 Countryside and Rights of Way Act, 2000). Local planning authorities are required to take such action as appears to them to be expedient for the accomplishment of the purpose of conserving and enhancing the natural beauty and amenity of an AONB to the extent that it lies within their area (Section 84(4) Countryside and Rights of Way Act, 2000). You should assess the application carefully as to whether the proposed development would have a significant impact on the protected landscape of the AONB, or harm the statutory purpose to conserve and enhance its natural beauty. The Planning Practice Guidance confirms that this duty also applies to proposals outside the designated area but impacting on its natural beauty. The consideration of impacts on the setting of the AONB should include impacts on views from within the AONB as well as views into the AONB from the wider countryside.

The proposal forms a significant and perhaps major development in terms of visual impacts height and massing within the Dorset coast and we support the assessments made by the Area of Outstanding Natural Beauty team on its impacts. These comments should be given great weight when determining this application.

As noted above moderation close to the application site is proposed in areas which the applicant does not currently have long term control over. Further they rely on a screening stand of pine woodland which is coming to the end of its life span and will no longer perform this function. Its replacement is uncertain lying between the owner and applicant for agreement at present.

We advise you to consider, when determining the application, whether those impacts can be justified through policy given the nature of this development in a very sensitive location.
In weighing up the benefits of the scheme against the impact on the AONB your authority should also have particular regard to the provisions of the National Planning Policy Framework (NPPF 2021).

Paragraph 176 of the NPPF 2021 states '*Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas*'. The requirement, set out in the NPPF, for new development to not only protect the special qualities of the AONBs, but also serve to enhance those qualities is clear. Alongside national policy you should also apply landscape policies set out in your development plan. In particular the scheme should be considered in the context Dorset AONB Management Plan policy C2.f, which states that,

"*Proposals that are harmful to the character and appearance of the area will not be permitted unless there are benefits that clearly outweigh the significant protection afforded to the conservation and enhancement of the AONB. Where impacts cannot be mitigated, planning gain and compensatory measures will be considered*."

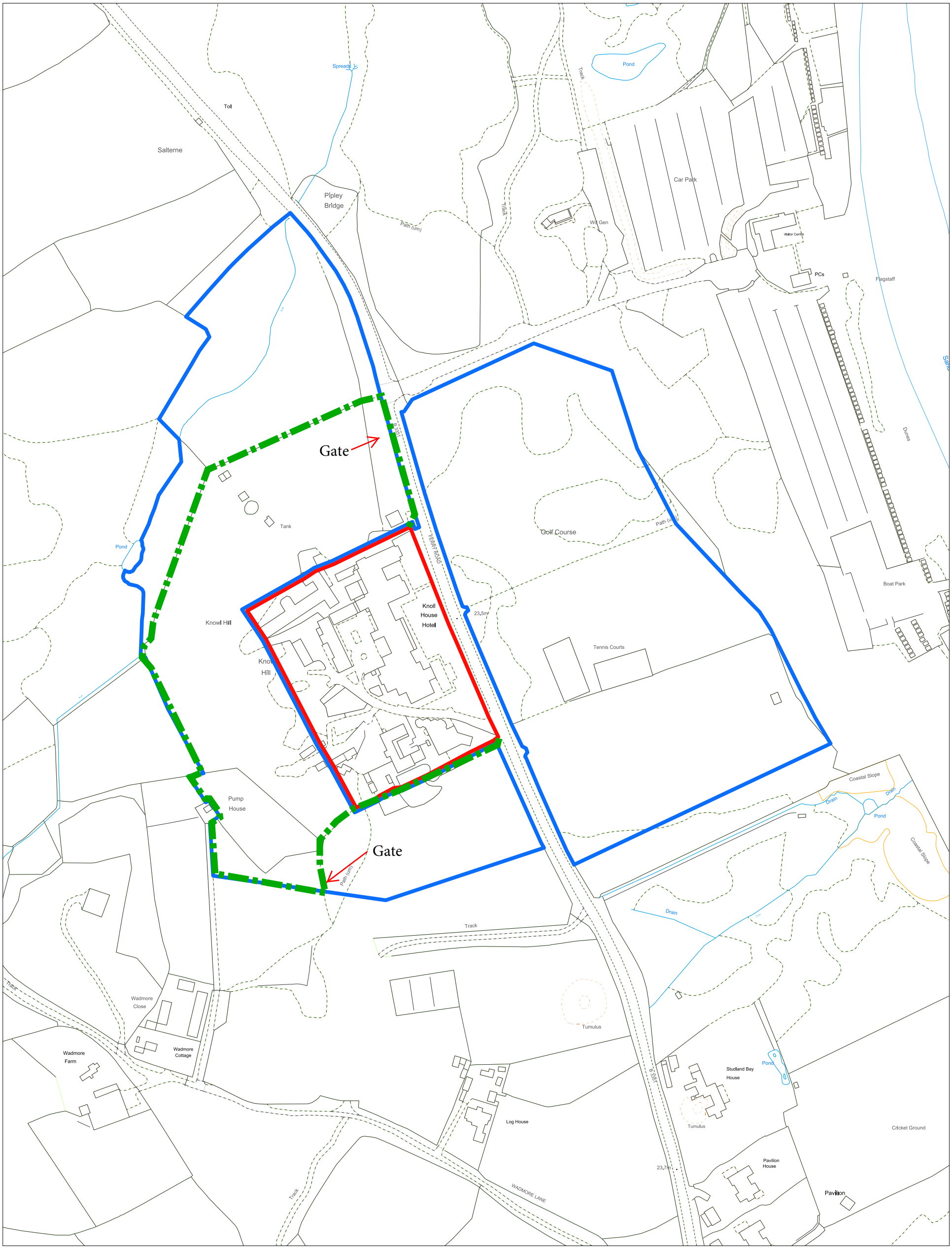
Land to the south of the Hotel owned by the National Trust and formerly leased to the applicant is identified as allocation where there should be tree planting to screen the visual effects of the development. Natural England **object**s to this proposal because of the adverse effects on the grassland priority habitat. The lack of planting would impact on the Councils assessment of visual impacts on the AONB. Moderation measures on the AONB should be delivered within the applicants application/red line boundary not in areas over which are not secured and where they do not currently have control.

Opportunities for the applicant to demonstrate landscape compensatory and enhancement measures might be realised through the provision of an agreed AONB landscape enhancement fund which may be used to deliver landscape and biodiversity benefits within the zone of theoretical visibility of the scheme within the AONB. Any landscape fund should be agreed and administered by the Dorset AONB Team.

Yours sincerely

Nick Squirrell
Conservation and Planning Lead Advisor
Dorset Team
Wessex Area Team
Natural England
Mob: 07766 133697
Email nick.squirrell@naturalengland.org.uk

Annexe 1
Plan indicating secure fencing route necessary

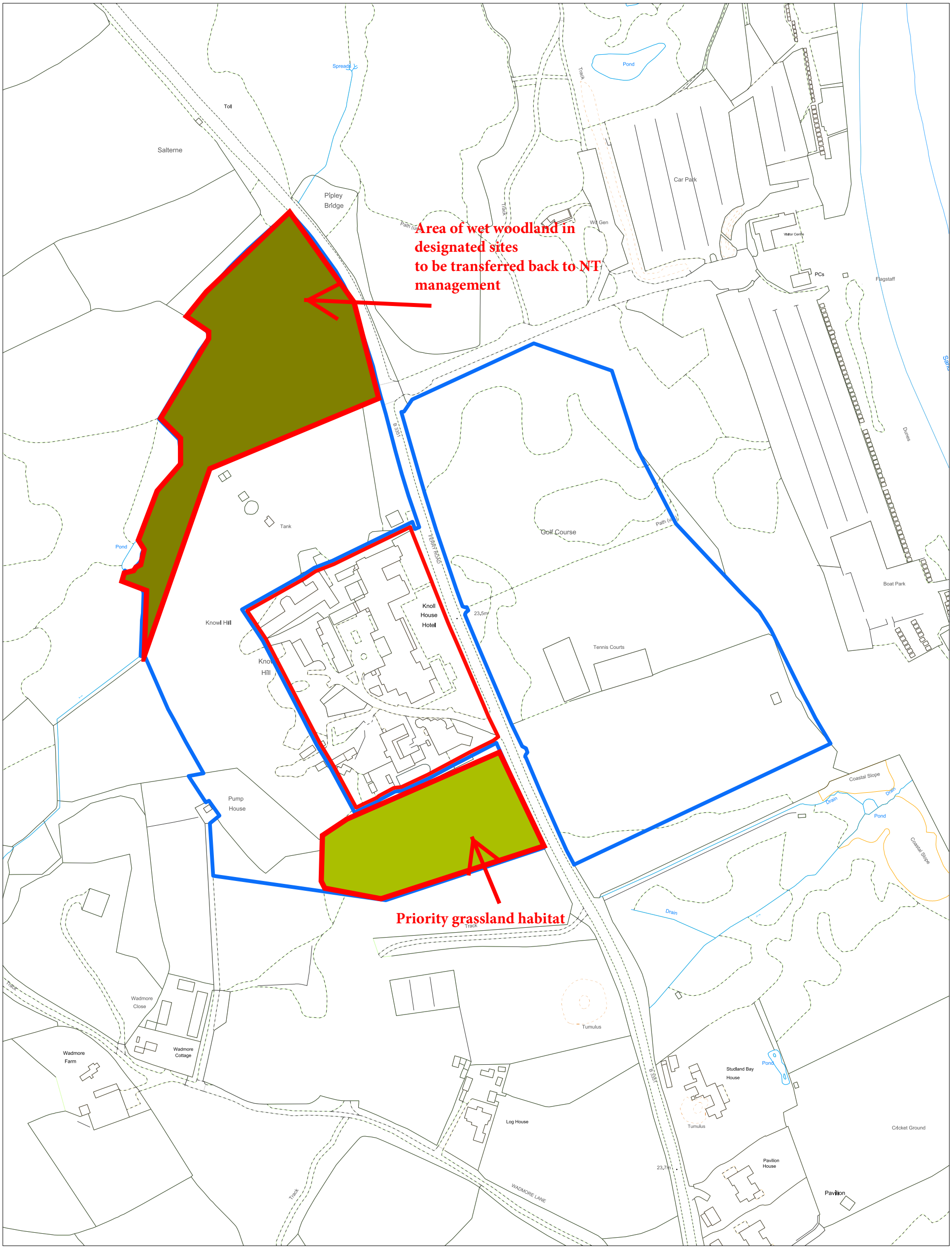


0m 50m 100m 150m 200m N

1:2500@A3

KNOLL HOUSE HOTEL

Annexe 2
Priority habitat



0m 50m 100m 150m 200m N

1:2500@A3

KNOLL HOUSE HOTEL

ANNEX 9

Guidance of relevance to Habitats Regulations Assessment

APPENDIX 4 – GUIDANCE OF RELEVANCE TO HABITATS REGULATIONS ASSESSMENT

European Guidance

Managing Natura 2000 Sites (European Communities, 2000)

1. The document entitled '*Managing Natura 2000 Sites the provisions of Article 6 of the Habitats Directive 92/43/CEE'*, published by the European Commission in 2000, provides guidelines to Member States on the interpretation of certain key concepts used in Article 6 of the Habitats Directive.

2. It should be noted that the section relating to Article 6(4) has subsequently been replaced through the publication of a further guidance document by the European Commission in 2007 entitled '*Guidance document on Article 6(4) of the Habitats Directive'*, which is considered below under the relevant heading below.

3. The Managing Natura 2000 Sites document states at Section 2.3.3 that conservation measures must correspond to the ecological requirements of the habitats and species present for which the site is designated and that these requirements *"involve all the ecological needs necessary to ensure their favourable conservation status".*

4. At section 3.5 the guidance states, in relation to deterioration and disturbance of habitats or species:

   "Deterioration or disturbance is assessed against the conservation status of species and habitats concerned. At a site level, the maintenance of the favourable conservation status has to be evaluated against the initial conditions provided in the Natura 2000 standard data forms when the site was proposed for selection or designation, according to the contribution of the site to the ecological coherence of the network. This notion should be interpreted in a dynamic way according to the evolution of the conservation status of the habitat or the species."

5. Section 4.4.1 sets out that in determining what may constitute a likely 'significant' effect one should take into account the Conservation Objectives for the designated site and other relevant baseline information. In the second paragraph of this section of the document it is stated:

   "In this regard, the conservation objectives of a site as well as prior or baseline information about it can be very important in more precisely identifying conservation sensitivities."

6. Section 4.5.3 of the document sets out the duty of Member States to provide certain specific information in support of the inclusion of a site within the Natura 2000 network. This information is to be provided in a format specified by the European Commission (the Natura 2000 Standard Data Form).

7. A link is drawn between the Standard Data Form and the formation of the site's conservation objectives within the text box at the end of section 4.5.3 of the guidance where it is stated:

   "The information provided according to the standard data form established by the Commission forms the basis for a Member State's establishment of the site's conservation objectives."

8. With regard to an assessment of the effects of a plan / project on the integrity of a designated site, the 'integrity of the site' is defined at Section 4.6.3 as:

"… the coherence of the site's ecological structure and function, across the whole area, or the habitats, complex of habitats and / or populations of species for which the site is or will be classified."

9. The guidance is clear, within the text box at the foot of page 39, that an assessment as to the implications of the plan / project on the integrity of the designated site should be limited to an assessment against the site's conservation objectives:

"The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives."

10. Section 5 of Managing Natura 2000 Sites deals with Article 6(4) of the Habitats Directive. It is noted that this section has been expanded upon and replaced by further guidance issued by the European Commission entitled '*Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC*' (2007), which is considered below.

<u>Assessment of Plans and Projects Significantly Affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2001)</u>

11. This document, published by the European Commission in 2001, gives guidance on carrying out and reviewing those assessments required under Article 6(3) and (4) of the Habitats Directive. It is provided as supplementary guidance and does not over-ride or replace any of that set out within '*Managing Natura 2000*' (European Commission, 2000) which as stated at page 6 of the document, "*is the starting point for the interpretation of the key terms and phrases contained in the Habitats Directive*". The guidance provided is not mandatory and it is clearly set out that its use is "*optional and flexible*" and that it is for "*Member States to determine the procedural requirements deriving from the directive*".

12. The guidance sets out the key stages in following the tests contained within the Habitats Directive. Pertinent to an assessment under Regulation 63, stages one and two are relevant. Stage one is the screening stage assessing the likelihood of a plan / project resulting in a significant effect upon the European site. The second comprises the Appropriate Assessment.

13. Section 3.2.4 is concerned with Appropriate Assessment and specifically, the assessment against the Conservation Objectives of the European site. Box 9 provides a list of five example Conservation Objectives for differing broad habitat types. One such example, that for a coastal site, taken from Box 9 is provided below:

"to maintain the status of the European features of this coastal site in favourable condition, allowing for natural change. Features include coastal shingle vegetation and lagoons (within a candidate special area of conservation (SAC), which is also an SPA)."

Guidance document on Article 6(4) of the 'Habitats Directive' (European Commission, 2007)

14. This document, published by the European Commission in 2007, is intended to provide clarification on key terms / concepts as referred to within '*Managing Natura 2000 Sites*' and replaces the section on Article 6(4) within that earlier document.

15. The document covers the concepts of 'Alternative Solutions', 'Imperative Reasons of Overriding Public Interest', 'Compensation Measures', 'Overall Coherence' and the 'Opinion of the Commission'.

16. With regard to ensuring the quality of an Appropriate Assessment, and to define exactly what needs to be compensated, it is stated at Section 1.3 that:

"Assessment procedures of plans or projects likely to affect Natura 2000 sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity."

17. The need to use information contained within the Natura 2000 Standard Data Form, in tandem with the site's Conservation Objectives when undertaking an Appropriate Assessment is specifically referred to (under the second hyphenated point at Section 1.3 on page 5).

18. Section 1.3.2 gives guidance on the application of Article 6(4) in respect of reasons of overriding public importance and Section 1.4.1 gives guidance on the application of Article 6(4) in respect of compensatory measures.

Managing Natura 2000 Sites – The provisions of Article 6 of the habitats Directive 92/43/EEC (European Commission, 2019)

19. In January 2019 the European Commission published updated guidance in relation to managing Natura 2000 sites, following initial guidance published in 2000 (see above).

20. The primary purpose of the revision was to incorporate relevant rulings of the Court of Justice of the European Union (EU) which have been issued since the initial guidance was published in 2000. It also integrates, into a single document, other relevant European Commission notes / guidance documents. Those key rulings (of the Court of Justice of the EU) and other relevant European Commission notes / guidance are discussed above in this report. The revised guidance provides clarifications of key concepts to Member State, authorities and stakeholders involved in the management of Natura 2000 sites (e.g. SPAs and SACs)

Guidance on the application of the precautionary principle (European Commission, 2000)

21. As discussed above, relevant case law makes it clear that in applying the relevant tests of the Habitats Regulations, there is a need for certainty, both regarding the nature and extent of predicted effects on integrity and in relation to the effectiveness of any preventative measures relied upon. Furthermore, enshrined within the Habitats Directive and Regulations (though not explicitly set out in either), based upon article 191 of the Treaty on the Functioning of the European

Union, is the need to apply the Precautionary Principle when assessing the risks posed to the integrity of the site/s.

22. If a risk of significant effect to the integrity of a site cannot be excluded on the basis of objective information, then application of the precautionary principle requires no consent to be given for such a project. The Precautionary Principle is not however without limits. It cannot be based on a purely hypothetical approach founded simply on conjecture. A preventive measure may be taken only if the risk appears nevertheless to be adequately backed up by scientific data available at the time the measure is taken.

23. Moreover, the document entitled '*Communication from the Commission on the Precautionary Principle*' (2000) provides useful guidance in relation to the application of the Precautionary Principle in relation to European sites issues. Paragraph 6 sets out the six key matters for consideration when applying the Precautionary Principle. Paragraph 6 states:

"Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:

- *proportional to the chosen level of protection;*
- *non-discriminatory in their application;*
- *consistent with similar measures already taken;*
- *based on an examination of the potential benefits and costs of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis);*
- *subject to review, in the light of new scientific data; and*
- *capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment."*

24. Under these bulleted points, the guidance gives specific definitions in relation to each of the above at pages 4 and 5, with further detail provided within section 6.

25. In accordance with the Communication from the Commission it is clear that when they are deemed necessary, risk reduction measures should be proportionate and must not aim at zero risk. It is stated at section 6.3.1 of the Communication from the Commission that:

"The measures envisaged must make it possible to achieve the appropriate level of protection. Measures based on the precautionary principle must not be disproportionate to the desired level of protection and must not aim at zero risk, something which rarely exists. However, in certain cases, an incomplete assessment of the risk may considerably limit the number of options available to the risk managers."

26. With reference to not aiming "*at zero risk*" in applying the precautionary principle, the judgement of the Appeal Court in the case of Morge v Hampshire County Council [2010] EWCA Civ 608 is relevant. Lord Justice Ward considered what the level of disturbance was required in the Article 12(1)(b) and at paragraph 35 he described the level or risk of threatened habitat and species stating that:

"… It must be certain, that is to say, identifiable. It must be real, not fanciful."

27. This is understood to mean that for the level of risk to be real and identifiable, it must be based upon objective evidence to substantiate the risk. Ecology Solutions

does of course note the legal tests as set out within the case law described above and the need for certainty as to the absence of effects (for example). However, as part of the assessment process, in considering the available scientific information, it is necessary to assess real (identifiable) risks as opposed to those of a purely hypothetical nature with no scientific foundation.

28. It is acknowledged that this case went before the Supreme Court [2011], where Lord Brown was not in agreement with all parts of Lord Justice Wards' judgement; nevertheless, he did not expressly disagree with paragraph 35.

UK Guidance

Internal Guidance to decisions on 'Site Integrity': A framework for provision of advice to competent authorities (English Nature, 2004)

29. Natural England (English Nature at the time) produced an internal guidance document on the provision of advice to competent authorities regarding the concept of 'site integrity' in undertaking an Appropriate Assessment.

30. This guidance sets out a definition for integrity. It states that integrity is considered at the site level and gives the following definition (taken from PPG9, subsequently replaced by the NPPF):

"The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and / or levels of populations of the species for which it was classified".

31. Integrity is further defined within section 3.0 where it is stated that:

"In a dynamic context 'integrity' can be considered as a site having a sense of resilience and ability to evolve in ways that are favourable to conservation."

32. The need to maintain or restore the designated site to favourable conservation status is dealt with in the final paragraph of section 3.0. Natural England quotes guidance issued jointly by the Environment Agency, English Nature and Countryside Council for Wales.

33. The guidance provides a checklist within section 4.1, for assessing the likelihood of an adverse effect on integrity occurring as a result of the proposed plan / project. It is stated that if the answer to all of the questions posed within the checklist is "yes" then it is reasonable to conclude that there will be no adverse effect upon integrity. In the event that one or more of the answers is no, then the guidance suggests a series of further site-specific factors, listed at 4.2 – 4.7.

Common Standards Monitoring (JNCC, 2004)

34. Common Standards Monitoring (CSM) is a means by which condition objectives for habitats, species, or other features of designated sites (e.g. SSSIs and SPAs) are set based on key attributes of the features.

35. JNCC and the country Conservation Agencies (e.g. Natural England) developed guidance on the setting and assessing of condition objectives, as required under the Birds and Habitats Directives and set out a framework for this in 1999. This framework is provided in the form of CSM guidance which comprises a suite of documents including an '*Introduction to the Guidance Manual on Common*

Standards Monitoring' and several species / habitat specific documents. The Guidance Manual covers various relevant concepts and terms. It also provides a background to the setting of conservation objectives and sets out the desired approach to setting targets, monitoring, management and reporting on conservation measures in designated sites.

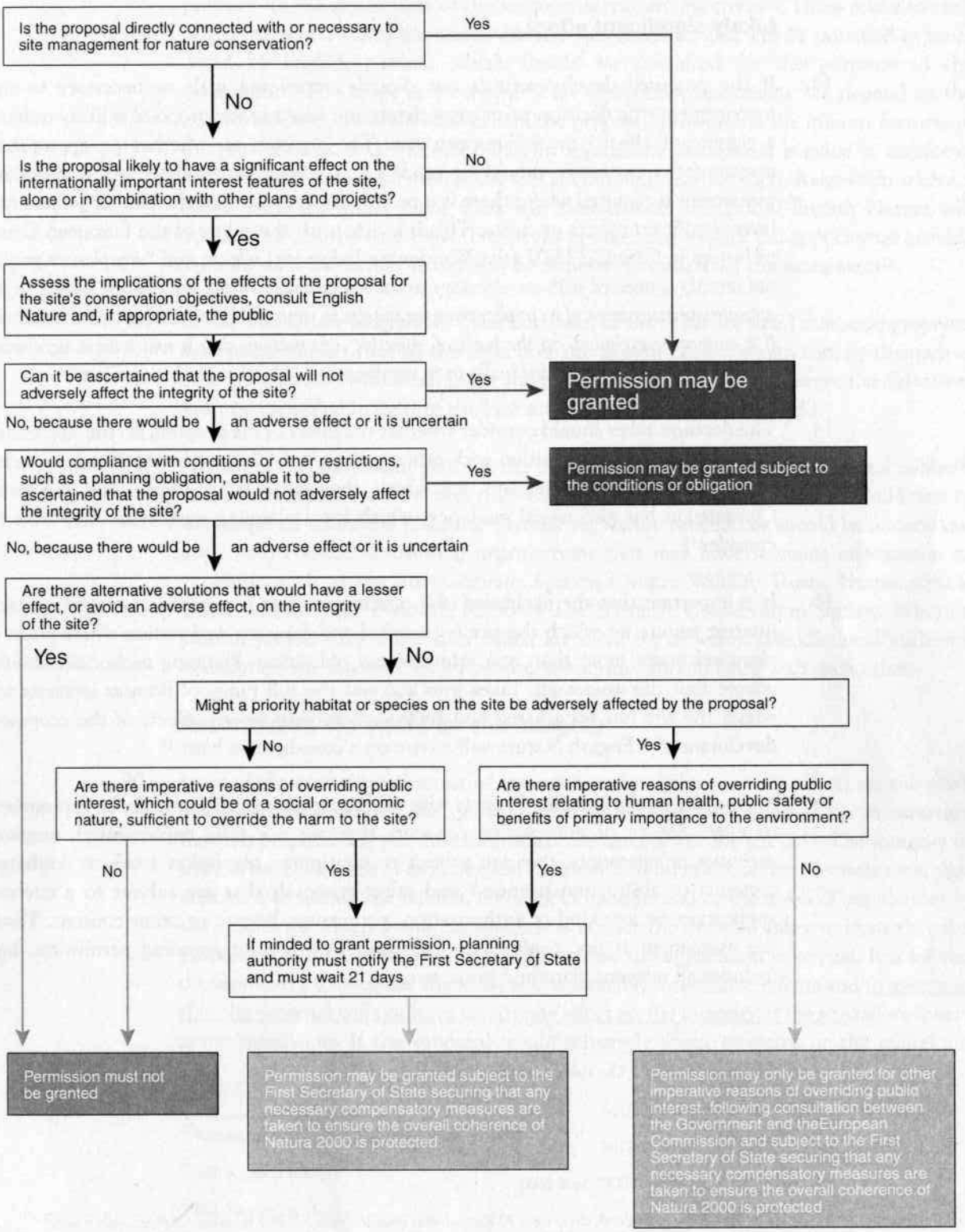
36. The Guidance Manual and CSM guidance for individual site attributes (e.g. its bird or reptile interest) set out specific criteria regarding the identification of interest features, targets and methods of assessment. There is in-built flexibility and allowances for 'judgements to be made' when assessing, for example, favourable condition.

37. It is understood that Natural England applies the CSM approach to European designated sites through an assessment of the SSSI unit condition. This is undertaken on a cycle of approximately six years. The assessment does not relate to the Conservation Objectives of the European site but provides a tool for tailoring future management of the SSSI such that favourable condition of the interest features can be maintained or restored as appropriate.

ANNEX 10

Flow Diagram from ODPM / Defra Circular

Figure 1: **Consideration of development proposals affecting Internationally Designated Nature Conservation Sites**



ANNEX 11

Dorset Heathlands SPA Citation and Natura 2000
Standard Data Form

EC Directive 79/409 on the Conservation of Wild Birds: Special Protection Area (SPA)

Name: Dorset Heathlands

Unitary Authority/County: Dorset County Council, Hampshire County Council, Poole Borough Unitary Authority and Bournemouth Unitary Authority.

Consultation proposal: The Dorset Heathlands comprises a suite of heathland sites at the western edge of the Hampshire Basin. The SPA encompasses the fragmented remains of once extensive tracts of dry heath, wet heath and valley mire which were originally only divided by river valleys, and extend across the sands, gravels, clays and peatlands of this area. The 40 SSSIs listed on page 2 have been recommended as a Special Protection Area because of the European ornithological importance of the area.

Status: SPA classified on 1st October 1998.

Boundary of SPA: SPA boundary is coincident with the following SSSI boundaries; Blackhill Heath, Brenscombe Heaths, Ebblake Bog, Hartland Moor, Lions Hill, Oakers Bog, Town Common, Turners Puddle Heath, and Worgret Heath. The remaining SPA boundary includes parts of the other 31 SSSIs listed on page 2. See SPA map for further clarification.

European ornithological importance of the SPA
Dorset Heathlands SPA is of European importance because:

a) The site qualifies under article 4.1 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain population of 5 species listed in Annex 1 in any season:

Annex 1 species	Estimated population	% GB	Date of survey
Dartford warbler *Sylvia undata*	418-606 pairs	37.9 % GB*	1991/92 & 1994
Nightjar *Caprimulgus europeaus*	436+ pairs	12.8 % GB	1991/92
Woodlark *Lullula arborea*	41-56 pairs	9.3 % GB*	1991/92 & 1994
Hen harrier *Circus cyaneus*	20[I]	3.2 % GB	1991/92
Merlin *Falco columbarius*	15[I]	1.2 % GB	1991/92

[I] = Individuals

*the GB % for these two species are based on the 1994 national population and are therefore only applied to the 1994 survey figures.

Dartford warbler and woodlark figures from: RSPB, 1994. 1994 *Dartford warbler/woodlark survey*. Unpublished report. RSPB. Sandy.
RSPB, Dorset Bird Club & Nature Conservancy Council for England records 1991-1992.
Russell, T.A. 1991. Survey of rare birds on heathland SSSI's. Nature Conservancy for England, Dorset.

Nightjar figures from: BTO/RSPB, 1992. *Nightjar data set 1992*. Unpublished report.
RSPB, Dorset Bird Club & Nature Conservancy Council for England records 1991-1992.
Russell, T.A. 1991. Survey of rare birds on heathland SSSI's. Nature Conservancy for England, Dorset.

Hen Harrier and merlin figures from: RSPB, Dorset Bird Club & Nature Conservancy Council for England records 1991-1992.

Component SSSIs within the SPA boundary: The following SSSIs are include, either wholly or in part, in the Dorset Heathlands SPA

Arne SSSI
Blackhill Heath SSSI
Blue Pool & Norden Heaths SSSI
Bourne Valley SSSI
Brenscombe Heaths SSSI
Canford Heath SSSI
Christchurch Harbour SSSI
Corfe & Barrow Hills SSSI
Cranborne Common SSSI
Ebblake Bog SSSI
Ferndown Common SSSI
Ham Common SSSI
Hartland Moor SSSI
Holt & West Moors Heaths SSSI
Holton and Sandford Heaths SSSI
Horton Common SSSI
Hurn Common SSSI
Lions Hill SSSI
Matchams SSSI
Morden Bog & Hyde Heaths SSSI
Norden SSSI
Oakers Bog SSSI
Parley Common SSSI
Poole Harbour SSSI
Povington & Grange Heaths SSSI
Rempstone Heaths SSSI
Slop Bog & Uddens Heaths SSSI
Stoborough & Creech Heaths SSSI
Stokeford Heaths SSSI
Studland & Godlingston Heaths SSSI
Thrashers Heath SSSI
The Moors SSSI
Town Common SSSI
Turbary & Kinson Commons SSSI
Turners Puddle Heath SSSI
Upton Heath SSSI
Verwood Heaths SSSI
Warmwell Heath SSSI
Winfrith Heath SSSI
Worgret Heath SSSI

This citation / map relates to a site entered in the Register of European sites for Great Britain.
Register reference number UK9010012
Date of registration 18 DEC 1998
Signed .....
on behalf of the Secretary of State for the Environment

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9010101**
SITENAME	**Dorset Heathlands**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
A	UK9010101

1.3 Site name

Dorset Heathlands

1.4 First Compilation date	1.5 Update date
1998-10	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1998-10
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.159166667	50.65

2.2 Area [ha]:

8184.96

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A224	Caprimulgus europaeus			r	436	436	p		G	B		C	
B	A082	Circus cyaneus			w	20	20	i		G	B		C	
B	A098	Falco columbarius			w	15	15	i		G	C		C	
B	A246	Lullula arborea			r	41	41	p		G	B		B	
B	A302	Sylvia undata			r	418	418	p		G	A		B	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)

- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N16	1.0
N07	6.0
N06	1.0
N17	4.0
N09	4.0
N04	1.0
N08	83.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: acidic,clay,sedimentary,sand,peat,nutrient-poor 2 Terrestrial: Geomorphology and landscape: valley,lowland,coastal,slope

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: Caprimulgus europaeus at least 12.8% of the GB breeding population Two year mean, 1991-1992 Lullula arborea at least 6.8% of the GB breeding population Three count mean, 1991-2 & 1994 Sylvia undata at least 26.1% of the GB breeding population Three count mean, 1991-2 & 1994 Over winter the area regularly supports: Circus cyaneus 2.7% of the GB population Count, as at 1991/2 Falco columbarius 1.2% of the GB population Count, as at 1991/2

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	G01		I
H	I01		B
H	A04		I
H	J02		B
H	K02		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	D05		I
H	D05		I
H	G03		I
H	A04		I
H	A02		I
H	B02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	18.9	UK04	100.0		

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 12

European Site Conservation Objectives for Dorset Heathlands SPA

European Site Conservation Objectives for Dorset Heathlands Special Protection Area Site Code: UK9010101

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A082 *Circus cyaneus*; Hen harrier (Non-breeding)
A098 *Falco columbarius*; Merlin (Non-breeding)
A224 *Caprimulgus europaeus*; European nightjar (Breeding)
A246 *Lullula arborea*; Woodlark (Breeding)
A302 *Sylvia undata*; Dartford warbler (Breeding)

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

ANNEX 13

European Site Conservation Objectives:
Supplementary Advice for Dorset Heathlands SPA

European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

Dorset Heathlands
Special Protection Area (SPA)
Site Code: UK9010101

Date of Publication: February 2019

About this document

This document provides Natural England's supplementary advice for the European Site Conservation Objectives relating to Dorset Heathlands SPA.

This advice should therefore be read together with the SPA Conservation Objectives available here.

Where this site overlaps with other European Sites, you should also refer to the separate European Site Conservation Objectives and Supplementary Advice (where available) provided for those sites.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	Dorset Heathlands Special Protection Area (SPA)
Location	Dorset, Hampshire
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 October 1998
Qualifying Features	See section below
Designation Area	8184.96ha
Designation Changes	N/A
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Arne SSSI, **Black Hill Heath SSSI**, Blue Pool and Norden Heaths SSSI, Bourne Valley SSSI, **Brenscombe Heath SSSI**, Canford Heath SSSI, Christchurch Harbour SSSI, Corfe & Barrow Hills SSSI, Cranborne Common SSSI, **Ebblake Bog SSSI**, Ferndown Common SSSI, Ham Common SSSI. **Hartland Moor SSSI**. Holt and West Moors Heaths SSSI, Holton and Sandford Heaths SSSI, Horton Common SSSI, Hurn Common SSSI, **Lions Hill SSSI**, Morden Bog and Hyde Heath SSSI, **Oakers Bog SSSI**, Parley Common SSSI, Poole Harbour SSSI, Povington and Grange Heaths SSSI, Rempstone Heaths SSSI, Slop Bog and Uddens Heath SSSI, Stoborough & Creech Heaths SSSI, Stokeford Heaths SSSI, Studland & Godlingston Heaths SSSI, The Moors SSSI, Thrasher's Heath SSSI, **Town Common SSSI**, Turbary and Kinson Commons SSSI, **Turners Puddle Heath SSSI**, Upton Heath SSSI, Verwood Heaths SSSI, Warmwell Heath SSSI, Winfrith Heath SSSI, **Worgret Heath SSSI** The boundary of the SPA is coincident with the SSSIs listed in **bold** above. For the remaining SSSIs, only parts of their area fall within the SPA boundary (see SPA map for further clarification); activities on this wider SSSI land may impact on the SPA features.
Relationship with other European or International Site designations	The Dorset Heathlands SPA overlaps with both the Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC and Dorset Heaths SAC as well as the Dorset Heathlands Ramsar site. At Town Common the Dorset Heathlands SPA is adjacent to part of the Avon Valley SPA and Ramsar site. In the areas around Poole Harbour the SPA also adjoins Poole Harbour SPA and Ramsar site. Separate European Site Conservation Objectives for the nearby sites can be found at: • Dorset Heaths SAC

- Dorset Heathlands (Purbeck and Wareham) and Studland Dunes SAC
- Poole Harbour SPA
- Avon Valley SPA

Site background and geography

The site falls within the Dorset Heaths Natural Character Area (NCA Profile 135), cover an extensive complex of heaths that form one of the best developed and most significant tracts of heathland in the lowlands of the UK. There are fine transitions between dry heath, wet heath and acid mire vegetation types, as well as a high diversity of associated habitats such as acid grassland, sand dune, acid oak woods, bog woodland, base-rich mires, fen-meadow, reedswamp and small water bodies.

About the qualifying features of the SPA

The following section gives you additional, site-specific information about this SPA's qualifying features. These are the individual species of wild birds listed on Annex I of the European Wild Birds Directive, and/or the individual regularly-occurring migratory species, and/or the assemblages (groups of different species occurring together) of wild birds for which the SPA was classified for.

- **Qualifying individual species listed in Annex I of the Wild Birds Directive (Article 4.1)**

During the breeding season the SPA regularly supports:

- A302 Dartford Warbler (*Sylvia undata)* – 418 - 606 pairs representing at least 37.9 % of the breeding population in Great Britain

- A224 Nightjar (*Caprimulgus europaeus) – 436+ pairs representing at least 12.8% of the breeding population in Great Britain*

- A246 Woodlark (*Lullula arborea)* – 41-56 pairs representing at least 9.3% of the breeding population in Great Britain

During the non-breeding season the SPA regularly supports:

- A082 Hen Harrier (*Circus cyaneus)* - 20 individuals representing at least 3.2% of the wintering population in Great Britain

- A098 Merlin (*Falco columbarius*) – 15 individuals representing at least 1.2% of the wintering population in Great Britain*,*

- **Qualifying individual species not listed in Annex I of the Wild Birds Directive (Article 4.2)**

N/A

- **Qualifying assemblage of species (Article 4.2)**

N/A

Site-specific seasonality of SPA features

The table below highlights in grey those months in which significant numbers of each mobile qualifying feature are most likely to be present at the SPA during a typical calendar year. This table is provided as a general guide only.

Unless otherwise indicated, the months shown below are primarily based on information relating to the general months of occurrence of the feature in the UK. Where site-based evidence is available and has been used to indicate below that significant numbers of the feature are typically present at this SPA outside of the general period, the site-specific references have been added to indicate this.

Applicants considering projects and plans scheduled in the periods highlighted in grey would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration of mitigation to minimise impacts to qualifying bird features during the principal periods of site usage by those features. The months which are *not* highlighted in grey are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical years. Furthermore, in any given year, features may occur in significant numbers in months in which typically they do not. Thus, applicants should not conclude that projects or plans scheduled in months not highlighted in grey cannot have a significant effect on the features. There may be a lower likelihood of significant effects in those months which nonetheless will also require prior consideration.

Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional site-based surveys may be required.

Feature	Season	Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site-specific references where available
Dartford Warbler	*Breeding*	*Summer*													
	Non-breeding	*Winter*													
Hen Harrier	*Non-breeding*	*Winter*													
Merlin	*Non-breeding*	*Winter*													
Nightjar	*Breeding*														
Woodlark	*Breeding*														
	Non - breeding														
Other Annex 1 breeding bird species present but not an SPA feature															
Hobby	*Breeding*	*Summer*													

Guide to terms:
Breeding – present on a site during the normal breeding period for that species
Non-breeding - present on a site outside of the normal breeding period for that species (includes passage and winter periods).
Summer – the period generally from April to July inclusive
Passage - the periods during the autumn and spring when migratory birds are moving between breeding areas and wintering areas. These periods are not strictly defined but generally include the months of July – October inclusive (autumn passage) and March – April inclusive (spring passage).
Winter - the period generally from November to February inclusive.

Table 1: Supplementary Advice for Qualifying Features: A082. *Circus cyaneus*; Hen harrier (Non-breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Non-breeding population	**Population abundance**	Restore the size of the non-breeding population to a level which is above 20 individual birds whilst avoiding deterioration from its current level as indicated by the latest count of roosting birds	This objective concerns the contribution of the site's population to wider local, national and bio-geographic populations. The target-value given for the abundance of this feature is considered to be the minimum standard for conservation/restoration measures to achieve although it is recognised that factors in other parts of the species range, particularly breeding sites, are likely to influence the number of wintering birds. This minimum-value may be revised where there is evidence to show that a population's abundance has significantly changed as a result of natural factors or management measures. Given the likely fluctuations in numbers between years, any impact-assessments should take into account both the current abundance of the population in the areas of the site affected (as derived from the latest known or estimated level established using the best available data) and previous records. Thus where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the capacity of the site to support a larger population should also be taken into account. Refer to Dobson and Carrington-Cotton (2012) and Clarke and Watson (1997) for count methodology.	Dobson A & Carrington-Cotton A 2012. Hen Harrier and Merlin Survey of southern SPAs/SSSIs. BTO Research Report No. 623 Clarke, R. & Watson D. (1997) The Hen Harrier Winter Roost Survey. Thirteen winters' data reveal serious declines. *The Raptor*, 1996/97, 41-45.
Supporting habitat (both within and outside the SPA): extent and distribution	**Extent and distribution of supporting non-breeding habitat**	Restore the extent and distribution of suitable habitat to correspond with the historical distribution (either within or outside the site boundary) of these habitats, supporting the feature for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding)	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. Restoration of open heathland is required on those areas where it has declined compared with the historic open heathland extent (usually through invasion by trees and scrub) and where this restoration is readily achievable.	1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (both within and outside the SPA): function/ supporting process	**Air quality**	Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The structure and function of habitats which support this SPA feature may be sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats. Critical Loads and Levels are thresholds below which such harmful effects on sensitive UK habitats will not occur to a noteworthy level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development.	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk). NATURAL ENGLAND, 2014. Site Improvement Plan – Dorset Heaths
Supporting habitat (both within and outside the SPA): function/ supporting process	**Connectivity with supporting habitats**	Maintain the safe passage of birds moving between nesting, feeding and/or roosting areas	The ability of birds to safely and successfully move to and from feeding and roosting areas is critical to adult fitness and survival. This target will apply within the site boundary and where birds regularly move to and from off-site habitat, for example hen harriers regularly forage around of Poole Harbour. During winter, Hen Harriers form communal roosts at night. These can hold significant numbers of individuals and in the Dorset Heaths roosts are generally found in heathland or mire. Hen harriers are birds of open landscapes, hunting low over the ground, circling areas several times and surprising and flushing their prey. They usually avoid closed-canopy woodland and conurbations.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Restore management or other measures (whether within and/or outside the site boundary as appropriate) necessary to Restore the structure, function and/or the supporting processes associated with the feature and its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore the habitats that support hen harrier at this site. Further details about the necessary conservation measures for this site can be found within supporting documents such as Natura 2000 Site Improvement Plan (SIP), Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Whilst most of the area of the SPA enjoys active conservation management there remain a few areas where this does not take place.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments NATURAL ENGLAND, 2014. Site Improvement Plan – Dorset Heaths
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain the distribution, abundance and availability of key prey items at preferred prey sizes (pipits to gamebirds; voles to young rabbit size).	The availability of an abundant food supply is critically important for adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.	
Supporting habitat (both within and outside the SPA): minimising disturbance	**Minimising disturbance caused by human activity**	Reduce where necessary the frequency, duration and/or intensity of disturbance affecting roosting, foraging and feeding birds so that the feature is not significantly disturbed	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can result in changes to feeding or roosting behaviour, (both within or outside the designated site boundary). This may undermine, feeding and/or roosting, and may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. The location and size of hen harrier roosts is changeable. Old roosts can be abandoned and new ones established. Different roosts will vary in their vulnerability to disturbance depending on number of factors associated with their location. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures. Disturbance to hen harrier winter roosts was reported as a threat to 31% of these	R. Clarke & D. Watson (1990) The Hen Harrier *Circus cyaneus* Winter Roost Survey in Britain and Ireland, Bird Study, 37:2, 84-100. Underhill-Day, J. C. (2005). A literature review of urban effects on lowland heaths and their wildlife. English Nature Research Report no. 623.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			roosts (Clarke and Watson 1990) and there has been an incident in Dorset where a roost was abandoned after disturbance was observed although whether this was the cause is not known. Without avoidance measures, the cumulative effect of new housing would be likely to lead to an increase in urban pressures (e.g. an increase in wildfires, damaging recreational uses, introduction of incompatible plants and animals, loss of vegetation and soil erosion and disturbance by humans and their pets) on parts of the SPA with possible harmful effects to hen harrier roosts**.** A strategic approach to avoiding and mitigating these potential impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006, The Dorset Heathlands Planning Framework Supplementary Planning Document 2015 – 2020 (SPD) sets out the detailed approach to this issue.	
Supporting habitat (both within and outside the SPA): structure	**Vegetation characteristics**	Maintain an optimal mix of vegetation (flat or gently sloping areas with wet rush, heather, cotton grass, *Juncus* or other wetland vegetation) in areas used for roosting.	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful roosting. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The attribute relating to **Water quality / quantity** has been removed as it is considered not relevant for this feature on this site.				

Table 2: Supplementary Advice for Qualifying Features: A098. *Falco columbarius*; Merlin (Non-breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Non-breeding population	**Population abundance**	Restore the size of the non-breeding population to a level which is above 15 individuals whilst avoiding deterioration from its current level as indicated by the latest count of roosting birds.	This objective concerns the contribution of the site's population to wider local, national and bio-geographic populations. The target-value given for the abundance of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve although it is recognised that factors in other parts of the species range, particularly breeding sites, are likely to influence the number of wintering birds. This minimum-value may be revised where there is evidence to show that a population's abundance has significantly changed as a result of natural factors or management measures. Given the likely fluctuations in numbers between years, any impact-assessments should take into account both the current abundance of the population in the areas of the site affected (as derived from the latest known or estimated level established using the best available data) and previous records. Thus where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the capacity of the site to support a larger population should also be taken into account. Refer to Dobson and Carrington-Cotton (2012) for count methodology.	Dobson A & Carrington-Cotton A 2012. Hen Harrier and Merlin Survey of southern SPAs/SSSIs. BTO Research Report No. 623
Supporting habitat (both within and outside the SPA): disturbance	**Minimising disturbance caused by human activity**	Reduce where necessary the frequency, duration and/or intensity of disturbance affecting roosting, foraging and feeding birds so that the feature is not significantly disturbed.	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can result in changes to feeding or roosting behaviour, (both within or outside the designated site boundary). This may undermine, feeding and/or roosting, and may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. The location of merlin roosts is changeable. Old roosts can be abandoned and new ones established. Different roosts will vary	Underhill-Day, J. C. (2005). A literature review of urban effects on lowland heaths and their wildlife. English Nature Research Report no. 623.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			in their vulnerability to disturbance depending on number of factors associated with their location. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures. Without avoidance measures, the cumulative effect of new housing would be likely to lead to an increase in urban pressures (e.g. an increase in wildfires, damaging recreational uses, introduction of incompatible plants and animals, loss of vegetation and soil erosion and disturbance by humans and their pets) on parts of the SPA with possible harmful effects to merlin roosts**.** A strategic approach to avoiding and mitigating these potential impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006, The Dorset Heathlands Planning Framework Supplementary Planning Document 2015 – 2020 (SPD) sets out the detailed approach to this issue.	
Supporting habitat (both within and outside the SPA): extent and distribution	**Extent and distribution of supporting non-breeding habitat**	Restore the extent and distribution of suitable habitat to correspond with the historical distribution (either within or outside the site boundary) of these habitats, supporting the feature for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding)	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. Restoration of open heathland is required on those areas where it has declined compared with the historic open heathland extent (usually through invasion by trees and scrub) and where this restoration is readily achievable.	1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Supporting habitat (both within and outside the SPA): function/ supporting	**Air quality**	Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1.	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
process				
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Restore management or other measures (whether within and/or outside the site boundary as appropriate) necessary to Restore the structure, function and/or the supporting processes associated with the feature and its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore the habitats that support merlin at this site. Further details about the necessary conservation measures for this site will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan (SIP), Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Whilst most of the area of the SPA enjoys active conservation management there remain a few areas where this does not take place.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments NATURAL ENGLAND, 2014. Site Improvement Plan – Dorset Heaths
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain overall availability of small birds.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The attribute relating to **Water quality / quantity** has been removed as it is considered not relevant for this feature on this site.				

Table 3: Supplementary Advice for Qualifying Features: A224. *Caprimulgus europaeus*; European nightjar (Breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Breeding population	**Population abundance**	Restore the size of the breeding population above 436 churring males whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	This objective concerns the contribution of the site's population to wider local, national and bio-geographic populations. The nightjar population is smaller than it might be because of a number of factors. Some parts of the site remain unmanaged and open heathland has been invaded by trees and scrub. In other areas the presence of nearby urban areas is linked to a lower population density of breeding birds (Liley and Clarke 2003, Liley et al 2006). Restoration of open heathland is required on those areas that have deteriorated (usually through tree and scrub invasion) and where heathland (or associated habitats such as acid grassland) restoration is readily achievable (taking into account geology, soils and land use history). Aerial photographic coverage of the site from 1946 and 1972, together with old maps (particularly 2nd edition ordnance survey 1888-1913), provide a good reference in this respect showing the extent, distribution and pattern of dry and wet heathland, mire/fen and grassland and its relationship to woodland. In these circumstances the target-value given for the abundance of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's size has significantly changed as a result of natural factors or management measures. Nightjar numbers rose steadily in the early 1990s, peaking in 1996. Numbers remained relatively stable through to 2000, after which a general decline (with some marked fluctuations) is evident, with numbers dropping to a similar level to 1991. Since 2010 numbers have risen steadily. Overall the trends indicate no significant increase or decrease since 1991. Data suggests considerable variation between sites in the urban conurbation and significant differences between sites in Purbeck compared to those further east. Sites in Purbeck have increased in the period 2008-2013 whereas sites to the east have seen little	Conway G J, Kirby J, Henderson I G, & Frith R. (2010). Breeding Nightjar *Caprimulgus europaeus* surveys of selected SSSIs in Southern England 2010 BTO Research Report no 570 for Natural England LILEY, D., & CLARKE, R.T. 2003. The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation,* 114, 219-230. Liley, D., Clarke, R.T., Mallord, J.W. & Bullock, J.M. (2006) *The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths*. Natural England / Footprint Ecology. Liley D and Fearnley, H. (2014) Trends in Nightjar, Woodlark and Dartford Warbler on the Dorset Heaths, 1991-2013. Footprint Ecology Conway, G., Wotton, S., Henderson, I., Langston, R., Drewitt, A. & Currie, F. (2007) The status and distribution of

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			change.	breeding European Nightjars *Caprimulgus europaeus* in the UK in 2004. *Bird Study*, 54, 98-111. C. J. Cadbury (1981) Nightjar census methods, Bird Study, 28:1, 1-4
Supporting habitat (both within and outside the SPA): extent and distribution	**Extent and distribution of supporting breeding habitat**	Restore the extent, distribution and availability of suitable breeding habitat, to correspond with the historical distribution, supporting the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding):	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. Restoration of open heathland is required on those areas where it has declined compared with the historic open heathland extent (usually through invasion by trees and scrub) and where this restoration is readily achievable. Aerial photographic coverage of the site from 1946 and 1972, together with old maps (particularly 2nd edition ordnance survey 1888-1913), provide a good reference in this respect showing the extent, distribution and pattern of dry and wet heathland, mire/fen and grassland and its relationship to woodland. A large number of nightjar territories occur outside the SPA, mainly in areas of forestry plantation on former heathland where the SPA picks out only the areas of permanent open heathland.	1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Supporting habitat (both within and outside the SPA): function/ supporting process	**Air quality**	Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1.	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting habitat (both within and outside the SPA): function/ supporting	**Connectivity with supporting habitats**	Maintain the safe passage of birds moving between nesting, feeding and/or roosting areas	The ability of nightjar to safely and successfully move to and from nesting, feeding and roosting areas is critical to their breeding success and to the adult fitness and survival. Nightjars are insectivorous, feeding primarily on moths and beetles. Nightjar regularly fly away from their nesting sites (up to 7km, Alexander and Cresswell 1990) using a variety of	Alexander, I., Cresswell, B., 1990. Foraging by Nightjars *Caprimulgus europaeus* away from their nesting areas. Ibis 132, 568–574.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
process			habitats other than heathland to forage although woodland and woodland edges are a preferred foraging habitat (Cresswell 1996). In urban areas undeveloped corridors may be important in maintaining connectivity between nesting and foraging areas since nightjar and not known to forage over urban areas. Development that might curtail this connectivity, such as urbanisation of an undeveloped corridor, must be assessed for their impact on the part of the SPA affected.	Cresswell, B., 1996. Nightjars—some aspects of their behaviour and conservation. British Wildlife 7, 297–304.
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Restore management or other measures (whether within and/or outside the site boundary as appropriate) necessary to restore the structure, function and/or the supporting processes associated with the feature and its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore the habitats that support hen harrier at this site. Further details about the necessary conservation measures for this site can be found within supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Whilst most of the area of the SPA enjoys active conservation management there remain a few areas where this does not take place. Habitat management should retain the open, mosaic structure of lowland wet and dry heath Active habitat management occurs on most of the area of the SPA; a few relatively small areas remain unmanaged and here restoration of management is required.	Liley, D., Richardson, D. & Davis, M. (2003) *Heathland Management by The Dorset Heathland Project, 1989 - 2001: The effectiveness of heathland management for key bird species.* RSPB. Dorset Heaths Site Improvement Plan, Natural England
Supporting habitat (both within and outside the SPA): function/ supporting process	**Extent and quality of supporting foraging habitats**	Maintain the extent and quality of key non heathland foraging habitats	The foraging range of nightjar is known to extend up to several kilometres from their nest sites and birds typically forage in non-heathland habitats (Alexander and Cresswell 1990) with a preference for deciduous woodland (Cresswell 1996). The density of nightjar in a heathland patch was positively correlated to the amount of surrounding woodland (Liley and Clarke 2003). Much of the woodland or associated habitat likely to be critical for foraging will occur outside the SPA. The objective is to maintain the foraging resource available to each breeding nightjar so full assessment of any proposals that may affect the extent of quality of foraging habitat is required.	Alexander, I., Cresswell, B., 1990. Foraging by Nightjars *Caprimulgus europaeus* away from their nesting areas. Ibis 132, 568–574. Cresswell, B., 1996. Nightjars—some aspects of their behaviour and conservation. British Wildlife 7, 297–304.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				LILEY, D., & CLARKE, R.T. 2003. The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation,* 114, 219-230.
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain the distribution, abundance and availability of key prey items (moths, beetles) at preferred prey sizes	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population. Nightjar are insectivorous, feeding primarily on moths and beetles. Aspects which might affect prey availability will include lighting, pest control, changes in land use and habitat management	
Supporting habitat (both within and outside the SPA): minimising disturbance	**Minimising disturbance caused by human activity**	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the feature is not significantly disturbed	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures.	Murison, G. (2002). The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. English Nature Research Report 483. English Nature, Peterborough. Liley, D., Clarke, R. T., Mallord, J. W., & Bullock, J. M. (2006) The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths. Unpublished report, Footprint Ecology / Natural England. © Natural England / Footprint Ecology Ltd.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Nightjar is a bird known to be sensitive to disturbance (Murison 2002, Liley et al 2006) Disturbance caused by human activity is particularly significant within parts of the Dorset Heathlands SPA because of its proximity to large urban areas. Without avoidance measures, the cumulative effect of new housing would be likely to lead to an increase in visitor numbers as well as urban pressures (e.g. an increase in wildfires, damaging recreational uses, introduction of incompatible plants and animals, loss of vegetation and soil erosion and disturbance by humans and their pets – Underhill-Day 2005) on parts of the SPA with negative effects on nightjar likely. A strategic approach to avoiding and mitigating these potential impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006, The Dorset Heathlands Planning Framework Supplementary Planning Document 2015 – 2020 (SPD) sets out the detailed approach to this issue.	
Supporting habitat (both within and outside the SPA): predation	**Predation**	Reduce predation and disturbance caused by native and non-native predators.	Breeding productivity (number of chicks per pair) and survival should be sustained at rates that maintain or restore the population density in each part of its range. Impacts to breeding productivity can result directly from predation of eggs, chicks, juveniles and adults, and also from significant disturbance. The presence of predators can influence bird behaviours, such as abandonment of nest sites or reduction of effective feeding. Both avian and mammalian predation of nightjar eggs has been recorded (Murison 2002, Dolman 2010). Urban development in the vicinity of heathland is likely to lead to changes in the density of some predators, (for example some urban areas have extremely high densities of foxes) and disturbance may also increase the vulnerability of eggs to predation (Murison 2002). Thus development that results in, for example, an increase the density of foxes, the number of domestic cats or avian egg predators such as carrion crows, on a part of the	Murison, G. (2002). The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. English Nature Research Report 483. English Nature, Peterborough. Dolman, P. (2010) *Woodlark and Nightjar Recreational Disturbance and Nest Predator Study 2008 and 2009. Final Report*. UEA.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			SPA may have an adverse effect on this feature and in this respect, without avoidance measures, the cumulative effect of new housing can be significant. A strategic approach to avoiding and mitigating this and other impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006,	
Supporting habitat (both within and outside the SPA): structure	**Landscape**	Restore the amount of open and unobstructed terrain, with short vegetation, within areas used for nesting and hunting.	Nightjar will also utilise areas of permanent open space and temporary clear-fell within rotationally managed plantation woodland and sparsely vegetated areas such as disused quarries. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat particularly foraging habitat.	.
Supporting habitat (both within and outside the SPA): structure	**Vegetation characteristics**	Maintain an optimal mix of vegetation to provide sufficient cover for nesting	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/ rearing/ concealment/ roosting. Nightjar show a preference for bare patches or areas of short vegetation with widely scattered tree where they are able to see predators approaching. These patches may be on open heathland and within open areas of plantation woodland. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.	
Supporting habitat (both within and outside the SPA): structure	**Vegetation characteristics**	Maintain the mix of vegetation (optimal conditions normally with some taller dwarf shrub vegetation mostly (20-60 cm) with frequent bare patches of >2 m2, and <50% tree/scrub cover overall; trees <2 m in height) throughout the nesting area.	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/rearing/concealment/roosting. Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.	
Version Control				

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Advice last updated: N/A			
Variations from national feature-framework of integrity-guidance: The attribute relating to **Water quality / quantity** has been removed as it is considered not relevant for this feature on this site.			

Table 4: Supplementary Advice for Qualifying Features: A246. *Lullula arborea*; Woodlark (Breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Breeding population	**Population abundance**	Restore the size of the breeding population to a level which is above 56 pairs, whilst avoiding deterioration from its current level.	This objective concerns the contribution of the site's population to wider local, national and bio-geographic populations. The target-value given for the abundance of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve. Woodlark numbers appear to have fluctuated markedly over the period 1991-2013 although the overall trend from 1991-2013 for woodlark shows no significant increase or decrease. In general the woodlark data involve low counts from many sites, the occurrence of woodlark on particular heathland sites seems to be linked to tree clearance, forestry management or other habitat management on those sites and is also probably linked to forestry management and amount of clear fell in the wider area, particularly nearby forest blocks. The objective is both to ensure that the overall population is maintained above the minimum population size (subject to natural population variations in response to climatic factors) and to seek to ensure that new developments or activities do not negatively affect the population on any part of the SPA. This minimum-value may be revised where there is evidence to show that a population's size has significantly changed as a result of natural factors or management measures. Given the likely fluctuations in numbers between years, any impact-assessments should take into account both the current abundance of the population in the areas of the site affected (as derived from the latest known or estimated level established using the best available data) and previous records. Thus where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the capacity of the site to support a larger population should also be taken into account.	Liley D and Fearnley, H. (2014) Trends in Nightjar, Woodlark and Dartford Warbler on the Dorset Heaths, 1991-2013. Footprint Ecology.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (both within and outside the SPA): extent and distribution	**Extent and distribution of supporting breeding habitat**	Restore the extent, distribution and availability of suitable breeding habitat, to correspond with the historical distribution, supporting the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding)	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection. Restoration of open heathland is required on those areas where it has declined compared with the historic open heathland extent (usually through invasion by trees and scrub) and where this restoration is readily achievable. Aerial photographic coverage of the site from 1946 and 1972, together with old maps (particularly 2nd edition ordnance survey 1888-1913), provide a good reference in this respect showing the extent, distribution and pattern of dry and wet heathland, mire/fen and grassland and its relationship to woodland. Within the heathland mosaic the extent and distribution of the more specialised supporting habitat used by woodlark will vary over time as a result of habitat management, succession, and ad-hoc events such as heath fires. The objective is to seek to ensure that there is no overall reduction in habitat availability whilst taking this variability into account. There should at all times be sufficient extent of the habitat in order to support the population despite the variations in habitat cover over the year. Bare ground should be adjacent to structurally diverse vegetation, favouring very short heather areas.	
Supporting habitat (both within and outside the SPA): function/ supporting process	**Connectivity with supporting habitats**	Maintain the safe passage of birds moving between nesting, feeding and/or roosting areas	The ability of the feature to safely and successfully move to and from nesting, feeding and roosting areas is critical to their breeding success and to the adult fitness and survival. This target will apply within the site boundary and where birds regularly move to and from off-site habitat where this is relevant. A significant number of woodlark territories occur outside the SPA, mostly on areas of rotational forestry or areas associated with sand and gravel quarries.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (both within and outside the SPA): function/ supporting process	**Air quality**	Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1.	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Restore management or other measures (whether within and/or outside the site boundary as appropriate) necessary to restore the structure, function and/or the supporting processes associated with the feature and its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore the habitats that support hen harrier at this site. Further details about the necessary conservation measures for this site can be found within supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Whilst most of the area of the SPA enjoys active conservation management there remain a few areas where this does not take place. At this site management should retain the open, mosaic structure of lowland wet and dry heath, Areas of bare or sparsely vegetated ground, sometimes maintained or created as a result of management, are an essential component of the habitat on a number of sites. . Habitat management should seek to ensure that the overall extent and continuity of supporting habitat is at least maintained. Some areas of plantation forestry outside the SPA should continue to be managed by providing rotational clear-fell, which can temporarily create suitable breeding habitat for up to 10 years.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments NATURAL ENGLAND, 2014. Site Improvement Plan – Dorset Heaths
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain the distribution, abundance and availability of key prey items (e.g. spiders, weevils, caterpillars) at preferred prey sizes.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population. Woodlarks need areas of short sparse, naturally developed turf with a high abundance of invertebrate prey on bare ground.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			This needs to be interspersed with tussocky vegetation for nesting.	
Supporting habitat (both within and outside the SPA): minimising disturbance	**Minimising disturbance caused by human activity**	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting, foraging, feeding, moulting and/or loafing birds so that the feature is not significantly disturbed	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures. Woodlark is a bird known to be sensitive to disturbance (Mallord et al 2007).with the precise effects being complex. Disturbance caused by human activity is particularly significant within parts of the Dorset Heathlands SPA because of its proximity to large urban areas. Without avoidance measures, the cumulative effect of new housing would be likely to lead to an increase in urban pressures (e.g. an increase in wildfires, damaging recreational uses, introduction of incompatible plants and animals, loss of vegetation and soil erosion and disturbance by humans and their pets – Underhill-Day 2005) on parts of the SPA with negative effects on woodlark likely. A strategic approach to avoiding and mitigating these potential impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006,	Mallord, J.W., Dolman, P., Brown, A. & Sutherland, W.J. (2007) Quantifying density dependence in a bird population using human disturbance. *Oecologia*, 153, 49-56. Underhill-Day, J. C. (2005). A literature review of urban effects on lowland heaths and their wildlife. English Nature Research Report no. 623.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			The Dorset Heathlands Planning Framework Supplementary Planning Document 2015 – 2020 (SPD) sets out the detailed approach to this issue.	
Supporting habitat (both within and outside the SPA): predation	**Predation**	Reduce predation and disturbance caused by native and non-native predators.	Breeding productivity (number of chicks per pair) and survival should be sustained at rates that maintain or restore the population density in each part of its range. Impacts to breeding productivity can result directly from predation of eggs, chicks, juveniles and adults, and also from significant disturbance. The presence of predators can influence bird behaviours, such as abandonment of nest sites or reduction of effective feeding. Significant predation of woodlark eggs and chicks by foxes has been recorded by Dolman (2010) and in an unpublished study on the Thames Basin Heaths by J.Eyre. Urban development in the vicinity of heathland is likely to lead to changes in the density of some predators, (for example some urban areas have extremely high densities of foxes). Predation by a cat was also recorded by Dolman. Post fledgling losses of woodlark were high although causes were not identified. Thus development that results in an increase the density of foxes or the number of domestic cats on a part of the SPA may have an adverse effect on this feature and in this respect, without avoidance measures, the cumulative effect of new housing can be significant. A strategic approach to avoiding and mitigating this and other impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006,	Dolman, P. (2010) *Woodlark and Nightjar Recreational Disturbance and Nest Predator Study 2008 and 2009. Final Report*. UEA.
Supporting habitat (both within and outside the SPA):	**Landscape**	Restore open and unobstructed terrain, typically within at least 0.2 km of nesting areas, with no increase in tall (>0.2 m) vegetation cover to >50% of the	This feature is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
structure		site overall.	displaying behaviour. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat. Woodlark often utilise land adjacent to heathland which is outside the SPA boundary for feeding, including areas of grassland, arable fields and golf courses. Woodlark will also utilise open areas, wide rides and fire breaks within plantations. Habitat connectivity is important for this species and measures – heathland restoration, mainly outside the SPA - are needed that reverse the past fragmentation of the Dorset heathlands.	
Supporting habitat (both within and outside the SPA): structure	**Vegetation characteristics**	Maintain optimal mix of vegetation to provide sufficient cover for nesting and more open, prey rich, areas for hunting.	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/rearing/concealment/roosting. Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. The short and sparse heath vegetation favoured by woodlark occurs patchily within the SPA and may change location as a result of management measures or heath fires. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.	
Supporting habitat (both within and outside the SPA): structure	**Vegetation characteristics**	Maintain the mix of trees, ground vegetation and bare ground (including frequency of bare patches of <0.5 ha within mosaic of short (<5 cm) to medium (10-20 cm) ground vegetation, and small clumps of shrubs or trees scattered throughout nesting and feeding areas.	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/ rearing/ concealment/ roosting and/or displaying. Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The attribute relating to **Water quality / quantity** has been removed as it is considered not relevant for this feature on this site.				

Table 5: Supplementary Advice for Qualifying Features: A302. *Sylvia undata*; Dartford Warbler (Breeding)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Breeding population	**Population abundance**	Restore the size of the breeding population to a level which is above 606 pairs, whilst avoiding deterioration from its current level.	This objective concerns the contribution of the site's population to wider local, national and bio-geographic populations. The target-value given for the abundance of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve although it is recognised that populations can decline after severe winter weather (Bibby 1977, 1979); it can take several years for recovery to take place and these fluctuations need to be taken into account. Dartford warbler numbers rose in the late 1990s, peaking in 2000 and then they remained relatively high until there was a marked decline from 2009, following a series of particularly harsh winters. (Liley and Fearnley 2014). The objective is therefore both to ensure that the overall population is maintained above the minimum population size (subject to natural population variations in response to climatic factors) and to seek to ensure that new developments or activities do not negatively affect the population on any part of the SPA. This minimum-value may be revised where there is evidence to show that a population's size has significantly changed as a result of natural factors or management measures. Given the likely fluctuations in numbers between years, any impact-assessments should take into account both the current abundance of the population in the areas of the site affected (as derived from the latest known or estimated level established using the best available data) and previous records. Thus where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the capacity of the site to support a larger population should also be taken into account.	[Bibby, C.J. (1977) *Ecology of the Dartford Warbler Sylvia Undata (Boddaert) in Relation to Its Conservation in Britain*. PhD thesis, Council for national Academic Awards. Bibby, C.J. (1979) Conservation of the Dartford Warbler on English Lowland heaths: a review. *Biological Conservation*, 13, 299 – 307. Liley D and Fearnley, H. (2014) Trends in Nightjar, Woodlark and Dartford Warbler on the Dorset Heaths, 1991-2013. Footprint Ecology
Supporting habitat (both within	**Minimising disturbance caused by**	Reduce the frequency, duration and/or intensity of disturbance affecting nesting, roosting,	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the	Murison, G. (2007) *The Impact of Human Disturbance, Urbanisation*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
and outside the SPA): disturbance	**human activity**	foraging, feeding, moulting and/or loafing birds so that the feature is not significantly disturbed	long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures. Dartford Warbler is a bird known to be sensitive to disturbance. Disturbance caused by human activity is particularly significant within parts of the Dorset Heathlands SPA because of its proximity to urban areas (Murision 2007). Disturbance was found to delay breeding in some Dartford territories resulting in reduced breeding productivity (Murison et al 2007). Without avoidance measures, the cumulative effect of new housing would be likely to lead to an increase in urban pressures (e.g. an increase in wildfires, damaging recreational uses, introduction of incompatible plants and animals, loss of vegetation and soil erosion and disturbance by humans and their pets – Underhill-Day 2005) on parts of the SPA with negative effects on Dartford Warbler likely. A strategic approach to avoiding and mitigating these potential impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006, The Dorset Heathlands Planning Framework Supplementary Planning Document 2015 – 2020 (SPD) sets out the detailed approach to this issue.	*and Habitat Type on a Dartford Warbler Sylvia Undata Population*. University of East Anglia, School of Biological Sciences, Norwich. Murison, G., Bullock, J.M., Underhill-Day, J., Langston, R., Brown, A.F. & Sutherland, W.J. (2007). Habitat type determines the effects of disturbance on the breeding productivity of the Dartford Warbler Sylvia undata. *Ibis*, 149, 16-26. Underhill-Day, J. C. (2005). A literature review of urban effects on lowland heaths and their wildlife. English Nature Research Report no. 623.
Supporting	**Extent and**	Restore the extent, distribution	Conserving or restoring the extent of supporting habitats and	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
habitat (both within and outside the SPA): extent and distribution	**distribution of supporting breeding habitat**	and availability of suitable breeding habitat, to correspond with the historical distribution, supporting the feature for all necessary stages of its breeding cycle (courtship, nesting, feeding):	their range will be key to maintaining the site's ability and capacity to support the SPA population. Restoration of open heathland is required on those areas where it has declined compared with the historic open heathland extent (usually through invasion by trees and scrub) and where this restoration is readily achievable. Aerial photographic coverage of the site from 1946 and 1972, together with old maps (particularly 2nd edition ordnance survey 1888-1913), provide a good reference in this respect showing the extent, distribution and pattern of dry and wet heathland, mire/fen and grassland and its relationship to woodland. The distribution of Dartford Warbler territories generally correlates well with that of areas of dry heathland	1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Supporting habitat (both within and outside the SPA): function/ supporting process	**Conservation measures**	Restore management or other measures (whether within and/or outside the site boundary as appropriate) necessary to restore the structure, function and/or the supporting processes associated with the feature and its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore the habitats that support hen harrier at this site. Further details about the necessary conservation measures for this site can be found within supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Whilst most of the area of the SPA enjoys active conservation management there remain a few areas where this does not take place. The site should have areas of structurally diverse heather and gorse. Dartford Warbler particularly favour areas of dense gorse and tall mature heather for nesting. Survival in winter appears to be enhanced when patches of dense gorse are available to provide protection from bad weather, particularly snow cover.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments NATURAL ENGLAND, 2014. Site Improvement Plan – Dorset Heaths Bibby, C.J. (1977) *Ecology of the Dartford Warbler Sylvia undata (Boddaert) in Relation to Its Conservation in Britain*. PhD thesis, Council for national Academic Awards.
Supporting habitat (both within and outside the SPA): function/ supporting process	**Food availability within supporting habitat**	Maintain the distribution, abundance and availability of key prey items (e.g. beetles, spiders, caterpillars, bugs) at preferred prey sizes.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (both within and outside the SPA): function/ supporting process	**Air quality**	Restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1.	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting habitat (both within and outside the SPA): predation	**Predation**	Reduce predation and disturbance caused by native and non-native predators.	Breeding productivity (number of chicks per pair) and survival should be sustained at rates that maintain or restore the population density in each part of its range. Impacts to breeding productivity can result directly from predation of eggs, chicks, juveniles and adults, and also from significant disturbance. The presence of predators can influence bird behaviours, such as abandonment of nest sites or reduction of effective feeding. Predation and disturbance has been identified as an issue on urban heaths (Murison et al 2007) where predation of young Dartford Warblers by domestic cats was recorded (Murison 2007). Thus development that results in an increase in domestic cats on a part of the SPA may have an adverse effect on this feature and in this respect, without avoidance measures, the cumulative effect of new housing can be significant. A strategic approach to avoiding and mitigating this and other impacts arising as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of housing growth. The mitigation strategy for the Dorset Heathlands has now been in place since 2006,	Murison, G. (2007) *The Impact of Human Disturbance, Urbanisation and Habitat Type on a Dartford Warbler Sylvia undata Population*. University of East Anglia, School of Biological Sciences, Norwich. . Murison, G., Bullock, J.M., Underhill-Day, J., Langston, R., Brown, A.F. & Sutherland, W.J. (2007). Habitat type determines the effects of disturbance on the breeding productivity of the Dartford Warbler *Sylvia undata*. *Ibis*, 149, 16-26.
Supporting habitat (both within and outside the SPA): structure	**Landscape**	Restore the connectivity of heathland patches across the SPA	Local populations of Dartford Warbler are subject to large variation in numbers in response to changing weather patterns and habitat structure. It is important that birds are able to move across the landscape and between patches of suitable habitat so they can re-colonise readily from strongholds. Thus habitat connectivity is important for this species and measures – heathland restoration, mainly outside the SPA - are needed that reverse the past fragmentation of the Dorset heathlands.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat (both within and outside the SPA): structure	**Vegetation characteristics**	Restore optimal mix of vegetation (>80% heather, <25 trees/ha and gorse with a dense structure	The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful nesting/ rearing/ concealment /roosting. Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature. Dartford Warbler have species requirements that conservation measures should seek to maintain. Stands of gorse are closely associated with Dartford Warblers due in part to its high invertebrate biomass. Its dense and spikey structure may also provide protection from both the weather and predators but mature heather is also important. Management should aim to prevent gorse from becoming old and leggy and to maintain mature heather stands.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The attribute relating to **Water quality / quantity** has been removed as it is considered not relevant for this feature on this site.				

ANNEX 14

Dorset Heaths SAC Citation and Natura 2000
Standard Data Form

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Dorset Heaths (Purbeck and Wareham) and Studland Dunes
Unitary Authority/County:	Dorset
SAC status:	Designated on 1 April 2005
Grid reference:	SZ024839
SAC EU code:	UK0030038
Area (ha):	2221.94
Component SSSI:	Arne SSSI, Blue Pool and Norden Heaths SSSI, Brenscombe Heath SSSI, Hartland Moor SSSI, Holton and Sandford Heaths SSSI, Morden Bog and Hyde Heath SSSI, Poole Harbour SSSI, Rempstone Heaths SSSI, Stoborough and Creech Heaths SSSI, Studland and Godlingston Heaths SSSI, The Moors SSSI, Thrasher's Heath SSSI

Site description:

This site, with the Dorset Heaths SAC, covers an extensive complex of heaths that form one of the best developed and most significant tracts of heathland in the lowlands of the UK. There are fine transitions between dry heath, wet heath and acid mire vegetation types, as well as a high diversity of associated habitats such as acid grassland, sand dune, acid oak woods, bog woodland, base-rich mires, fen-meadow, reedswamp and small water bodies.

The dry heath occurs on very infertile soils and is dominated by heather *Calluna vulgaris* growing in association with bell heather *Erica cinerea,* gorse *Ulex europaeus* and dwarf gorse *U. minor*. These heaths are not diverse botanically but occasionally some nationally scarce plants occur, such as mossy stonecrop *Crassula tillaea*, which has a stronghold on the Dorset heathlands. In places, where heather *Calluna vulgaris* occurs in mature stands, lichens of the genus *Cladonia* are very abundant. The dry heath, in conjunction with the wider heathland mosaic, supports important assemblages of animal species that include grasshoppers (Orthoptera), bees and wasps (Hymenoptera), spiders (Arachnida), and all six species of native British reptiles. Some species have a major part of their UK population on these heaths, including silver-studded blue butterfly *Plebejus argus*, heath grasshopper *Chorthippus vagans*, the mason wasp *Pseudepipona herrichii*, sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*.

Typically the wet heaths occupy areas of impeded drainage on the lower sides of valleys and on areas of less steeply sloping ground over more impermeable soils. They are characterised by the dominance of cross-leaved heath *Erica tetralix,* heather, and purple moor-grass *Molinia caerulea,* often in association with the bog-moss *Sphagnum compactum*. Within this SAC the nationally rare Dorset heath *Erica ciliaris* (which readily hybridises with *E. tetralix*), occurs extensively and often in abundance, and this is its principal location in the UK. In many situations the wet heaths grade into examples of other wetland vegetation types. These are usually base-poor, acid mire communities and include a widespread presence of the more floristically rich *Rhynchosporion* associated with depressions on peat in bog pool and flush situations. White beak-sedge *Rhynchospora alba,* round- and oblong-leaved sundews *Drosera rotundifolia* and *D. intermedia,* and the bog-mosses *Sphagnum auriculatum and S. pulchrum* are among the typical species. The wet heaths and acid mires support a diverse group of nationally rare and scarce species. Among the plants these include bog orchid *Hammarbya*

paludosa, and national population strongholds for brown beak-sedge *Rhynchospora fusca*, marsh gentian *Gentiana pneumonanthe* and marsh clubmoss *Lycopodiella inundata*.

The valley mires contain small pockets of wet woodland but most of these appear to be of recent origin. However, at Morden Bog a bog woodland stand is of ancient origin, as shown by its pollen record and old maps. The woodland is dominated by downy birch *Betula pubescens* with a ground flora consisting of greater tussock sedge *Carex paniculata* and purple moor-grass. There is a rich epiphytic lichen assemblage, again indicating the persistence of this area of bog woodland.

At Studland there is a large acidic dune system. The structure and function are well conserved with dune-building processes still active. Embryonic shifting dunes initiate the very clear successional sequence of dune communities and there are well-developed examples of both sand couch *Elytrigia juncea* and lyme-grass *Leymus arenarius*-dominated communities. Shifting dunes form the next stage of the successional sequence and the seaward dune ridge supports marram *Ammophila arenaria* vegetation. There are transitions to embryonic dunes, and to decalcified fixed dunes and dune heath. The dune heath occupies a series of dune ridges, which have developed over a period of several hundred years. This dry open heath is especially important for sand lizards.

Acidic humid dune slack communities with a high water table lie in the parallel hollows between the dune ridges. In these slacks, wet heath, acid mire and reedbeds have developed. Some areas are dominated by grey willow *Salix cinerea* and birch *Betula* sp. carr with the very local royal fern *Osmunda regalis* a conspicuous element. The dune slacks are linked to the Little Sea, which is a shallow lake of recent origin (<500 years old), formed as a large body of seawater became landlocked by the growing sand dunes (hence the name Little Sea). This water is now fresh and is replenished by acidic, nutrient-poor water draining off the adjacent heathland, which then flows through the dune slacks and into the sea. The submerged vegetation is characterised by communities of alternate water-milfoil *Myriophyllum alterniflorum*, shoreweed *Littorella uniflora* and spring quillwort *Isoetes echinospora*, together with bladderwort *Utricularia australis* and less frequently six-stamened waterwort *Elatine hexandra*.

To the north of the Purbeck chalk ridge and in places elsewhere, spring-fed water flushes the heathland wetlands. This base enrichment gives rise to mires characterised by the presence of black bog-rush *Schoenus nigricans* and species rich fen-meadows that conform to the purple moor-grass *Molinia caerulea* – meadow thistle *Cirsium dissectum* community. Near Poole Harbour a further type of wetland, saw sedge *Cladium mariscus* fen, occurs very locally.

The heathland wetlands together with numerous small water bodies form a stronghold for invertebrates, particularly dragonflies and damselflies (Odonata) such as small red damselfly *Ceriagrion tenellum* and southern damselfly *Coenagrion mercuriale*, some grasshoppers notably large marsh grasshopper *Stethophyma grossum*, butterflies and moths (Lepidoptera), beetles (Coleoptera) and spiders. Some of the ponds, particularly towards the edges of the heathland area where there is base enrichment of the groundwater, support populations of great crested newt *Triturus cristatus*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alkaline fens. (calcium-rich springwater-fed fens)
- Atlantic decalcified fixed dunes (*Calluno-Ulicetea*). (Coastal dune heathland)*
- Bog woodland*
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. (Calcium-rich fen dominated by great fen sedge (saw sedge))*
- Depressions on peat substrates of the *Rhynchosporion*

- Embryonic shifting dunes
- European dry heaths
- Humid dune slacks
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (Purple moor-grass meadows)
- Northern Atlantic wet heaths with *Erica tetralix*. (Wet heathland with cross-leaved heath)
- Old acidophilous oak woods with *Quercus robur* on sandy plains. (Dry oak-dominated woodland)
- Oligotrophic waters containing very few minerals of sandy plains: *Littorelletalia uniflorae*. (Nutrient-poor shallow waters with aquatic vegetation on sandy plains)
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). (Shifting dunes with marram)
- Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*. (Wet heathland with Dorset heath and cross-leaved heath)*

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Southern damselfly *Coenagrion mercuriale*
- Great crested newt *Triturus cristatus*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030038
Date of registration: 14 June 2005

Signed: Trevor Salmon

On behalf of the Secretary of State for Environment, Food and Rural Affairs

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0030038**

SITENAME **Dorset Heaths (Purbeck and Wareham) and Studland Dunes**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0030038

1.3 Site name

Dorset Heaths (Purbeck and Wareham) and Studland Dunes

1.4 First Compilation date	1.5 Update date
1998-10	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	1998-10
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-1.965833333	50.65444444

2.2 Area [ha]:

2230.53

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1140			11.15	0	G	D			
1210			2.23	0	G	D			
2110			0.45	0	G	B	C	B	B
2120			8.92	0	G	B	C	A	B
2130	X		4.46	0	G	D			
2150	X		55.76	0	G	A	B	A	A
2190			31.23	0	G	B	C	A	B
3110			22.31	0	M	B	B	A	B
4010									

			22.31	0	M	A	C	A	B
4020	X		356.88	0	G	A	A	A	A
4030			1137.57	0	G	A	C	A	B
6410			11.15	0	G	B	C	A	C
7150			22.31	0	M	A	C	A	A
7210	X		1.12	0	G	B	C	B	C
7230			11.15	0	G	B	C	B	C
9190			22.31	0	M	B	C	B	C
91D0	X		2.23	0	G	B	C	A	B

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
I	1044	Coenagrion mercuriale			p	101	250	i		M	B	A	B	B
A	1166	Triturus cristatus			p	500	500	i		G	C	C	C	C

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N04	5.0
N08	79.0
N06	4.0
N07	8.0
N17	1.0
N19	1.0
N16	1.0
N09	1.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: acidic,clay,sedimentary,sand,nutrient-poor,peat 2 Terrestrial: Geomorphology and landscape: lowland,valley,coastal,slope

4.2 Quality and importance

Embryonic shifting dunes for which this is considered to be one of the best areas in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Shifting dunes along the shoreline with Ammophila arenaria (?white dunes?) for which this is considered to be one of the best areas in the United Kingdom. Atlantic decalcified fixed dunes (Calluno-Ulicetea) for which this is considered to be one of the best areas in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Humid dune slacks for which this is considered to be one of the best areas in the United Kingdom. Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) for which this is one of only four known outstanding localities in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Northern Atlantic wet heaths with Erica tetralix for which this is considered to be one of the best areas in the United Kingdom. Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix for which this is one of only four known outstanding localities in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. European dry heaths for which this is considered to be one of the best areas in the United Kingdom. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) for which the area is considered to support a significant presence. Depressions on peat substrates of the Rhynchosporion for which this is considered to be one of the best areas in the United Kingdom. Calcareous fens with Cladium mariscus and species of the Caricion davallianae for which the area is considered to support a significant presence. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Alkaline fens for which the area is considered to support a significant presence. Old acidophilous oak woods with Quercus robur on sandy plains for which the area is considered to support a significant presence. Bog woodland for which this is considered to be one of the best areas in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Triturus cristatus for which the area is considered to support a significant presence. Coenagrion mercuriale for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	K02		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	B02		I

H	G01		I
H	A04		I
H	J02		B
H	I01		B

H	D05		I
H	D05		I
H	A02		I
H	G03		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0	UK01	44.0		

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 15

European Site Conservation Objectives for Dorset Heaths SAC

European Site Conservation Objectives for Dorset Heaths (Purbeck & Wareham) & Studland Dunes
Special Area of Conservation
Site Code: UK0030038

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats and habitats of qualifying species**
- **The structure and function (including typical species) of qualifying natural habitats**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

H2150. Atlantic decalcified fixed dunes (Calluno-Ulicetea); Coastal dune heathland *

H2190. Humid dune slacks

H3110. Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae); Nutrient-poor shallow waters with aquatic vegetation on sandy plains

H4010. Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath

H4020. Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*; Wet heathland with Dorset heath and cross-leaved heath *

H4030. European dry heaths

H6410. *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae); Purple moor-grass meadows

H7150. Depressions on peat substrates of the Rhynchosporion

H7210. Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae; Calcium-rich fen dominated by great fen sedge (saw sedge) *

H7230. Alkaline fens; Calcium-rich springwater-fed fens

H9190. Old acidophilous oak woods with *Quercus robur* on sandy plains; Dry oak-dominated woodland

H91D0. Bog woodland *

S1044. *Coenagrion mercuriale*; Southern damselfly

S1166. *Triturus cristatus*; Great crested newt

* denotes a priority natural habitat or species (supporting explanatory text on following page)

*** Priority natural habitats or species**

Some of the natural habitats and species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Habitats Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

Publication date: 9 January 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

ANNEX 16

European Site Conservation Objectives:
Supplementary Advice for Dorset Heaths SAC

European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

Dorset Heaths (Purbeck and Wareham) and Studland Dunes Special Area of Conservation (SAC)
Site Code: UK0030038

Dorset Heaths Special Area of Conservation (SAC)
Site Code: UK0019857

Date of Publication: 25 March 2019

About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC and Dorset Heaths SAC. This advice should therefore be read together with the SAC Conservation Objectives available for Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC here; and for Dorset Heaths SAC, here

These two archipelago SACs lie adjacent to each other in a complex pattern; in some cases underpinning SSSIs may fall within both SACs. The presence of two SACs in such a complex relationship is due to past designation processes; for administration purposes, a joint supplementary advice package has been produced covering both SACs. The *About this Site* section sets out the distribution of features across the two SACs.

Where this site overlaps with other European Sites, you should also refer to the separate European Site Conservation Objectives and Supplementary Advice (where available) provided for those sites.

This advice replaces a draft version dated February 2019 following the receipt of comments from the site's stakeholders.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England when developing, proposing or assessing an activity, plan or project that may affect this site'

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	Dorset Heaths (Purbeck and Wareham) and Studland Dunes Special Area of Conservation (SAC)	Dorset Heaths SAC
Location	Dorset	Dorset, Hampshire
Site Map	The designated boundary of this site can be viewed here on the MAGIC website	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 April 2005	
Qualifying Features	See section below	
Designation Area	2221.94ha	5730.73ha
Designation Changes	N/A	
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System	
Names of component Sites of Special Scientific Interest (SSSIs)	Arne SSSI, Blue Pool and Norden Heaths SSSI, Brenscombe Heath SSSI, Hartland Moor SSSI, Holton and Sandford Heaths SSSI, Morden Bog and Hyde Heath SSSI, Poole Harbour SSSI, Rempstone Heaths SSSI, Stoborough and Creech Heaths SSSI, Studland and Godlingston Heaths SSSI, The Moors SSSI, Thrasher's Heath SSSI	Arne SSSI, Black Hill Heath SSSI, Blue Pool and Norden Heaths SSSI, Bourne Valley SSSI, Canford Heath SSSI, Christchurch Harbour SSSI, Corfe & Barrow Hills SSSI, Corfe Common SSSI, Corfe Mullen Pastures SSSI, Cranborne Common SSSI, Ebblake Bog SSSI, Ferndown Common SSSI, Ham Common SSSI, Holt and West Moors Heaths SSSI, Holton and Sandford Heaths SSSI, Horton Common SSSI, Hurn Common SSSI, Lions Hill SSSI, Morden Bog and Hyde Heath SSSI, Oakers Bog SSSI, Parley Common SSSI, Poole Harbour SSSI, Povington and Grange Heaths SSSI, Rempstone Heaths SSSI, Slop Bog and Uddens Heath SSSI, St. Leonards and St. Ives Heaths, SSSI Stoborough & Creech Heaths, SSSI Stokeford Heaths SSSI, Town Common SSSI, Turbary and Kinson Commons SSSI, Turners Puddle Heath SSSI, Upton Heath SSSI, Verwood Heaths SSSI, Wareham Meadows SSSI, Warmwell Heath SSSI, Winfrith Heath SSSI, Worgret Heath SSSI
Relationship with other European or International Site designations	The Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC adjoins the Dorset Heaths SAC at a number of locations and includes similar qualifying features. At Studland, a small part of the SAC adjoins the Isle of Portland to Studland Cliffs SAC. Much of both of the Dorset heath SACs overlap with both the Dorset Heathlands SPA and the Dorset Heathlands Ramsar site and provide much of the habitat to support the SPA features. In the areas around Poole Harbour both SACs also	

	adjoin Poole Harbour SPA and Ramsar site. At Town Common the Dorset Heaths SAC is adjacent to part of the Avon Valley SPA and Ramsar site. Separate European Site Conservation Objectives for the nearby sites can be found at: • Isle of Portland to Studland Cliffs SAC • Dorset Heathlands SPA • Poole Harbour SPA • Avon Valley SPA

Site background and geography

The two sites fall within the Dorset Heaths Natural Character Area (NCA Profile 135), cover an extensive complex of heaths that form one of the best developed and most significant tracts of heathland in the lowlands of the UK. There are fine transitions between dry heath, wet heath and acid mire vegetation types, as well as a high diversity of associated habitats such as acid grassland, sand dune, acid oak woods, bog woodland, base-rich mires, fen-meadow and small water bodies.

The dry heath occurs on very infertile soils and is dominated by heather *Calluna vulgaris* growing in association with bell heather *Erica cinerea*, gorse *Ulex europaeus* and usually one of the dwarf gorse species – dwarf gorse *U. minor* and western gorse *U. gallii*. These heaths are not diverse botanically but occasionally some nationally scarce plants occur, such as mossy stonecrop *Crassula tillaea*, which has a stronghold on the Dorset heathlands. In places, where heather *Calluna vulgaris* occurs in mature stands, lichens of the genus *Cladonia* are very abundant. Uncommon features are the localised presence of bilberry *Vaccinium myrtillus* and the co-existence in some areas of the two dwarf gorse species. The dry heath, in conjunction with the wider heathland mosaic, supports important assemblages of animal species that include grasshoppers (*Orthoptera*), bees and wasps (*Hymenoptera*), spiders (*Arachnida*), and all six species of native British reptiles. Some species have a major part of their UK population on these heaths, including silver-studded blue butterfly *Plebejus argus*, heath grasshopper *Chorthippus vagans*, the mason wasp *Pseudepipona herrichii*, ladybird spider *Eresus cinnaberinus*, sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*.

Typically the wet heaths occupy areas of impeded drainage on the lower sides of valleys and on areas of less steeply sloping ground over more impermeable soils. They are characterised by the dominance of cross-leaved heath *Erica tetralix*, heather and purple moor-grass *Molinia* often in association with the bog-moss *Sphagnum compactum*. Within this SAC the nationally rare Dorset heath *Erica ciliaris* (which readily hybridises with *E. tetralix*), occurs extensively and often in abundance, and this is its principal location in the UK. In many situations the wet heaths grade into examples of other wetland vegetation types. These are usually base-poor, acid mire communities and include a widespread presence of the more floristically rich *Rhynchosporion* associated with depressions on peat in bog pool and flush situations.

The valley mires contain small pockets of wet woodland but most of these appear to be of recent origin. However, at Morden Bog a bog woodland stand is of ancient origin, as shown by its pollen record and old maps. The woodland is dominated by downy birch *Betula pubescens* with a ground flora consisting of greater tussock sedge *Carex paniculata* and purple moor-grass. There is a rich epiphytic lichen assemblage, again indicating the persistence of this area of bog woodland.

At Studland there is a large acidic dune system. The structure and function are well conserved with dune-building processes still active. Embryonic shifting dunes initiate the very clear successional sequence of dune communities and there are well-developed examples of both sand couch *Elytrigia juncea* and lyme-grass *Leymus arenarius*-dominated communities. Shifting dunes form the next stage of the successional sequence and the seaward dune ridge supports marram *Ammophila arenaria* vegetation. There are transitions to embryonic dunes, and to decalcified fixed dunes and dune heath. The dune heath occupies a series of dune ridges, which have developed over a period of several hundred years. This dry open heath is especially important for sand lizards.

Acidic humid dune slack communities with a high water table lie in the parallel hollows between the dune ridges. In these slacks, wet heath, acid mire and reedbeds have developed. Some areas are dominated by grey willow *Salix cinerea* and birch *Betula* sp. carr with the very local royal fern *Osmunda regalis* a conspicuous element. The dune slacks are linked to the Little Sea, which is a shallow lake of recent origin (<500 years old), formed as a large body of seawater became landlocked by the growing sand dunes (hence the name Little Sea). This water is now fresh and is replenished by acidic, nutrient-poor water draining off the adjacent heathland, which then flows through the

dune slacks and into the sea. The submerged vegetation is characterised by communities of alternate water-milfoil *Myriophyllum alterniflorum*, shoreweed *Littorella uniflora* and spring quillwort *Isoetes echinospora*, together with bladderwort *Utricularia australis* and less frequently six-stamened waterwort *Elatine hexandra*.

To the north of the Purbeck chalk ridge and in places elsewhere, spring-fed water flushes the heathland wetlands. This base enrichment gives rise to mires which are characterised by the presence of black bog-rush *Schoenus nigricans* and species rich fen-meadows that conform to the purple moor-grass *Molinia caerulea* – meadow thistle *Cirsium dissectum* community. Near Poole Harbour a further type of wetland, saw sedge *Cladium mariscus* fen, occurs very locally.

The heathland wetlands together with numerous small water bodies form a stronghold for invertebrates, particularly dragonflies and damselflies (*Odonata*) such as small red damselfly *Ceriagrion tenellum* and southern damselfly *Coenagrion mercuriale*, some grasshoppers notably large marsh grasshopper *Stethophyma grossum*, butterflies and moths (*Lepidoptera*), beetles (*Coleoptera*) and spiders. Some of the ponds, particularly towards the edges of the heathland area where there is base enrichment of the groundwater, support populations of great crested newt *Triturus cristatus*.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about these SAC's qualifying features. These are the natural habitats and/or species for which these SAC's have been designated. Annex 1 sets out the qualifying features for the two SACs.

Annex 1 Summary of SAC qualifying features

	Dorset Heaths SAC	Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC
H2110 Embryonic shifting dunes		Y
H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('White dunes')		Y
H2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)		Y
H2190 Humid dune slacks		Y
H3110 Oligotrophic water containing very few minerals of sandy plains		Y
H4010 Northern Atlantic wet heaths with *Erica tetralix*	Y	Y
H4020 Temp Atlantic wet heaths with *Erica ciliaris* and *E. tetralix*	Y	Y
H4030 European dry heaths	Y	Y
H6410 *Molinia* meadows on calcareous, peat or clay-silt soil	Y	Y
H7150 Depressions on peat substrates of the *Rhynchosporion*	Y	Y
H7210 Calcareous fens with *C. mariscus* and species of *C. davallianae*	Y	Y
H7230 Alkaline fens	Y	Y
H9190 Old acidophilous oak woods with *Q. robur* on sandy plains	Y	Y
H91D0 Bog woodland		Y
S1044 Southern damselfly, *Coenagrion mercuriale*	Y	Y
S1166 Great crested newt, *Triturus cristatus*	Y	Y

Qualifying habitats:

- **H7230 Alkaline fens**

This vegetation is characteristic of sites where there is peat formation with a high water table and a calcareous base-rich water supply. The core vegetation is short sedge mire (mire with low-growing sedge vegetation) and examples within the Dorset Heaths with the few stands represented by the NVC type M10a *Carex dioica – Pinguicula vulgaris* mire, M22 *Juncus subnodulosus–Cirsium palustre* fen meadow, species-rich M22–M24 (*Molinia caerulea–Cirsium dissectum* fen meadow) transition, M14b *Schoenus nigricans-Narthecium ossifragum* mire and S2b *Cladium mariscus* swamp and sedge-beds (Wheeler and Wilson 2014) where there is overlap with H7210 Calcareous fens with C. mariscus and species of C. davallianae.

- **H2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)**

Studland Dunes comprises the only large dune heath site in the south and south-west of Britain. The heathland occupies a series of dune ridges, which have developed over a period of several hundred years. The development of these ridges was the subject of a classic study (Diver 1933) and the processes are still active today. Structure and function of the dune heath communities are therefore well-conserved. The dry open heath is an important habitat for rare reptiles such as sand lizard *Lacerta agilis*. At the western margin of the dune ridges the dry dune heath grades into wet heath in which cross-leaved heath *Erica tetralix* is prominent, while at the northern end it grades into the southern heathland types of inland Dorset.

- **H91D0 Bog woodland**

Both SACs contain small pockets of wet woodland within valley mires but most of these appear to be of recent origin and are not representative of this feature. However, at Morden Bog a Bog woodland stand is of ancient origin, as shown by its pollen record and old maps. The woodland is dominated by downy birch *Betula pubescens* with a ground flora consisting of greater tussock sedge *Carex paniculata* and purple moor-grass *Molinia caerulea*. There is a rich epiphytic lichen assemblage, again indicating the persistence of this area of bog woodland.

- **H7210 Calcareous fens with C. mariscus and species of C. davallianae**

This Annex I type comprises the more species-rich examples of great fen-sedge *Cladium mariscus* fen, particularly those stands enriched with elements of the *Caricion davallianae* (i.e. small-sedge fen with open, low-growing sedge vegetation). Within the SAC, this feature occurs very locally near Poole Harbour.

- **H7150 Depressions on peat substrates of the *Rhynchosporion***

The habitat is widespread on the Dorset Heaths, both in bog pools of valley mires and in flushes. There are numerous valley mires within the Dorset Heaths, and the habitat type is most extensively represented here as part of a habitat mosaic with other mire communities and dry and wet heath. This location shows extensive representation of brown-beak sedge *Rhynchospora fusca* and is also important for great sundew *Drosera anglica* and bog orchid *Hammarbya paludosa*.

- **H2110 Embryonic shifting dunes**

At Studland Dunes there is a very clear successional sequence of dune communities. Embryonic shifting dune vegetation is the first type of vegetation to colonise areas of incipient dune formation at the top of a beach. The dune vegetation exists in a highly dynamic state and is dependent on the continued operation of natural physical processes at the dune/beach interface. This dune vegetation is a transient feature and will either be displaced by marram-dominated vegetation as the dunes develop (2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")) or will be washed away by storms. This is a part of the UK where this habitat type is rare, partly owing to intensive recreational use of the coast.

The main vegetation types present are the SD2 Sea Rocket – Sea Sandwort (*Cakile maritime – Honkenya peploides*) strandline community, SD4 Sand Couch-grass) *Elymus farctus ssp. Boreali-atlanticus)* foredune community, and SD5 Lyme Grass (*Leymus arenarius*) mobile dune community,

- **H4030 European dry heaths**

This site in southern England has extensive stands of lowland dry heath vegetation. The types include H2 Heather – Dwarf Gorse (*Calluna vulgaris – Ulex minor)* heath, H3 Dwarf Gorse - Bristle Bent (*Ulex minor – Agrostis curtisii*) heath and some areas of H4 Western Gorse – Bristle Bent (*Ulex gallii – Agrostis curtisii*) heath. The communities are dominated by heather *Calluna vulgaris* growing in association with bell heather *Erica cinerea* and one of the dwarf gorse species – dwarf gorse *Ulex minor* or western gorse *U. gallii*. Both of the Dorset Heath SACs and the New Forest are in southern England and all three areas are selected because together they contain a high proportion of all the lowland European dry heaths in the UK. There are, however, significant differences in the ecology of the two areas, associated with more oceanic conditions in Dorset and the continuous history of grazing in the New Forest.

- **H2190 Humid dune slacks**

Studland Dunes is a large acidic dune system in south-west England with well-conserved structure and function. The site has been intensively studied. The structure and function of dune systems are well-represented with dune-building processes still active. These processes have resulted in the formation of acidic humid dune slack communities with a high water table, which lie in the parallel hollows between the dune ridges. In these slacks, acidic fen and reedbeds have developed. Some areas are dominated by grey willow *Salix cinerea* and birch *Betula* sp. carr with the very local royal fern *Osmunda regalis* a conspicuous element. The dune slacks are linked to an area of open fresh water known as the Little Sea (see H3110 below).

- **H6410 Molinia meadows on calcareous, peat or clay-silt soil**

These habitats are found mainly on moist, moderately base-rich, peats and peaty gley soils, often with fluctuating water tables. They usually occur as components of wet pastures or fens, and often form mosaics with dry grassland, heath, mire and scrub communities. This habitat type includes the most species-rich *Molinia* grasslands in the UK, in which purple moor-grass *Molinia caerulea* is accompanied by a wide range of associated species, including rushes, sedges and tall-growing herbs. Within the SAC, the predominant NVC community is M24 Molinia *caerulea – Cirsium dissectum* fen-meadow

- **H4010 Northern Atlantic wet heaths with Erica tetralix**

The two Dorset Heaths SACs, together with the New Forest (also in southern England), contain a large proportion of the total UK resource of lowland northern Atlantic wet heaths. The habitat is of the M16 *Erica tetralix – Sphagnum compactum* wet heath type and occurs as well-developed transitions between dry heath and valley bog. This habitat type is important for rare plants, such as marsh gentian *Gentiana pneumonanthe* and brown beak-sedge *Rhynchospora fusca.* The wet heaths and mires are also important for scarce Odonata, such as small red damselfly *Ceriagrion tenellum.* The sites are an important transitional area between the more oceanic heathlands of the south-west peninsula and the semi-continental heathlands of eastern England.

- **H9190 Old acidophilous oak woods with Q. robur on sandy plains**

This habitat type comprises ancient lowland oak woodland on acidic, sandy or gravelly substrates. Veteran trees are relatively abundant in UK stands compared to examples in continental Europe, and are often associated with assemblages of notable lichens, fungi and invertebrates. The scattered examples within these SACs are mostly small stands, part of a mosaic with different heathland or sometimes acid grassland vegetation and vary considerably. Some stands, such as those at Povington and Grange Heaths, are essentially wood pasture and are within a large predominantly heathland grazing unit. In other places (parts of Arne, Parley Common) the woodland is more closed and subject to lighter or no livestock grazing. Often veteran oaks are found on old boundary banks having grown from old hedge lines when parts of the heath were enclosed and temporally farmed.

- **H3110 Oligotrophic water containing very few minerals of sandy plains**

Little Sea is a shallow lake at Studland Dunes in south-west England. It is of recent origin (<500 years old), formed as a large body of seawater became landlocked by the growing sand dunes (hence the name Little Sea). This water is now fresh and is replenished by acidic, oligotrophic water draining off the adjacent heathland, which then flows through the dune slacks and into the sea. The submerged

vegetation is characterised by communities of alternate water-milfoil *Myriophyllum alterniflorum*, shoreweed *Littorella uniflora* and spring quillwort *Isoetes echinospora*, together with bladderwort *Utricularia australis* and less frequently six-stamened waterwort *Elatine hexandra*.

- **H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('White dunes')**

"White dunes" develop from Embryonic Shifting Dunes as the next stage of sand-dune succession and covers most of the vegetation of unstable dunes where there is active sand movement. This is one part of the very well-marked successional sequences. Marram grass *Ammophila* arenaria is a prominent feature of the vegetation and important for sand-binding to enable dune creation. At Studland Dunes the seaward dune ridge supports marram *Ammophila arenaria* vegetation mainly of NVC type SD6e *Ammophila arenaria* mobile dune, *Festuca rubra* sub-community.

- **H4020 Temperate Atlantic wet heaths with *Erica ciliaris* and *E. tetralix***

The greatest concentration of Dorset heath *Erica ciliaris* in the UK is in Dorset on the heaths south of Poole Harbour, with outlying stands elsewhere in Dorset. Dorset Heaths (Purbeck and Wareham) and Studland Dunes has therefore been selected as it contains a high proportion of the total UK population of *E. ciliaris.*

Qualifying Species:

- **S1166 Great crested newt*, Triturus cristatus***

The great crested newt is the largest native British newt, reaching up to around 17cms in length. Newts require aquatic habitats for breeding. Eggs are laid singly on pond vegetation in spring, and larvae develop over summer to emerge in August – October, normally taking 2–4 years to reach maturity. Juveniles spend most time on land, and all terrestrial phases may range a considerable distance from breeding sites. Within the SAC, great-crested newts are mainly associated with the former clay pools in Blue Pool and Norden Heaths SSSI.

- **S1044 Southern damselfly, *Coenagrion mercuriale***

The southern damselfly *Coenagrion mercuriale* has very specialised habitat requirements, being confined within the SAC to shallow, well-vegetated, base-rich runnels and flushes in open areas within fen or wet heath. With Preseli, the New Forest and the River Itchen, the two Dorset Heath SACs represent one of the four major population centres in the UK.

Table 1: Supplementary Advice for Qualifying Features: H2110 Embryonic shifting dunes and H2120 Shifting dunes along the shoreline with *Ammophilia arenaria* ("white dunes") (shifting dunes with marram).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the annual vegetation of drift lines, embryonic shifting dunes and shifting dunes along the shoreline with *Ammophila arenaria* to around 14ha.	Dune systems are found in the area adjacent to Studland Bay within the Dorset Heaths (Purbeck & Wareham) and Studland Dunes SAC. There should be no reduction (excluding any trivial loss) in the extent and area of these features. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys but area measurements for this feature are approximate because of natural variation in the area and distribution of the features. . These natural dynamic processes also mean there will be acceptable variations in their extent. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. **H2110 Embryonic shifting dunes** is the most dynamic, naturally changing, zone of the dune system. Its extent may vary seasonally and through the years. This natural functioning is critically dependent on no interruption of sand movement to and from the fore-dunes and the beach. Where beaches are narrow or prevailing winds not onshore, this Annex 1 habitat may be limited in extent. Evidence of natural changes to extent should not justify loss to development. Loss (or gain) due to natural causes is considered acceptable; strandline vegetation may be absent in some years as a result of natural causes, e.g. severe storms. Loss due to human activities is not considered acceptable.	DERC (2006) NVC Survey of Dorset Heaths SAC

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This zone of shifting dunes occurs between the beach plane and the usually more stable and fully vegetated older dunes. Communities may be dynamic in their distribution and are linked to the sedimentary processes operating at the site. For H2120 Shifting dunes with marram, this strongly relates to the coastal processes (sediment transport from offshore and along the beach, sand deposition by wind, tideline debris to initiate sand trapping and lack of disturbance during growing season) as well as seed/propagule supply that determine the presence of the habitat. Artificial interference in these natural coastal process is likely to harm this feature. Distribution of habitat relates to the availability of blown sand from the beach plain, as well as seed/propagule supply that determine the presence of the habitat. *Ammophila arenaria* (Marram grass) plants also have a mycorrhizal association. Annex 1 habitat to be present where relevant sedimentary and wind conditions occur.	
Extent and distribution of the feature	**Future extent of habitat within the site and ability to respond to seasonal changes**	**For H2110 Embryonic dunes only**: Maintain the ability to absorb seasonal and periodic fluctuations in the extent of the habitat	This recognises the need to allow for natural fluctuations in the extent and the distribution of this habitat feature, often during particular seasons and usually as a result of natural coastal processes. This ability depends on a continuing linkage between the beach and this Annex 1 habitat, together with the ability of dune building grasses to respond in periods of net sand input.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Dune topography**	**For H2110 Embryonic dunes only:** Maintain a natural dune topography, and allow natural change that is wind driven (some change may be necessary to	Dune topography in the H2110 Embryonic dunes zone can change seasonally and through the years due to wind and tidal events. Accumulations of driftline organic material are important for trapping sand and initiating dune formation. See also 'Functional connectivity with wider coastal sedimentary system' and 'Within-site sedimentary processes'	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		maintain the continuity of slacks). **For H2120 Shifting dunes with marram only** Maintain a natural topography to the shifting dune feature.	component. For **H2120 Shifting Dunes with marram** dune topography may be influenced by the operation of geomorphological processes, which should be allowed to continue in order to maintain the dune system in its naturally dynamic form. Maintaining this zone in a natural form, and as part of the wider dune zonation, will provide optimal conditions for the full range of characteristic flora and fauna. The low shifting dunes on the foreshore provide a vital structural element to any dune system: the varied natural topography provides important means of dune-building and progradation seawards. Key dune-building plants such as *Ammophila arenaria* (Marram grass) is sensitive to salinities over 1.5% so only persists on higher dune ridges.	
Structure and function (including its typical species)	**Presence of unvegetated surfaces**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain an extent of bare sand of varying sizes in a mosaic with the vegetation (up to 50% of the feature extent)	In these developing, dynamic zones, bare sand should be expected. Lack of bare sand would suggest an artificially stabilised system. Blow-throughs are a natural element of this zone. If extent of sand is towards the upper end of the range, it will become important to assess whether recreational pressures are over-riding natural dynamics.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type: **For H2110 Embryonic dunes:** SD2 *Honkenya peploides – Cakile maritima* strandline communities	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		SD4 *Elymus farctuss ssp boreali-atlanticus* foredune community SD5 *Leymus arenarius* mobile dune community **For H2120 Shifting dunes with marram** • SD5 *Leymus arenaria* mobile dune community • SD6 Ammophila arenaria mobile dune community.	fluctuations). The vegetation types equivalent to **H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")** are generally NVC types SD6 and elements of SD5, but can contain elements of other communities depending on degree of surface stability. The majority falls within SD6: a dynamic vegetation type maintained only by change, which will rapidly change and disappear if stability is imposed. It can vary from stands of pure *Ammophila arenaria* (Marram grass) to more diverse communities, reflecting a range of natural factors. SD10 *Carex arenaria* community may become prominent on areas of dune subject to erosion through disturbance. The species composition of shifting dunes is constrained by the harsh conditions, but the vegetation is by no means uniform; he most marked floristic variation relates to the degree of instability. Where sand accretion is extremely rapid it is possible to find vegetation that consists only of *Ammophila arenaria*; as rates of sand deposition decline the Marram is joined by more species. There are a number of sub-communities and there will be natural fluxes in the transition between the mobile dunes and fixed dunes seaward as sand deposition changes.	
Structure and function (including its typical species)	**Vegetation community transitions**	**For H2120 Shifting dunes with marram *only*** Maintain the full natural range of vegetation zones and the transitions between them.	Zonations are seen as indicative of good conservation of structure and function. It is essential that the relationship between this habitat and other elements of the sand dune system are recognised. As much of the dune frontage as possible should have intact zonation to the next stage in succession (generally fixed dunes). This target needs to be determined at a site level, as there may be specific factors that naturally limit continuous coverage.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Vegetation structure: zonation of dune vegetation**	**For H2110 Embryonic dunes only:** Restore the cover of this feature at or to 95% of the wider dune	The coastal sand dune ecosystem has a characteristic range of natural features, representing different stages of natural succession. The full representation of these stages should be maintained or where appropriate restored. On some sites there may be specific natural factors that limit continuous coverage,	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		frontage	related to broader scale sediment budgets. Recreational pressure limits the extent of this feature along parts of the due frontage. Where *Leymus arenarius* is present, there can be a continuous floristic transition to marram dominated mobile dunes (Shifting dunes along the shoreline with *Ammophila arenaria*).	
Structure and function (including its typical species)	**Vegetation composition: trees and scrub**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Ensure scrub and tree cover is absent or rare	Dense cover of trees and shrubs can smother and shade out smaller and more characteristic vegetation of this habitat feature, and interrupt naturally occurring dune processes. Usually active management is required to reduce or (where it is native), other trees and shrubs would usually indicate an artificially stabilised system.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Vegetation: undesirable species**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Restore the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread. Pirri-pirri Bur *Acaena novae-zelandiae*	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. For this feature, two types of negative species can occur: invasive non-natives such as *Crassula* or pirri-pirri bur; or species indicative of poor or declining condition (eg. nettle or creeping thistle). For known or likely invasive species there should be zero tolerance. Invasive non-native species may be an issue, the presence of non-natives and other undesirable species could be an indication of increased stability. Some species are potentially more invasive into areas of bare sand and will require specific management on site. The invasive non-native species Pirri-pirri Bur *Acaena novae-zelandiae* is present along tracks and elsewhere within Studland & Godlingston Heaths SSSI.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical	**Soils, substrate and nutrient cycling**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram**	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
species)		Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature. Embryonic shifting dunes have essentially raw soils with little humus and low nutrient and base status.	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature The constant and preferential plants of the NVC community type which forms a key component of a SAC habitats that is present • SD2 *Honkenya peploides – Cakile maritima* strandline communities • SD4 *Elymus farctuss ssp boreali-atlanticus foredune* community • SD5 *Leymus arenarius* mobile dune community • SD6 *Ammophila arenaria* mobile dune community • Sand Lizard (*Lacerta agilis*).(H2120 Shifting dunes only with marram only	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Structural** species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Adaptation and resilience**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of natural habitat features to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being moderate taking into account the sensitivity, fragmentation, topography and management of its habitats. The site is sensitive to changing weather patterns, such as more frequent easterly storms, which will influence the way that coastal processes affect the feature.	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Supporting processes (on which the feature relies)	**Functional connectivity with wider coastal sedimentary system and wider landscape**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain adequate movement of sediment from all key sediment sources (directly from and along the beach, indirectly from offshore, eroding cliffs etc.).	This recognises the need at this site to maintain the connectivity of the site to its wider landscape in order to meet the conservation objectives. Features outside of the designated site boundary can be important either for the continuous supply of sediment (such as soft eroding cliffs, dunes, offshore sand banks) or for the migration, dispersal and genetic exchange of those typical species closely associated with embryonic shifting dunes on of the site. **H2110 Embryonic shifting dunes** are an integral element of the 'coastal foredune' (the beach-dune sand-sharing system). At Studland, it is critical that sediment transport that feeds the beach from offshore is not interrupted. In some cases sand	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			may come from marram-dominated dunes landward H2120 (Shifting dunes along the shore with *Ammophila arenaria*). Accumulation of driftline organic material (seaweed etc.) is essential for trapping sand and initiating dune formation. Mechanical beach cleaning could adversely affect this process.	
Supporting processes (on which the feature relies)	**Aeolian (wind-blow) processes**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain the natural movement of sand within the site, resulting from wind blow-outs and blow-throughs and maintain / restore the ability of wind-blow processes to transport sand from the beach plain to the foredune. .	Allowing natural wind-blow (or 'aeolian') processes to operate and to allow active movement of dry sand is important. Blow-throughs are a natural element of the dynamics of this zone. However, excessive recreational pressure can inhibit vegetation growth in sand building phases. The beach plain needs to be dry to allow sand to be transported into the dune system.	
Supporting processes (on which the feature relies)	**Air quality**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			measures to tackle diffuse air pollution, within realistic timescales.	
Supporting processes (on which the feature relies)	**Conservation measures**	**For H2110 Embryonic Shifting Dunes and H2120 Shifting Dunes with marram** Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. For **H2110 Embryonic Dunes**, direct habitat and species management is not expected to take place in this zone. However, excessive recreational activity can be damaging and may well need to be managed.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: Attributes for **water quality** and **hydrology** have been removed as they are not considered relevant to this feature within the SAC.				

Table 2: Supplementary Advice for Qualifying Features: H2150. Atlantic decalcified fixed dunes (*Calluno-Ulicetea*); Coastal dune heathland and H2190 Humid Dune Slacks.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Dune topography**	**For H2190 Humid dune slacks only:** Maintain a natural dune topography, but allow natural change that is wind driven (some change may be necessary to maintain the continuity of slacks).	It is possible that on some sites there are over-riding constraints that will not allow natural dune dynamics to proceed. On these sites it may be necessary to artificially lower ground surface levels in slacks to extend their lives. See also 'Within-site sedimentary processes' component.	
Extent and distribution of the feature	**Extent of the feature within the site**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Restore the total extent of the H2150 Atlantic decalcified fixed dunes (*Calluno – Ulicetea):* Coastal dune heathland and H2190 humid dune slacks	There should be no reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements given may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. The bulk of the approximately 200ha of the **H2150 Coastal dune heathland** habitat in England is found on only 5 sites, all of which are SACs. Due to the very limited extent and the absence of knowledge about reinstatement, any reduction in extent to development, even of a small part of one site would	DERC (2006) NVC Survey of Dorset Heaths SAC This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			be considered an adverse impact. For the **H2190 humid dune slacks**, if loss (or gain) of area is from natural physical dynamism this is not a decline in condition, but any significant loss due to human interference (e.g. sand extraction, visitor impacts, ploughing or conversion to improved grassland) is to be regarded as harmful. In a naturally functioning dune system some dune slacks will, over time, dry out but new ones will be created by sand blow (secondary slacks) or by beach development (primary slacks). Humid dune slacks represents the wetter and early succession elements of dune wetlands. Different elements of the wet-dry and early-late succession spectrums should reflect the natural development of the dune system. Evidence of natural changes to extent should not justify further loss to development.	
Extent and distribution of the feature	**Future extent of habitat within the site and ability to respond to seasonal changes**	**For H2190 Humid Dune Slacks only:** Maintain the ability to absorb seasonal and periodic fluctuations in the extent of the habitat	This recognises the need to allow for natural fluctuations in the extent and the distribution of this habitat feature, often during particular seasons and usually as a result of natural coastal processes. Humid dune slacks are buffered from short term natural variations in hydrology including dry seasons. However, artificial drainage or a longer series of dry years with lowered water table will lead to early succession away to non-dune wetland habitat. In the medium term, a degree of dune dynamics is required to create new dune slacks.	
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Maintain the distribution of the dune heath Annex I habitat across the site, and transitions with and between other dune or terrestrial habitats, including fixed dune grassland, acid dune grassland and lowland heath	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature. In the short term, **H2190 humid dune slack** wetland features are fixed in space determined by dune topography and hydrology. However, in a naturally functioning dune system topography can change leading to localised losses and gains in dune wetlands, including Humid dune slacks.	
Structure and function (including its typical species)	**Adaptation and resilience**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature The constant and preferential plants of the NVC community type which forms a key	See explanatory notes for this attribute in Table 1	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		component of a SAC habitat that is present , H11 *Calluna vulgaris -Carex arenaria* heath • Sand Lizard (*Lacerta agilis*). • Vascular plant assemblage		
Structure and function (including its typical species)	**Presence of unvegetated surfaces**	**For H2190 Humid Dune Slacks only:** Maintain an extent of bare ground or sand which is no more than 20% of the total dune slack area.	Patches of bare sand are essential for a wide range of dune invertebrates and colonisation by some bryophytes.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** [Maintain OR Restore] the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with these Annex 1 features. . The **H2150 fixed dune heath** habitat depends on acidic surface layers which overlie acidic sand or sand deposits that have been subject to long-term leaching. As the **H2190 dune slack** vegetation succession progresses, soils develop in structure and nutrient status. The soils under Humid dune slacks represent less to moderately developed natural soils to be found on dunes.	
Structure and function (including its	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)		characterised by the following National Vegetation Classification types: **For H2150 Atlantic decalcified fixed dunes (*Calluno- Ulicetea)*** H11 *Calluna vulgaris -Carex arenaria* heath **For H2190 Humid dune slacks:** There are 4 humid dune slack communities: SD13, SD14, SD15, SD17 and various MG communities on sand. However, the acidic dune slacks at Studland do not correspond closely to these communities of calcareous dunes and have more in common with acidic mire communities.	conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations). For the **H2190 humid dune slack** feature it is unlikely that all slack communities will be represented in a single slack. It is more usual for individual slacks to be at different stages in vegetation succession, and to have slightly different hydrological regimes. The target relates to the humid dune slack resource across the whole site. • Pioneer and early stages of vegetation characterised by communities with mosses *Bryum pseudotriquetrum, Aneura pinguis and Campylium stellatum*. Other common dune slack plants are *Carex flacca, Sagina nodosa, Equisetum variegatum, Hydrocotyle vulgaris, Juncus articulatus, and Mentha aquatica.* • *SD13 a + b Sagina nodosa – Bryum pseudotriquetrum* community is the most open and immature dune slack vegetation (young drier slack), a rare assemblage of young and perpetually rejuvenated slacks. Periodic wetting provides ideal conditions for a variety of ephemeral plants, perennials and bryophytes. Older strands show transitions to dryer slack vegetation. [*Carex arenaria, Juncus articulatus, Leontodon hispidus, Sagina nodosa, Salix repens, Aneura pinguis, Bryum pseudotriquetrum*.] There are different types of dune slacks and stages within these. • Dune slack community sub-types: dune slack pools (permanent water bodies); dune slack pioneer swards; dune	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			slack fens (calcareous, occasionally acidic); dune slack grasslands (humid grasslands and rushbeds); dune slack reedbeds, sedgebeds and canebeds. Humid dune slacks are composed of wetland vegetation (swamp, marsh, and fen).	
Structure and function (including its typical species)	**Vegetation community transitions (range and zones)**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Restore the typical patterns of zonations/transitions between the feature and landward to other dune habitats or terrestrial and wetland habitats	Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna. For this habitat, fluctuations in the extent of grasses to dwarf shrubs can occur over time, but there should be evidence on re-colonisation by dwarf shrubs	
Structure and function (including its typical species)	**Vegetation composition: forb/grass ratio**	**For H2190 Humid dune slacks only:** Restore a typically low vegetation sward with >30% cover of forbs and <50% cover of grasses, and occasional bryophytes	An abundance of tussocky *Molinia caerulea* that dominates the sward is an issue for some slacks. These slacks would benefit from the introduction of an appropriate intensity of grazing.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Vegetation composition: trees and scrub**	**For H2190 Humid Dune Slacks Only:** Restore scrub and tree cover of locally native species to between 5% and 10%, scattered and in small groups.	Dense cover of trees and shrubs can smother and shade out smaller and more characteristic vegetation of this habitat feature, and interrupt naturally occurring dune processes. Some slacks have become invaded by willow perhaps partly caused by historic eutrophication of Little Sea by sewage inputs. Active management is required to reduce or contain its cover across this habitat feature. The 'humid dune slack' community requires soil to be wet enough for a diverse range of forbs and some grasses to be also present. The target relates to the humid dune slack resource across the whole site.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its	**Vegetation structure: zonation of**	**For H2190 Humid dune slacks only**:	The coastal sand dune ecosystem has a characteristic range of natural features, representing different stages of natural succession. The full representation of these stages should be	This attribute will be periodically monitored as part of Natural England's SSSI Condition

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)	**dune vegetation**	Restore succession of dune slack stages (early, middle and later). All humid slack communities should be present – from embryonic dune slacks with a high % of bare ground to those with more closed vegetation.	maintained or where appropriate restored. The target relates to the humid dune slack resource across the whole site. The latter end of the dune slack succession which is dry dune slack is covered by H2170 Dunes with *Salix repens*. There are different types of dune slacks - pioneer, young/moderate and old, and stages within these: dune slack community sub-types: dune slack pools (permanent water bodies); dune slack pioneer swards; dune slack fens (calcareous, occasionally acidic); dune slack grasslands (humid grasslands and rushbeds); dune slack reedbeds, sedgebeds and canebeds. Not all slack communities will be represented in a single slack. It is more usual for individual slacks to be at different stages in vegetation succession, and to have slightly different hydrological regimes. A mosaic of other wetland vegetation communities are frequently present within dunes (swamp/mire/tall herb fen). These are all important elements of the dune system and may have hydrological connectivity with the dune slack habitats.	Assessments
Structure and function (including its typical species)	**Vegetation: undesirable species**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Restore the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread. Pirri-pirri Bur *Acaena novae-zelandiae* *Crassula helmsii* Non heathland grasses indicative of eutrophication *(e.g.* Cock's-	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. For this feature, two types of negative species can occur: invasive non-natives such as *Crassula* or pirri-pirri bur; or species indicative of poor or declining condition (e.g. nettle or creeping thistle). For known or likely invasive species there should be zero tolerance but complete eradication of *Crassula* is not practical at present. Invasive non-native species may be an issue, the presence of non-natives and other undesirable species could be an indication of increased stability. Some species are potentially more invasive into areas of bare sand and will require specific management on site.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		foot *Dactylis glomerata)*	*Crassula helmsii* is present in some slacks. The invasive non-native species Pirri-pirri Bur *Acaena novae-zelandiae* is present along tracks and elsewhere. Occurrence of non-heathland grasses along tracks can be the result of eutrophication by dog faeces and measures are required to prevent an increase in this effect from new housing. *Wit*hin **H2190 Humid dune slack** communities*, Urtica dioica, Cirsium arvense and C. vulgare* species are indicative of poor condition; other thistles should not be included as negative indicators *Senecio jacobaea* is a natural constituent of dune vegetation; however, in dune slacks an abundance of *Senecio jacobaea* indicates over-stocking.	
Supporting processes (on which the feature relies)	**Aeolian (wind-blow) processes**	**For H2190 Humid Dune slacks only:** Maintain the natural movement of sand within the site, resulting from wind blow-outs and blow-throughs.	Allowing natural wind-blow (or 'aeolian') processes to operate and to allow active movement of dry sand is important. Current dune topography, including hollows reaching damp sand where slacks occur, has resulted from past within-site dune movement. Although **H2190 Humid dune slacks** does not depend in the short term on new dune mobility, its medium/long term survival does. Secondary slacks are created where overlying sand is blown away down to the water table/wet sand.	
Supporting processes (on which the feature relies)	**Air quality**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in table 1.	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the	**Conservation measures**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks**	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site	This attribute will be periodically monitored as part of Natural England's SSSI Condition

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
feature relies)		Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature	can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. The H2150 Dune heath habitat specifically requires stable sand ,with no inputs of calcareous sand, surface layers should not be disturbed as these have been leached over long time periods Although 'natural processes' are given a high priority in sustaining site and feature integrity in dunes, active management (including livestock grazing) is sometimes required in the H2190 Humid dune slack communities. Management includes scrub cutting, grazing and turf-stripping. Management should focus on creating new successional cycles to provide habitat for early successional species and replace that lost by accelerated succession. Stimulation of germination from the seed bank through management may contribute to the conservation of both characteristic and threatened species typical of dune slacks. (Plassmann et al., 2009) Management practices that remove nutrients (N) from the H2190 humid dune slacks system can mitigate the effects of N inputs but may damage fragile components. A range of invertebrates and plants require bare sand, usually naturally created by wind blow, but sometimes where it is infrequently disturbed by vehicles or feet.	Assessments
Supporting processes (on which the feature relies)	**Functional connectivity with wider coastal sedimentary system including seed/**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Maintain movement of sediment from all key sediment sources (directly from and along the	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
	propagule dispersal, and wider landscape	beach, indirectly from offshore, eroding cliffs etc.). Maintain the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis. Although Humid dune slacks do not depend in the short term on continued inputs of sand, its medium/long term survival does. Primary slacks can occur on the beach plane with sufficient input of sand.	
Supporting processes (on which the feature relies)	**Hydrology**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** At a unit and/or catchment level (as necessary, maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. This target is generic and further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. For **H2190 Humid dune slacks** • All dune wetland vegetation communities are influenced by the water table. Each community reflects a particular past and current hydrological regime. Water table monitoring should be present on all sites with dune wetlands. • Humid dune-slacks are extremely rich and specialised habitats which are very threatened by the lowering of water tables (Interpretation Manual - EUR28). They require a period of wetting, with inundation to shallow depth in winter and dry in summer. • Permanent pools will sometimes occur in association with dune slacks, and can be hydrologically linked to the humid	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			dune slack feature. There will be a suite of dune slacks within a site, all at different stages in vegetation succession, and although all linked to the same dune aquifer, may have slightly different hydrological regimes due to variations in age, elevation and management.	
Supporting processes (on which the feature relies)	**Water quality**	**For both H2150 Coastal Dune Heathland and H2190 Humid Dune Slacks** Restore water quality and quantity to a standard which provides the necessary conditions to support the feature	For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality of water supply is critical, especially at certain times of year. Although there is no direct water quality information for the dune slacks in this acid dune system, there is hydrological continuity between most of these slacks and Little Sea and since there are some issues with water quality there (see H3110 Oligotrophic water containing few minerals of sandy plains) there may also be an effect on the slacks. Since plant communities have similarities with those within mires, required water quality standards are likely to be similar to H7150 (depressions on peat substrates).	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

Table 3: Supplementary Advice for Qualifying Features: H3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*); Nutrient poor shallow waters with aquatic vegetation on sandy plains.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature at 33ha	There should be no reduction (excluding any trivial loss) in the extent and area of this feature. Within the Dorset Heaths (Purbeck to Wareham) and Studland Dunes SAC this feature is limited to Little Sea and Eastern Lake within Studland & Godlingston Heaths SSSI. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features around the lake shores. There may be acceptable variations in extent because of natural dynamic processes such as changes in water levels.	DERC NVC Survey 2006 Ordnance Survey mapping
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Restore the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature • The constant and preferential plants of the NVC community type which forms a key component of a SAC habitat that is present including *Littorella uniflora, Isoetes echinospora, Elatine hexandra, Myriophyllum alterniflorum,. Nitella translucens, Utricularia australis, Menyanthes trifoliata Potamogeton polygonifolius, P. perfoliatus, P. obtusifolius.*	See explanatory notes for this attribute in Table 1	Newbold C. (2002) Little Sea Dorset: a Macrophyte Survey. Report to English Nature. Pearman, D. (1997) The vegetation of the Little Sea, *Recording Dorset*, 7, pp.37-39.
Structure and function (including its typical	**Invasive, non-native and/or introduced species**	Non-native species categorised as 'high-impact' in the UK under the Water Framework Directive should be either rare or absent	Non-native species constitute a major threat to many open water systems. Impacts may be on the habitat itself (e.g. damage to banks and consequent siltation) or directly on characteristic biota (through predation, competition and	This attribute will be periodically monitored as part of Natural England's SSSI Condition

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
species)		but if present are causing minimal damage to the feature *Crassula helmsii* at least not expanding in extent and not supressing native species *Elodea nuttalli* <40%	disease), or a combination of these. For example, species such as signal crayfish have been responsible for much of the decline of native crayfish through competition, habitat damage and the introduction of crayfish plague. The UK Technical Advisory Group of the Water Framework Directive produces a regularly updated classification of aquatic alien species (plants and animals) according to their level of impact. In general high impact species are of greatest concern but low or unknown impact species may be included in the target on a site-specific basis where there is evidence that they are causing a negative impact (for example high cover values or abundances). Those taxa considered likely to colonise lakes, are indicated by an 'L' in the UKTAG guidance. Examples of such high-impact species may include Water Fern, New Zealand pygmy weed and the zebra mussel.	Assessments
Structure and function (including its typical species)	**Macrophyte community structure**	Restore characteristic zonations of vegetation with increasing depth, represented by *Littorella uniflora* then *Isoetes* spp.	This is a strongly characteristic structural aspect of this habitat feature. It will be a response to water transparency, sediment type and disturbance. Little Sea is a shallow lake throughout (mean depth 0.5m) so zonation to deep water is not represented. Along the shoreline, there is mostly a vertical abrupt edge (because of invasion by Salix) where there were once shelving edges; thus the zonation to shallow water and grazed wet flushes (of dune slacks) has mostly gone and several rare plants have been lost as a result (Pearman 1997, Cox 2007).	Pearman, D. (1997) The vegetation of the Little Sea, *Recording Dorset*, 7, pp.37-39 . Cox J H S (2007). Botanical diversity in clearings created around Little Sea, Studland Peninsula, Dorset, monitored between 1996 and 2005. Natural England internal report.
Structure and function (including its typical species)	**Macrophyte community structure**	Restore maximum depth of plant colonisation. This will often be the maximum depth colonised by *Isoetes.*	This is a strongly characteristic structural aspect of this habitat feature. It will be a response to water transparency, sediment type and disturbance. The carp now present in the lake have made the water turbid with resultant loss of plants from all but the shallowest areas.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Physical structure - lake shoreline**	Maintain the natural shoreline of the lake.	Inclusion of hard engineering solutions to lake management will have detrimental effects on lake ecology, replacing near-natural substrates with man-made materials (although note that alterations to the shoreline have occurred through invasion by willow (see macrophyte community structure) which is likely to	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			have been at least partly the result of past eutrophication from sewage inputs (now ceased).	
Structure and function (including its typical species)	**Physical structure - lake substrate**	Restore the natural and characteristic substrate for the lake. Substrate is typically sand, gravel and stones with low organic content, <5% loss on ignition.	The distribution of sediment particle size and organic content influences the biology of the lake and will affect the suitability of within-lake habitats for invertebrates and macrophytes. Increases in sediment loading from activities in the catchment area, including those on the lake shore, may result in the smothering of coarse sediments. Increased inputs of leaf litter, as a result of scrub encroachment, may also be cause for concern, as organic-rich sediments may be a poor rooting medium for macrophytes. Information about sediment characteristics is lacking (but the colonisation of the shoreline and Pipley Swamp upstream of the lake by willow may have affected the organic content of the sediment.	
Supporting processes (on which the feature relies)	**Water quality - phosphate**	Restore stable nutrient levels appropriate for lake type. The maximum annual mean concentration of total phosphorus (TP) is 10 µg P l^{-1} for oligotrophic lakes. These should be met unless site specific targets are available.	Increased loadings of P to a water body are likely to lead to higher algal biomass in the water column, which in turn can have significant impacts on the lake e.g. through competition with vascular plants for nutrients and light, changes in pH, oxygen depletion and production of toxins. There has been no palaeolimnological work or hindcast modelling to reconstruct natural background TP concentrations for this lake but given the catchment geology and extremely low nutrient status of the incoming stream there would seem to be no reason why the natural condition of the lake should not be oligotrophic. Water chemistry data indicates that TP is significantly higher than the target of 10 µg P l^{-1} (average annual TP 2014-2018 is 47.2 µg P l^{-1}). Also averages conceal unexplained spikes. Data indicates that TP has increased since the 1990s and early 2000s (APEM 2013) although it was still above 10 µg P l^{-1} then. Orthophosphate levels are below 5 µg P l^{-1}. Restoration should involve stopping or limiting inputs from foul water overflows; investigation of internal nutrient cycling (a possible legacy of historic sewage inputs, and possibly exacerbated by carp); investigation of any inputs from septic tanks in the catchment.	APEM 2013. Lake Restoration Plan and Nutrient Budget: Little Sea, Studland, Dorset. Report to National Trust EA water quality archive Most recent EA WFD Cycle 2 classification for Total P (2016) is moderate against a target of high for 2027 (EA catchment data explorer).
Supporting processes (on which the	**Water quality - nitrogen**	Restore a stable total nitrogen concentration which is typically between 1-2mg/l	There is an increasing understanding that some standing waters are sensitive to nitrogen (N) enrichment and eutrophication may be driven by increases in N. Although data	APEM 2013. Lake Restoration Plan and Nutrient Budget: Little Sea, Studland, Dorset. Report to

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
feature relies)			suggests this lake is P limited (APEM 2013) recent higher values of total nitrogen (up to 3.4mg/l when typically values were between 0.5 and 1.5mg/l) suggests that there may be some issues with N. Total oxidised N values are low and contribute little to total N. N targets should be used in combination with P targets to develop a management strategy for the lake that reduces all nutrient inputs.	National Trust EA water quality archive.
Supporting processes (on which the feature relies)	**Water quality - acidity**	Acidity levels should reflect unimpacted conditions, typically with a pH value < 7.	Changes in pH can alter the entire freshwater community present within a water body affecting all trophic levels. Potential causes of a shift in pH include air pollution. Although, pH naturally fluctuates throughout the year, e.g increased plant biomass in summer may result in large fluctuations in pH, including daytime increases in pH values. Therefore pH is not used as a monitoring target, however its importance in affecting many in lake processes means that the pH of a water body should not be artificially altered. There are discrepancies in pH values between different Little Sea data sets so it is not known if the higher values in the EA data (up to 8.9 with very few readings under 7) are significant.	APEM 2013. Lake Restoration Plan and Nutrient Budget: Little Sea, Studland, Dorset. Report to National Trust EA water quality archive
Supporting processes (on which the feature relies)	**Water quality - other pollutants**	Achieve Good chemical status (i.e. compliance with relevant Environmental Quality Standards).	A wide range of pollutants may impact on habitat integrity depending on local circumstance. Good chemical status includes a list of EQSs for individual pollutants that are designed to protect aquatic biota with high levels of precaution.	
Supporting processes (on which the feature relies)	**Water quality - dissolved oxygen**	Adequate dissolved oxygen levels for health of characteristic fauna. Dissolved oxygen standards should be > 7.0mg/l throughout the year.	As for species in terrestrial environments, dissolved oxygen (DO) is required for respiration by aquatic organisms. Anthropogenic activities leading to phytoplankton blooms and increased loadings of organic matter to lakes can cause decreases in the concentration of dissolved oxygen available to support the species present. Mean dissolved oxygen refers to DO being measured at 0.5m intervals throughout the entire water column where the water column is not stratified and measurements taken at 0.5 m intervals below the thermocline only where stratification occurs.	No data is available for dissolved oxygen.
Supporting processes (on which the feature relies)	**Water transparency**	Restore the clarity of water with turbidity similar to values recorded between 2003 and 2006	Water transparency is the major determinant of the depth of colonisation by macrophytes, therefore, it should not be reduced. Turbidity between 2003 and 2006, when the water appeared clear, was between 2.4 and 3.1 ntu (EA data, annual average). Following the colonisation of the lake by carp from about 2007, the lake became turbid and aquatic plants declined	Cox J 2016. Aquatic Plants surveys in the Western Arm, Little Sea: A comparison between 2002, 2013 and 2016. Natural England internal report.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			so that by 2013 hardly any macrophytes remained. Since 2013 following removal of many carp by netting the situation has improved a little and some aquatic plants have returned. But turbidity remains much higher than in the 2000s (between 7.5 and 15.4 ntu – annual average 2016-2018). Increased sediment loads to a lake can also affect turbidity but there are no indications that this is an issue here.	Goldsmith B., ENSIS Ltd., 2012. *Little Sea: Summary of Aquatic Plants from 2003, 2009 & 2012*, results summary to Natural England. EA fish survey 2007 (finding only sticklebacks and eels).
Supporting processes (on which the feature relies)	**Water quality - algae**	Restore the Chlorophyll a concentration to comply with WFD high ecological status without and not have a negative impact on the ecosystem. Blooms of blue-green or green algae should not occur in low nutrient waters.	Chlorophyll is the pigment used for photosynthesis by plants, and the concentration of chlorophyll in the water column during the growing season therefore provides a good measure of the abundance of phytoplankton. Phytoplankton is an important driver of structure and function in lakes and high phytoplankton levels (algal blooms) are usually associated with nutrient enrichment. l. UKTAG Lake Assessment Methods: Phytoplankton. Chlorophyll a and Percentage Nuisance Cyanobacteria are available online at: http://www.wfduk.org/sites/default/files/Media/Characterisation%20of%20the%20water%20environment/Biological%20Method%20Statements/lake%20phytoplankton.pdf Little Sea in the last few years has been classified by EA as having moderate (occasionally good) status.	EA catchment data explorer with WFD assessment for phytoplankton moderate in 2014 and 2015, and good in 2013 and 2016.
Supporting processes (on which the feature relies)	**Air quality**	Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	**Hydrology**	At catchment level as necessary, maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. Site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. Hydrology influences lake ecosystem functioning in two ways: determining residence time (flushing) and water level fluctuations. Flushing of lakes is important for dilution and removal of nutrients and phytoplankton, and for reduction in sedimentation. The timing of different flushing rates within the year influences the biology of the lake. For example, reduced flushing in summer would encourage bloom conditions. Modifications of inflows and outlets or changes in hydrology, e.g. from flood control regimes, abstraction and gravel removal can lead to unnatural changes in lake levels.	
Supporting processes (on which the feature relies)	**Sediment load**	Maintain the natural sediment load	Increased sediment loadings may result in clogging of the lake bed, increased siltation in the basin and deoxygenation of sediments. Blockage of coarser substrates with finer sediment restricts water flow-through, whilst increases in organic matter increase biochemical oxygen demand. Increases in the sediment load also increases nutrient loads to a site. Examples of causes of increases in siltation include: increased lake productivity, changes in catchment land-use, lake level fluctuations or climatic fluctuations. There is some unnatural erosion where the incoming stream flows through a deep gulley and although sediment from there may largely have settled out before reaching Little Sea remedial measures would still be beneficial.	
Supporting processes (on which the feature relies)	**Supporting off-site habitat**	Restore the quality of land or habitat surrounding or adjacent to the lake.	The structure and function of the qualifying habitat, including its typical species, relies upon the condition of surrounding areas and can be affected by changes in surrounding land-use. Control of willow on neighbouring wetlands would be beneficial to the lake, particularly in Pipley Swamp (which the stream feeding the lake passes through) so as so increase the nutrient retention capacity there.	

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Version Control Advice last updated: N/A			
Variations from national feature-framework of integrity-guidance: Attribute relating to **functional connectivity / isolation** removed as not considered relevant to this feature within this SAC.			

Table 4: Supplementary Advice for Qualifying Features: H4010. Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath. H4020 Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix* H4030 European Dry Heath. H7150 Depressions on peat substrates of the *Rhynchosporion*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Restore the total extent of the H4010, H4020, H4030 and mosaic of H7150 wet heath, dry heath and mire communities so as to correspond with the historical extent of these to habitats**.** Maintain the current extent of the H4010, H4020, H4030 and H7150 wet heath, dry heath and mire communities. .	There should be no reduction (excluding any trivial loss) in the extent and area of these features, and in some places, the full extent of these features should be restored. In addition there should be no loss or reduction of the potential for restoring these habitats. Up to date measurements of the extent of these habitats across all of the Dorset heaths 42 SSSIs are not available but do exist for some individual SSSIs where a single extent target has been set for the wet heath, dry heath and mire communities because they are present as a complex mosaic of communities with transitions between the habitats; this makes it difficult to map the individual features. The features also occur in a mosaic and transitions make boundaries difficult to define. As a result values for extent are hard to determine with sufficient accuracy to be repeatable and useful as a way of measuring any reduction in area. Dynamic changes between different heath and mire communities may occur naturally but not an overall reduction in the extent of heath and mire communities. Changes as a result of artificial factors are unlikely to be acceptable. Heathland restoration is necessary in some areas where former heathland has been invaded by trees and scrub. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis.	DERC (2006) NVC Survey of Dorset Heaths SAC 1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	**For the H4010, H4020, H4030 and H7150 features:** Restore the distribution and	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		configuration of the feature, including where applicable its component vegetation types, across the site	composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature. Within the SACs invasion by trees and scrub has reduced the area and distribution of these features, hence the need for restoration.	Report to Natural England Cox J 1996 The Dorset Heaths possible Special Areas of Conservation; a scientific account. Report to English Nature Cox J 1994 An appraisal of the Dorset Heathlands Ramsar site. Report to English Nature Edwards B 1997 Bryophyte Survey of the Poole Basin mires Report to English Nature. 1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Structure and function (including its typical species)	**Vegetation community transitions**	**For the H4010, H4020, H4030 and H7150 features:** Restore any areas of transition between this and communities which form other heathland-associated habitats, such as dry and humid heaths, mires, acid grasslands, scrub and woodland.	Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna. This is an important attribute as many characteristic heathland species utilise the transitions between vegetation types or use different vegetation types during different stages of their life cycle.	
Structure and function (including its typical species)	**Vegetation community composition**	**For the H4010, H4020, H4030 and H7150 features:** Ensure the component vegetation communities of the feature are referable to and characterised by the following	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC).	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		National Vegetation Classification type: H2 *Calluna vulgaris – Agrostis curtisii* heath H3 *Ulex minor – Agrostis curtisii* heath H4 *Ulex gallii – Agrostis curtisii* heath H8 *Calluna vulgaris – Ulex gallii* heath M1 *Sphagnum auriculatum* bog pool; M16 *Erica tetralix – Sphagnum compactum* wet heath M21 *Narthecium ossifragum – Sphagnum papillosum* mire	Maintaining or restoring these characteristic and distinctive vegetation types and the range of types as appropriate, through measures outlined elsewhere, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations). Other NVC communities, M14 *Schoenus nigricans* –. *Narthecium ossifragum* mire and M25 *Molinia caerulea-Potentilla erecta* mire, can also support *Erica ciliaris* Dorset Heath (the characteristic plant species of H4030 Southern Atlantic wet heath).	
Structure and function (including its typical species)	**Vegetation structure: cover of dwarf shrubs**	**For the H4010, H4020, H4030 and H7150 features:** Restore an overall cover of dwarf shrub species which is typically between 75-90%	Variations in the structure of the heathland vegetation (vegetation height, amount of canopy closure, and patch structure) is needed to maintain high niche diversity and hence high species richness of characteristic heathland plants and animals. Many species also utilise the transitions between vegetation types or use different vegetation types during different stages of their life cycle. The structural character of the heathland feature is strongly influenced by the growing habits of its dominant species which in most cases will be ericoids (i.e. plants that look like heathers, including members of the *Ericaceae* and *Empetraceae* families). On the Dorset Heathlands, heath and mire swards can be expected comprise from about 75% to near 100% cover of ericaceous, dwarf gorse and other characteristic plant species. The abundance of ericaceous species and dwarf gorses can be	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			naturally low at early stages in cyclical succession but should prevail (>75% cover) at later stages. The attribute is relevant in cases where multiple negative features might affect a single unit (e.g. bracken, tree invasion, exotic plants, and gorse blocks) and although each may be within acceptable limits together they affect a high proportion of a unit. Dwarf shrubs that may contribute to the target on Dorset Heaths are *Calluna vulgaris, Erica cinerea, E. tetralix, E. ciliaris; Ulex minor, Ulex gallii, Vaccinium myrtillus*. Sward structure, composition and cyclical succession, and the quality and abundance of other designated features are vulnerable to degradation from development related effects and inappropriate types, levels and patterns of recreation and amenity use	
Structure and function (including its typical species)	**Vegetation structure: heather age structure**	**For the H4010, H4020, H4030 and H7150 features:** Maintain a diverse age or sward structure amongst the ericaceous shrubs typically found on the site In wet heath Molinia <50% and tussocks not dominate to exclusion of other species.	Each phase of growth associated with the characteristic heathers which dominate this feature also represents different microclimatic conditions and microhabitats which may provide shelter or food to other organisms. Within the Dorset Heaths, this age structure varies both within and between swards and sites. On many areas with mature heather that has not been burnt for many years, different age classes of heather will develop within the sward. For these areas, near natural structural development with limited intervention (normally only low intensity grazing, preferably at a landscape scale, plus control of some invasive species and specific management for selected species interests) is generally desirable. However, management needs to reflect the many differences between sites, e.g. in size, representation of different habitats, management history, the inherent fertility of the soils and species interests. In a few cases, where interest features require short open swards, e.g woodlark, management may be	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			geared towards having a higher representation of pioneer stages, either permanently or temporarily. Where species interests require deep heather, e.g. sand lizard, representation of pioneer stages of heather is likely to be much lower.	
Structure and function (including its typical species)	**Vegetation structure: cover of gorse**	**For the H4010, H4020, H4030 and H7150 features:** Cover of common gorse is low, typically 1-20% predominantly as a small scale patchwork in heath, leggy degenerate growth rare;	Gorse as a component of heathland is a very valuable wildlife habitat, and often a marker of relict heath and common. Both dense and spiny, it provides good, protected cover for many wildlife species: birds, mammals and reptiles; breeding habitat for rare or declining bird species, and excellent winter roosting. The flowers, borne at a time of year when other sources of pollen or nectar are in short supply, are particularly good for invertebrate pollinators. However gorse may cause problems if unchecked by dominating an area, eliminating other typical heathland species. Mature stands en masse or gorse next to tracks and firebreaks can also be fire hazards. Judgement will be needed when assessing this attribute as levels of gorse cover will vary across the SAC at any one time. There should be no indication of declining condition of the associated habitat due to increasing dominance of gorse.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Vegetation structure: tree cover**	Restore the open character of the feature, with a typically scattered and low cover of trees and scrub (<10% cover). Sites with little existing tree cover should be maintained in that state.	Scrub (mainly trees or tree saplings above 1 m in height) and isolated trees are usually very important in providing warmth, shelter, cover, foodplants, perches, territorial markers and sources of prey for typical heathland invertebrates and vertebrates. But overall cover of scrub and trees across this habitat feature should be maintained or restored to a fairly sparse level, with a structurally complex edge and with characteristic heathland vegetation as ground cover. The area of scrub/tree cover should be stable or not increasing as a whole with isolated/small clumps of mature trees at less than 10/ha; predominantly only pioneer species (e.g. Scot's pine, birch and willow) within the heath.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its	**Vegetation composition: bracken cover**	**For the H4010, H4020, H4030 and H7150 features:**	The spread of bracken *Pteridium aquilinum* is a problem on many lowland heathlands. The unpalatable nature and density of bracken as a tall-herb fern, and its decomposing litter, can	This attribute will be periodically monitored as part of Natural England's SSSI Condition

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)		Restore a cover of dense bracken which is low, typically at [<5%]	smother and shade out smaller and more characteristic heathland vegetation. Active management of bracken is required in places to reduce or contain its cover across this habitat feature. But this fern has also some nature conservation value, for example on sites where fritillary butterflies occur and utilise bracken litter habitat.	Assessments
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	**For the H4010, H4020, H4030 and H7150 features:** Restore the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature. • The constant and preferential plants of the NVC communities which form a key components of a SAC habitat that is present (NVC communities listed above) • Reptile assemblage including Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca*. • Heathland invertebrate assemblage (numerous rare and scarce species) • Vascular plant assemblage (see list of heath and mire plants in Appendix 1)	See explanatory notes for this attribute in Table 1 Bare ground is a key supporting habitat for reptile and invertebrate assemblage. Typical species such as the rare reptiles are vulnerable to effects associated with heaths in urban locations such as a high incidence of fires, predation by domestic cats and trampling or disturbance of egg-laying sites. Public access to lowland heathland from nearby residential developments and other proposals that lead to an increase in visitor numbers, or changes in the pattern of public access may increase the frequency of these effects. These effects are most marked within 400m of heathland. A strategic approach to avoiding and mitigating for potential impacts arising from recreational pressure as a result of new residential development has been developed for the Dorset Heathlands in response to the significant levels of growth in emerging regional plans. The mitigation strategy for the Dorset Heathlands has now been in place since 2006, The Dorset Heathlands Planning Framework Supplementary Planning Document 2015 – 2020 (SPD) sets out the detailed approach to the avoidance and mitigation of adverse effects of development on the Dorset Heathlands. The guiding principle of the SPD is that there is no net increase on urban pressures The SPD retains as its guiding principle that there is no net increase in urban pressures on internationally important heathland as a result of development,	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments Underhill-Day, J.C. (2005) *A literature review of urban effects on lowland heaths and their wildlife*. English Nature, Peterborough. Kirby, J.S. & Tantram, D.A.S. (1999) *Monitoring heathland fires in Dorset: Phase 1*. Fearnley, H., & Liley, D. (2011). Analysis and Presentation of IPF monitoring and projects to inform the Heathland DPD. Footprint Ecology. Floyd, L., Underhill-Day, J. C. (2013). Literature Review on the effects of cats on nearby protected wildlife sites. Unpublished report by Footprint Ecology for Breckland Council.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation: undesirable species**	**For the H4010, H4020, H4030 and H7150 features:** Restore the frequency/cover of the following undesirable species to absent or <1% cover and not spreading, and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. Negative indicators include: *Rhododendron ponticum, Gaultheria shallon, Fallopia japonica.* *Apium nodiflorum, Cirsium arvense, Epilobium spp. (excl. E. palustre), Glyceria fluitans, Juncus effusus, J. squarrosus, Oenanthe crocata, Phragmites spp., Ranunculus repens, Fallopia japonica, Senecio jacobaea, Rumex obtusifolius, Typha spp., Urtica spp.* *Alnus glutinosa, Betula spp., Prunus spinosa, Pinus spp., Rubus spp., Salix spp, Quercus spp. Acrocarpous* mosses. Non-heathland grasses indicative of high nutrient status (ie with high Ellenberg values for nitrogen) such as *Dactylis glomerata* are negative indicators often colonising along tracks where dog walking is frequent (the result of dog excrement). The measures outlined above in relation to typical species and new housing or other development apply here too.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments Underhill-Day, J.C. (2005) *A literature review of urban effects on lowland heaths and their wildlife*. English Nature, Peterborough.
Structure and function (including its typical species)	**Ecological condition of heathland fragments and functional connectivity with wider landscape**	**For the H4010, H4020, H4030 and H7150 features:** Restore the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the need at this site to maintain or restore connectivity between fragments in order to meet the conservation objectives. Particularly important is heathland restoration in the wider landscape, reversing the historic loss and fragmentation of these heaths and increasing the size of fragments. Such measures can both restore connectivity and counteract edge effects on the SACs. Connections may also take the form of landscape features, such as habitat patches, watercourses and verges, outside of the designated site boundary which may be important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			and its features may rely. Increasing actual and functional landscape-scale connectivity would be beneficial.	
Structure and function (including its typical species)	**Adaptation and resilience**	**For the H4010, H4020, H4030 and H7150 features:** Restore the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Supporting processes (on which the feature relies)	**Conservation measures**	**For the H4010, H4020, H4030 and H7150 features:** Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the features	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	
Supporting processes (on which the feature relies)	**Soils, substrate and nutrient cycling**	**For the H4010, H4020, H4030 and H7150 features:** Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitats.	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature. This Annex 1 habitat has essentially raw soils with little humus and low nutrient status and in Dorset, little capacity to retain phosphorus.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	**Air quality**	**For the H4010, H4020, H4030 and H7150 features:** Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature relies)	**Water quality**	**For the H4010, H4020, H4030 and H7150 features:** Where the feature is dependent on surface water and/or groundwater restore] water quality to a standard which provides the necessary conditions to support the feature.	Maintaining or restoring the quality of water supply to wet heath and mire features is critical. Poor water quality is likely to adversely affect the function of these habitat types with raised major nutrients (nitrogen and phosphorus) a particular problem. This issue for the H7150 Rhynchosporion feature is considered below under water chemistry. Values for major nutrient concentrations for the wet heath features are likely to be similar. Presence in wet heath or mire of species with high Ellenberg values for nitrogen (such as common reed or willow) often indicates raised major nutrients from unnatural sources. Vigorous growth of mire species such as *Myrica gale and Molinia caerulea* may also be a sign of water quality problems. All of these features are dependent on acid conditions and so operations that artificially raise pH of groundwater or surface water runoff (such as inert fill of quarries in mire or wet heath catchments, discharges of calcareous mains water or use of limestone chippings on tracks or paths) are likely to be harmful and contrary to the conservation objectives.	Hill, M.O.; Mountford, J.O.; Roy, D.B.; Bunce, R.G.H. 1999 *Ellenberg's indicator values for British plants. ECOFACT Volume 2 Technical Annex.* Huntingdon, Institute of Terrestrial Ecology, 46pp. (ECOFACT, 2a)
Supporting processes (on which the feature relies)	**Hydrology**	**For the H4010, H4020, H4030 and H7150 features:** At a unit and/or catchment level, restore the natural hydrological regime to provide the conditions necessary to sustain the feature within the site and where	Defining and maintaining or restoring an appropriate hydrological regime – which will normally be a natural hydrological regime - is a key conservation objective for this site and for sustaining these features. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. On some mires, natural hydrology has been disrupted by artificial ditches and	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		necessary restore natural hydrology	these are where restoration is needed through ditch infilling or blocking. There are a number of examples where restoration by infilling ditches has been successfully achieved Development that interferes with natural hydrology, such as mineral winning within mire and wet heath catchments, may be contrary to the conservation objectives.	
Structure and function (including its typical species)	**Invasive, non-native and/or introduced species**	**For H7150 Depressions on peat substrates of the *Rhynchosporion only:*** Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the feature	Invasive or introduced non-native species can be a serious potential threat to the structure and function of these habitats, because they are able to exclude, damage or suppress the growth of their associated typical species, reduce structural diversity of the habitat and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides).	
Structure and function (including its typical species)	**Presence/ cover of woody species**	**For H7150 Depressions on peat substrates of the *Rhynchosporion only:*** Restore a very low cover <1%, not on seepages and predominantly dwarfed or at immature growth stages; seedlings and saplings no more than rare.	Native trees and shrubs occur naturally on bog and fen surfaces but an abundance of scrub and trees on bogs and fens is detrimental. They are indicators and perpetrators of drying out or of nutrient enrichment and may cause damage to vegetation structure through shading effects. Birch, pine, willow and rhododendron (an invasive non-native species) are the main species of concern. The seeds of most invasive woody species are wind dispersed, so trees are able to establish on raised bog and fen surfaces.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Exposed substrate**	For H7150 Depressions on peat substrates of the *Rhynchosporion only:* Maintain a low cover of exposed substrate of between 5-10% across feature.	For this wetland habitat type, maintaining some continuous extent of exposed, open ground surface is required to support the establishment and supply of those component species which often rely on wet and sparsely-vegetated conditions.	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Water chemistry**	**For H7150 Depressions on peat substrates of the *Rhynchosporion only:*** Maintain the surface water and	UKTAG (2012) provides threshold values for nitrate concentration in groundwaters for different wetland types but although there is no groundwater data for Dorset heath mires it is unlikely that these high nitrate values in the UKTAG report are appropriate given the extreme low nutrient status of surface water in mires with natural heathland catchments (typically	Recent unpublished data on nutrient status of mire surface waters from NE/EA as part of work on the Dorset heath wetlands connected with a judicial review

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		groundwater supporting the hydrology of bogs at a very low nutrient status and restore those bogs affected by artificial nutrient inputs.	orthophosphate <0.001mg/l, nitrate <0.01mg/l). Some mires have orthophosphate and nitrate nutrient concentrations in surface water much greater than this because of known artificial nutrient inputs (sometimes, usually in combination with drainage, leading to the complete loss of the feature) and these are where restoration to low nutrient status is required. Any artificial nutrient inputs, where there is pathway between a discharge and the feature, are likely to be contrary to the objectives and so have an adverse effect (e.g. discharges from package sewage treatment plants, overflows or leakages from septic tanks, storm overflows of sewage, leachate discharges from landfills, urban surface water drainage or fertiliser run off from fields).	
Structure and function (including its typical species)	**Hydrology**	**For H7150 Depressions on peat substrates of the *Rhynchosporion only:*** Maintain a high piezometric head and permanently high water table (allowing for natural seasonal fluctuations) on groundwater dependent sites and restore these conditions where necessary.	Some examples of H7150 may be wholly or partly groundwater dependent. Others have a greater dependence on surface water or rain water inputs. It is critical to understand the ecohydrological context of all sites; although the feature will tolerate some drying in summer, generally it is characterised by a permanently high water table. Maintaining or restoring natural hydrology is in most circumstances sufficient to achieve this objective and sites affected by artificial drainage are where restoration is required. Development that interferes with natural hydrological processes, such as mineral winning within mire and wet heath catchments, is likely to be contrary to the conservation objectives.	
Structure and function (including its typical species)	**Supporting off-site habitat**	**For H7150 Depressions on peat substrates of the *Rhynchosporion only:*** Restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the feature	The structure and function of the qualifying habitat, including its typical species, may rely upon the continued presence of areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect or already be affecting the functioning of the feature and its component species particularly by affecting hydrology. Here the objective is to restore natural hydrology so as to remove the adverse effect on the SAC. This supporting habitat may also be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment.	
Version Control Advice last updated: **25 March 2019** following stakeholder feedback. Explanatory notes for **Vegetation structure: heather age structure** attribute revised to highlight need that some key species require a variety of heather age structures within an individual SSSI.				
Variations from national feature-framework of integrity-guidance: N/A				

Table 5: Supplementary Advice for Qualifying Features: H6410. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Restore the total extent of the feature to reverse any reduction due to scrub invasion or other factors	There should be no reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored (taking account of the likely historical extent). The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present. The feature occurs in an intimate mosaic with other wetland habitats. Transitions between these habitats make boundaries difficult to define. As a result values for extent are hard to determine with sufficient accuracy to be repeatable and useful as a way of measuring any reduction in area. Some acceptable changes in the extent of Alkaline Fen may to occur as a result of natural processes. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis.	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Report to Natural England 1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Restore the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Report to Natural England Blue Pool and Norden Heaths phase 1 survey (English Nature). Winfrith Heath NVC survey for Dorset Wildlife Trust. Cox J 1996 The Dorset Heaths possible Special Areas of Conservation; a scientific account. Report to English Nature

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature. Within the two SACs, this feature is found at Corfe Common, Brenscombe Heath, Blue Pool and Norden Heaths, Rempstone Heaths, Winfrith Heath, Holton and Sandford Heaths, Corfe Mullen Pastures, Cranborne Common and Povington and Grange Heaths	Cox J 1994 An appraisal of the Dorset Heathlands Ramsar site. Report to English Nature Edwards B 1997 Bryophyte Survey of the Poole Basin mires Report to English Nature
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type : M24 *Molinia caerulea - Cirsium dissectum* fen-meadow;	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Report to Natural England
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature • The constant and preferential plants of the NVC community type which forms a key component of a SAC habitat that is present M24 *Molinia caerulea - Cirsium dissectum* fen-meadow;	See explanatory notes for this attribute in Table 1	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation: undesirable species**	Restore the frequency/cover of the following undesirable species to absent or <1% cover and not spreading, prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread.	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. Negative indicators include: *Cirsium arvense, Cirsium vulgaris, Juncus effuses, Phragmites australis, Senecio spp, Rubus sp, Urtica dioica*	
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain the pattern of natural vegetation zonations/transitions	Transitions/ zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat. For this feature, soil P index should typically be index 0 (< 9 mg l -1)	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature.	
Structure and function (including its typical species)	**Water quality**	Restore water quality and quantity to a standard which provides the necessary conditions to support the feature [adviser to provide site-specific standards where available].	For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality of water supply will be critical, especially at certain times of year. Poor water quality and inadequate quantities of water can adversely affect the structure and function of this habitat type. There is no water quality information available for this feature on the Dorset heaths but since it occurs in a mosaic with other wetland SAC features sensitive to nutrient enrichment it will normally be sufficient to maintain or restore	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			the water quality for these features.	
Structure and function (including its typical species)	**Hydrology: Water table**	Maintain a hydrological regime that provides a sub-surface water table during the summer (range -2 to -48 cm below ground level) and a winter water table ± at the surface. Inundation should be absent or only occasional to a minor degree in winter	Defining and maintaining the appropriate hydrological regime is a key step in achieving the conservation objectives for this site and sustaining this feature. Changes in depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. This target is generic and as precise tolerances are not known, further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts.	
Structure and function (including its typical species)	**Supporting off-site habitat**	Restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the feature [adviser to add any details of such off-site habitat where known].	The structure and function of the qualifying habitat, including its typical species, may rely upon the continued presence of areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. This supporting habitat may be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment.	
Structure and function (including its typical species)	**Maintaining integrity of hydrological catchment**	Maintain the full range of hydrological/ hydrogeological aspects of a site's catchment that contribute to its functioning and the maintenance of the feature	The movement, quality and distribution of water within a site's wider catchment and outside of the site's boundary will affect its ability to support this wetland habitat feature. Catchment size will vary. A site's water table and other hydrological aspects may be adversely affected by changes in the use of the land surface, water abstraction, flood alleviation, development and mineral extraction in the wider catchment.	
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Restore the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape, and where possible to reverse the historic fragmentation of the Dorset heaths, in order to meet the conservation objectives. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Adaptation and resilience**	[Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Supporting processes (on which the feature relies)	**Air quality**	Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature relies)	**Conservation measures**	Restore the management measures which are necessary to restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Conservation measures for this feature typically include grazing, cutting, scrub management, weed control, recreation/visitor management. Also covered is maintenance of surface drainage features such as drains, grips, gutters and foot drains. Retention of suitable land use infrastructure/ patterns to enable site management e.g. pastoral livestock farming	
Version Control: Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

Table 6: Supplementary Advice for Qualifying Features: H7210. Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge) *

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature to 0.09ha	This target is included as there should be no reduction (excluding any trivial loss) in the extent of this feature. Area measurements given may be approximate depending on the nature, age and accuracy of data collection. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features.	McGibbon 1988; Phase 1 SSSI survey Edwards, B 2013. Assessment of sites suitable for freshwater habitat creation and restoration in the lower Frome and Piddle catchments. Dorset Environmental Records Centre report for EA
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	Distribution includes the spatial pattern or arrangement of this habitat feature, and its component vegetation types, across the site. Changes in distribution may affect the nature and range of the vegetation communities present, the operation of the physical, chemical, and biological processes in the system and the resiliency of the site and its features to changes or impacts. Within the Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC, this feature is found within The Moors SSSI and within the Dorset Heaths SAC in Wareham Meadows SSSI.	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type: • S2 *Cladium mariscus* swamp and sedge beds	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature.	Edwards, B 2013. Assessment of sites suitable for freshwater habitat creation and restoration in the lower Frome and Piddle catchments. Dorset Environmental Records Centre report for EA.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Invasive, non-native and/or introduced species**	Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the feature	Invasive or introduced non-native species can be a serious potential threat to the structure and function of these habitats, because they are able to exclude, damage or suppress the growth of their associated typical species, reduce structural diversity of the habitat and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides). Spread of invasive alien spp. can often be very rapid once established. Invasive aliens within lowland fens may include *Crassula helmsii, Acorus calamus, Mimulus spp., Impatiens glandulifera, Fallopia japonica, Heracleum mantegazzianum*. May include graminoids such as *Phragmites australis, Phalaris arundinacea, Glyceria maxima, Typha latifolia, Juncus spp., Molinia caerulea; tall herbs such as Epilobium hirsutum, Urtica dioica, Pteridium aquilinum, Rubus fruticosus; and bryophytes such as Brachythecium rutabulum, Eurhynchium praelongum, Sphagnum recurvum*.	
Structure and function (including its typical species)	**Presence/ cover of woody species**	Maintain the fen free from trees and scrub	Tree and scrub cover should be absent from the Cladium fen itself. At The Moors SSSI, adjacent mature wet woodland on swamp / lowland valley mire is an important component for some species features especially marsh fern *Thelypteris palustris (T. thelypteroides*) and adequate habitat should be present to maintain a viable presence of these species.	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature [*adviser* to *list species meeting the 3 criteria in the notes - site-distinctive species will include any mentioned in the SAC's Citation and/or in the site's FCT under a 'distinctiveness' attribute*]	See explanatory notes for this attribute in Table 1	This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		• The constant and preferential plants of the NVC community type which forms a key component of a SAC habitat that is present • S2 *Cladium mariscus* swamp and sedge beds • Vascular plant assemblage • Invertebrate assemblage		
Structure and function (including its typical species)	**Hydrology**	At a site, unit and/or catchment level (as necessary), restore natural hydrological processes to provide the conditions necessary to sustain the feature within the site	The fen at The Moors is defined as a '*Seepage Percolation Quag*' (Wheeler et al 2009) with the typical state of these types of fen being 'quaking or buoyant surface over rhizome mat; wet for much of year, but often not much flooded.' There are a number of ditches in the vicinity of the *Cladium* fen at The Moors. Most have become blocked and probably no longer function. The substantial ditch to the south is some 50m from the edge of the fen; a water sample with calcium concentration 36mg/l indicates some connection to the *Cladium* (see below). Water levels in this ditch do not vary much seasonally and remained high in the 2018 drought.	Wheeler, B.D., Shaw, S., & Tanner, K 2009 A wetland framework for impact assessment at statutory sites in England and Wales. Environment Agency report.
Structure and function (including its typical species)	**Water chemistry**	Maintain the low nutrient status of irrigating water, ensuring it is rich in base ions, particularly calcium.	A calcium concentration of 41 mg/l in the water emanating northwards from the fen (July 2018) at The Moors shows the different origin of this spring from the adjacent acid mire. It is unclear why there is a calcareous spring in this location. UKTAG (2012) provides threshold values for nitrate concentration in groundwaters for different wetland types but although there is no groundwater data for either Cladium fen it analysis of surface water at The Moors suggests these high nitrate values are not appropriate. Water emanating from the fen had a nitrate concentration of 0.25mg/l (July 2018). Water coming from a nearby calcareous source at Hartland Moor (Ca 40mg/l) had a similar nitrate concentration (0.35mg/l) suggesting they may be fed be the same aquifer.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Any artificial nutrient inputs, where there is pathway between a discharge and the feature, are likely to have an adverse effect (e.g. discharges from package sewage treatment plants, overflows or leakages from septic tanks, storm overflows of sewage or fertiliser run off from fields).	
Structure and function (including its typical species)	**Hydrology**	Maintain a high piezometric head and permanently high water table (allowing for natural seasonal fluctuations) on groundwater dependent sites.	Defining and maintaining the appropriate hydrological regime is a key step in achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. H7210 at The Moors is largely groundwater dependent.	Wheeler, B.D., Shaw, S., & Tanner, K 2009 A wetland framework for impact assessment at statutory sites in England and Wales. Environment Agency report
Structure and function (including its typical species)	**Adaptation and resilience**	[Maintain OR Restore] the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Structure and function (including its typical species)	**Supporting off-site habitat**	Restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the feature [adviser to add any details of such off-site habitat where known].	The structure and function of the qualifying habitat, including its typical species, may rely upon the continued presence of areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. This supporting habitat may be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
supporting processes (on which the feature relies)	**Air quality**	Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature relies)	**Conservation measures**	Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

Table 7: Supplementary Advice for Qualifying Features: H7230. Alkaline fens; Calcium-rich springwater-fed fens.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Restore the total extent of the feature to reverse any reduction due to scrub invasion or other factors.	There should be no reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present. The feature occurs in an intimate mosaic with other wetland habitats. Transitions between these habitats make boundaries difficult to define. As a result values for extent are hard to determine with sufficient accuracy to be repeatable and useful as a way of measuring any reduction in area. Some acceptable changes in the extent of Alkaline Fen may to occur as a result of natural processes.	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Report to Natural England This does not map the habitat but indicates that in the SSSIs below it mostly occurs in small patches (<0.5ha) with larger areas on some sites such as Hartland Moor. 1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Restore the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	Distribution includes the spatial pattern or arrangement of this habitat feature, and its component vegetation types, across the site. Changes in distribution may affect the nature and range of the vegetation communities present, the operation of the physical, chemical, and biological processes in the system and the resiliency of the site and its features to changes or impacts. H7230 Alkaline fen has a restricted distribution across the two Dorset Heaths SACs. The main locations are at Corfe Common, Brenscombe Heaths, Blue Pool and Norden Heaths, Rempstone Heaths, Studland and Godlingston Heaths and Povington and Grange Heaths, Hartland Moor, The Moors and Winfrith Heath SSSIs.	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Report to Natural England
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type:	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC).	Wheeler BR and Wilson P J, (2014) Survey of EC Habitats Directive Annex I wetland habitats in the Dorset heaths. Report to Natural England

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		M10a *Pinguicula vulgaris-Carex dioica mire, Carex demissa-Juncus bulbosus/kochii* sub-community. M22 *Juncus subnodulosus–Cirsium palustre* fen meadow, species-rich M22–M24 (*Molinia caerulea–Cirsium dissectum* fen meadow) transition, M14b *Schoenus nigricans-Narthecium ossifragum* mire and S2b *Cladium mariscus* swamp and sedge-beds	Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. For this feature this may typically be the M9, M10 & M13 types but detailed investigation by Wheeler and Wilson has identified a wider range of specific NVC communities corresponding to Alkaline Fen.	
Structure and function (including its typical species)	**Invasive, non-native and/or introduced species**	Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the feature	Invasive or introduced non-native species can be a serious potential threat to the structure and function of these habitats, because they are able to exclude, damage or suppress the growth of their associated typical species, reduce structural diversity of the habitat and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides).	
Structure and function (including its typical species)	**Presence/cover of woody species**	Restore a low cover of woody species corresponding to the historical distribution (or of not more than 10% scrub/tree cover). No woody species in flushes or springs.	Native trees and shrubs can occur naturally on bog and fen surfaces but most wetlands on the Dorset Heaths historically had no or little tree and scrub cover. Scrub and trees on bogs and fens is often detrimental because they are indicators and perpetrators of drying out, or of eutrophication or sediment deposition, and may cause damage to vegetation structure through shading effects. Birch, pine, willow and rhododendron (an invasive non-native species) are the main species of concern. The seeds of most invasive woody species are wind dispersed, so trees are able to establish on raised bog and fen surfaces.	1946, 1972 aerial photographs and OS 2nd edition 6 inch maps both available on https://explorer.geowessex.com/

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Browsing and grazing by herbivores**	Maintain appropriate levels of grazing,	Appropriate levels of grazing vary on the different sites but most stands benefit from grazing. Overall undergrazing be livestock is be more of an issue than overgrazing. .	
Structure and function (including its typical species)	**Exposed substrate**	Maintain the exposure of the substrate to appropriate levels, which will typically be between 5% & 25% across feature.	For this wetland habitat type, maintaining some continuous extent of exposed, open ground surface is required to support the establishment and supply of those component species which often rely on wet and sparsely-vegetated conditions. The open nature and sometimes skeletal nature of the substrate supporting these features requires a higher upper threshold than for some other wetlands.	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature [*adviser* to *list species meeting the 3 criteria in the notes - site-distinctive species will include any mentioned in the SAC's Citation and/or in the site's FCT under a 'distinctiveness' attribute*] • The constant and preferential plants of the NVC community type which forms a key component of a SAC habitat that is present M10a Pinguicula vulgaris-Carex dioica mire, Carex demissa-Juncus bulbosus/kochii sub-community	See explanatory notes for this attribute in Table 1	
Structure and function (including its typical	**Hydrology**	At a unit and/or catchment level maintain natural hydrological processes to provide the conditions necessary to sustain	Defining and maintaining the appropriate hydrological regime is a key step in achieving the conservation objectives for this site Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant effects. Site-specific	Wheeler, B.D., Shaw, S., & Tanner, K (2009) A wetland framework for impact assessment at statutory sites in England and

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
species)		the feature within the site, including a high piezometric head and permanently high water table (allowing for natural seasonal fluctuations).	investigations may be required to fully inform conservation measures and/or the likelihood of impacts. Alkaline fens of these SACs are represented by a number of different hydrological types including seepage flow tracks (fen arm Hartland Moor) and seepage percolation quag (The Moors) Wheeler et al. (2009)). The same authors provide range and mean for summer & winter water levels for those wetland NVC types constituting Annex 1 habitats. This provides a rough guide to appropriate levels, but it is critical that individual sites and their needs are considered as there is considerable variation within the NVC communities listed and recorded water levels.	Wales .Environment Agency report.
Structure and function (including its typical species)	**Water chemistry**	Maintain the low nutrient status of irrigating water, ensuring it is rich in base ions, particularly calcium.	UKTAG (2012) provides threshold values for nitrate concentration in groundwaters for different wetland types but although there is no groundwater data for any alkaline fen site analysis of surface water at both The Moors and Hartland Moor suggests these high nitrate thresholds are not appropriate. Water emanating from The Moors fen had a nitrate concentration of 0.25mg/l (July 2018) Water coming from a calcareous source at the head of the fen arm at Hartland Moor (Ca 40mg/l) had a nitrate concentrations of 0.35mg/l.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Structure and function (including its	**Functional connectivity with wider**	Restore the overall extent, quality and function of any supporting features within the local	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)	**landscape**	landscape which provide a critical functional connection with the site		
supporting processes (on which the feature relies)	**Air quality**	Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature relies)	**Conservation measures**	Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: Attribute relating to **Integrity of tufa** removed as tufa not present within the SAC.				

Table 8: Supplementary Advice for Qualifying Features: H9190. Old acidophilous oak woods with Quercus robur on sandy plains; Dry oak-dominated woodland.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature.	This target is included as there should be no reduction (excluding any trivial loss) in the extent of this feature. Area measurements given may be approximate depending on the nature, age and accuracy of data collection. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. For this feature, this attribute includes the extent of semi-natural wood-pasture mosaic area; tree area; the number of veteran trees (except through natural causes), including dead and living trees. Tree roots (particularly of veteran trees) may extend a considerable distance beyond the boundary of the site. A reduction of woodland/wood-pasture area - whether at the edge or in the middle of a site will reduce the core area where wood-pasture conditions are found - these support significant assemblages of species dependent on woodland conditions (e.g. lichens and bryophytes - being one example). Loss of any woodland area which fragments a site into different parts may interrupt the movement of species between the remaining parts of the woodland, especially those with limited powers of dispersal.	
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types: W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus woodland*	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature.	
Structure and function (including its typical species)	**Vegetation structure - old growth, open space, dead wood, age class distribution, woodland edge, regeneration potential, tree and shrub layer and species composition**	Maintain near natural structural development under minimum intervention; fallen dead wood left on site; invasive exotics notably rhododendron should be controlled	All of these attributes are important ecological characteristics of these woodlands but these woodlands are small areas within much larger heathland areas and most have developed for many years with little intervention and are grazed as part of large heathland grazing units. In these circumstances a minimum intervention objective is appropriate rather than attempting anything other than natural control over these attributes. Thus the objective reflects what is most appropriate for the woodland feature, taking account of its known interest, history, past management and the landscape context. For this habitat type, old or over-mature elements of the woodland are particularly characteristic and important features, and their continuity should be a priority.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation structure - ancient/ veteran tree trees**	Restore at least a third of ancient/veteran trees in open locations or with open halo around them.	Good woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The objective reflect one deviation from the minimum intervention objective to deal with those cases where secondary woodland has grown up around and veteran trees.	
Structure and function (including its typical species)	**Browsing and grazing by herbivores**	Maintain browsing at a (low) level that allows well developed understorey with no obvious browse line, & lush ground vegetation with some grazing sensitive species evident (bramble, ivy etc.), and tree seedlings and sapling common in gaps.	Herbivores, especially deer, are an integral part of woodland ecosystems. They are important in influencing woodland regeneration, composition and structure and therefore in shaping woodland wildlife communities. In general, both light grazing and browsing is desirable to promote both a diverse woodland structure and continuous seedling establishment. Short periods with no grazing at all can allow fresh natural regeneration of trees, but a long-term absence of herbivores can result in excessively dense thickets of young trees which shade out ground flora and lower plant species. However, heavy grazing by deer or sheep prevents woodland regeneration, and can cause excessive trampling and/or poaching damage, canopy fragmentation, heavy browsing, barkstripping and a heavily grazed sward. Low intensity grazing with cattle/ponies where the woodland is part of the heathland/woodland grazing unit is considered as a natural process;	
Structure and function (including its typical species)	**Regeneration potential**	Maintain the potential for sufficient natural regeneration of desirable trees and shrubs; typically tree seedlings of desirable species (above grazing and browsing height) should be visible in sufficient numbers in gaps, at the wood edge and/or as regrowth as appropriate	The regeneration potential of the woodland feature must be maintained if the wood is to be sustained and survive, both in terms of quantity of regeneration and in terms of appropriate species. Natural processes should predominate and it is recognised that the location of the woodland may change through natural expansion at the edge and development of open areas within.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature • The constant and preferential plants of the NVC community type which forms a key component of a SAC habitat that is present W10 Quercus robur – Pteridium aquilinum – Rubus fruticosus woodland W16 Quercus spp. – Betula spp. – Deschampsia flexuosa woodland • Epiphytic lichens • Dead wood invertebrates	See explanatory notes for this attribute in Table 1	
Structure and function (including its typical species)	**Invasive, non-native and/or introduced species**	Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the feature	Invasive or introduced non-native species are a serious potential threat to the biodiversity of native and ancient woods, because they are able to exclude, damage or suppress the growth of native tree, shrub and ground species (and their associated typical species), reduce structural diversity and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides). Such species can include Rhododendrons, snowberry, Japanese knotweed, giant hogweed and Himalayan balsam, for example. Similarly, this would include pheasants, rabbits and non-native invertebrate 'pest' species. *Rhododendron* species are the host of the pathogen causing	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Sudden Oak Death so it is desirable that this species is eradicated to remove this risk	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature.	
Structure and function (including its typical species)	**Root zones of ancient trees**	Maintain the soil structure within and around the root zones of the mature and ancient tree cohort [in or to] an un-compacted condition	The management of land within and around forest habitats which are characterised by ancient trees can be crucial to their individual welfare and long-term continuity, and the landscape they are part of can be just as or even more important. The condition of the soil surrounding such trees will affect their roots, associated mycorrhizal fungi and growth. Plants have difficulty in compacted soil because the mineral grains are pressed together, leaving little space for air and water which are essential for root growth. Unless carefully managed, activities such as construction, forestry management and trampling by grazing livestock and human feet during recreational activity may all contribute to excessive soil compaction around ancient trees.	
Supporting processes (on which the feature relies)	**Air quality**	Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature relies)	**Illumination**	Ensure artificial light is maintained to a level which is unlikely to affect natural phenological cycles and processes to the detriment of the feature and its typical species at this site.	Woodland biodiversity has naturally evolved with natural patterns of light and darkness, so disturbance or modification of those patterns can influence numerous aspects of plant and animal behaviour. For example, light pollution (from direct glare, chronically increased illumination and/or temporary, unexpected fluctuations in lighting) can affect animal navigation, competitive interactions, predator-prey relations, and animal physiology. Flowering and development of trees	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			and plants can also be modified by un-natural illumination which can disrupt natural seasonal responses.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The objectives for this feature are to allow natural processes to predominate and to accept the resulting ecological conditions. Attributes relating to **age class, open space, veteran trees, regeneration, hydrology, functional connectivity' tree shrub composition** and **woodland edge** removed as not relevant.				

Table 9: Supplementary Advice for Qualifying Features: H91DO. Bog Woodland *

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature to 5.25ha	This target is included as there should be no reduction (excluding any trivial loss) in the extent of this feature. Area measurements given may be approximate depending on the nature, age and accuracy of data collection. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. Loss of any woodland area which fragments a site into different parts may interrupt the movement of species between the remaining parts of the woodland, especially those with limited powers of dispersal.	
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	Whilst wet woodland is present across much of the SAC, most of this woodland is of recent origin and is likely to be the result of changes in the catchment of mires causing eutrophication or sedimentation and invasion by willow. The SAC bog woodland feature is restricted to a small area of Morden Bog & Hyde Heath SSSI	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types: W4 *Betula pubsecens – Molinia caerulea* woodland	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation structure including canopy cover, open ground, dead wood, old growth, regeneration potential, species composition, age class distribution.**	Maintain near natural structural development under minimum intervention; fallen dead wood left on site; invasive exotics notably rhododendron should be controlled	All of these attributes are important ecological characteristics of woodlands but the bog woodland at Morden has been developing for a long time under near natural conditions. Treacherous ground conditions make intervention difficult and has probably resulted in little past human intervention. In these circumstances a minimum intervention objective is appropriate rather than attempting anything other than natural control over these attributes.	
Structure and function (including its typical species)	**Browsing and grazing by herbivores**	Maintain browsing at a (low) level that allows well developed understorey with no obvious browse line, & lush ground vegetation with some grazing sensitive species evident (bramble, ivy etc.), and tree seedlings and sapling common in gaps.	Herbivores, especially deer, are an integral part of woodland ecosystems. They are important in influencing woodland regeneration, composition and structure and therefore in shaping woodland wildlife communities. In general, both light grazing and browsing is desirable to promote both a diverse woodland structure and continuous seedling establishment.	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature • The constant and preferential plants of the NVC community type which forms a key component of a SAC habitat that is present W4 *Betula pubesens – Molinia caerulea* *Carex paniculata* Epiphytic lichens	See explanatory notes for this attribute in Table 1	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Invasive, non-native and/or introduced species**	Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the feature	Invasive or introduced non-native species are a serious potential threat to the biodiversity of native and ancient woods, because they are able to exclude, damage or suppress the growth of native tree, shrub and ground species (and their associated typical species), reduce structural diversity and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides). Such species can include rhododendrons, snowberry, Japanese knotweed, giant hogweed and Himalayan balsam, for example. Similarly, this would include pheasants, rabbits and non-native invertebrate 'pest' species.	
Supporting processes (on which the feature relies)	**Air quality**	Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature relies)	**Hydrology**	At unit and/or catchment maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of plants and animals present. Measures to restore natural hydrology in the wider Morden Bog, within which the bog woodland sits, are necessary but it is not thought that the artificial ditches involved are affecting the natural hydrology of the Bog Woodland.	
Supporting processes (on which the feature relies)	**Water Quality**	Maintain water to a standard which provides the necessary conditions to support the feature.	For SAC features such a Bog Woodland which are supported by surface and/or ground water, maintaining the quality of water supply is critical. Poor water quality is likely to adversely affect the structure and function of this natural habitat. The Bog Woodland stand at Morden Bog seems to be fed by a groundwater spring or springs and the difference in vegetation from the surrounding acid mire and wet heath is probably largely a result of a difference in water chemistry. There is	Data on water quality from Wessex Water survey.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			some indication from sampling that calcium is slightly raised suggesting a possible effect from the wider catchment with groundwater influenced by chalk geology to the north or below. Increases in reed in areas surrounding the bog woodland suggests that there may be some eutrophication of this water supply but no effect on the bog woodland itself is apparent. Concentrations of orthophosphate in the water samples were very low (it was not detectable).	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The objectives for this feature are to allow natural processes to predominate and to accept the resulting ecological conditions. Attributes relating to **age class, open space, veteran trees, regeneration, hydrology, functional connectivity' tree shrub composition** and **woodland edge** removed as not relevant.				

Table 10: Supplementary Advice for Qualifying Features: S1044. *Coenagrion mercuriale*; Southern damselfly

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance**	Restore the abundance of the population at each individual site to a level which is above an appropriate population size given previous population counts and the site's ecological characteristics.	This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change and fluctuations in population size, it is difficult to set precise target-values. Targets may be revised where there is evidence to show that a population's size or presence has significantly changed as a result of natural factors or management measures. Where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment. Unless otherwise stated, the population size or presence should be that measured using standard methods, such as peak mean counts or breeding surveys.	Panter, C., Lake, S. & Liley, D. (2016) Southern Damselfly monitoring results 2015/16. Natural England/Footprint Ecology
Supporting habitat: extent and distribution	**Distribution of supporting habitat**	Restore the distribution and continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a habitat within a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for this feature and this may affect its viability. Studies have shown relatively little movement between many of the patches suitable habitat connected by the same stream (providing a corridor for movement); where movement was observed it was between adjacent sites. For southern damselfly sites to function as a meta-population,	Adolfo Cordero Rivera (ed) 2006 Forests and Dragonflies. Fourth WDA International Symposium of Odonatology, Pontevedra (Spain), July 2005, pp. 239-258. Thompson, D.J., Purse, B.V. & Rouquette, J.R. (2003) Monitoring the Southern Damselfly Coenagrion Mercuriale. Conserving Natura 2000 Rivers Ecology Series, English Nature, Peterborough, UK.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			new sites within the dispersal range of this species must be established between existing populations. Movements of up 500m by southern damselflies have been readily observed, and longer distances have been achieved along continuous lines of habitat, but rarely over 1km It is recommended therefore, that areas of suitable habitat are within 500m to 1km of existing sites to act as 'stepping stones' that would re-connect these populations.	
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Restore the total extent of the habitat(s) which support the feature: (Streams / wet heath / mire habitats)	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. Due to the specific requirements of this species there will only be small areas of the wider wet heath / mire communities that suitable for southern damselfly.	
Supporting habitat: structure/ function	**Flow: base-rich runnels and heathland seepages /streams**	Restore open, unshaded, shallow lengths of watercourse/mire with permanent discernible flow (approx. 10 cm s-1).	The southern damselfly typically requires base-rich, shallow streams with a constant slow-to-moderate permanent flow and relatively high water temperature although not all of the Dorset heaths sites have these characteristics. Some have developed after historic ball clay working has altered topography and hydrology (Creech, Blue Pool). One (Orchard Cottage mire, Povington) is currently fed by an artificial water supply from an active clay pit. And the sites at Corfe Common are flushes rather than streams without the flow characteristics of a stream.	
Supporting habitat: structure/ function	**Trophic conditions :Base-rich runnels and heathland seepages/ streams**	Restore dystrophic to mesotrophic conditions indicated by a lack of areas of watercourse with encroachment of algae (except brown flocculent algae), bacterial film or invasive tall emergents such as *Juncus*	A wide range of pH is found in watercourses on southern damselfly sites, although the majority of sites fall within the range 7.0–7.5. These conditions ensure sufficient oxygen for larval and egg development and no eutrophication and encroachment of invasive emergents and algae. Detailed water chemistry data is only available for one site –	Natural England water quality monitoring for Dorset Heaths judicial review

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		effusus, J. acutiflorus and *Phragmites* spp.	the fen arm at Hartland Moor. At 4 locations values varied as follows: pH 6.9 – 7.5, Ca 13 – 20.3 mg/l, TON <0.005 – 1.2 mg/l. TP 0.001 – 0.038mg/l. Thus compared with most mires on the Dorset heaths Ca and pH are significantly higher, N is also raised possibly reflecting a source of groundwater from a wider catchment with more influence from agriculture. Other southern damselfly sites are close to the edge of the southern heaths where groundwater is probably influenced by the nearby chalk.	
Supporting habitat: structure/ function	**Trophic conditions: Base-rich runnels and heathland seepages/ streams:trophic conditions**	Restore dystrophic to mesotrophic conditions indicated by a lack of areas of watercourse with encroachment of algae (except brown flocculent algae), bacterial film or invasive tall emergents such as *Juncus effusus, J. acutiflorus* and *Phragmites* spp.	A wide range of pH is found in watercourses on southern damselfly sites, although the majority of sites fall within the range 7.0–7.5. These conditions ensure sufficient oxygen for larval and egg development and no eutrophication and encroachment of invasive emergents and algae.	
Supporting habitat: structure/ function	**Vegetation composition: Base-rich runnels and heathland seepages/ streams**	Restore stream lengths with cover of submerged and semi-emergent, herbaceous macrophytes including some cover of *Hypericum elodes, Potamogeton polygonifolius, or Ranunculus flammula*, with some *Carex* spp. or *Juncus* spp	Southern damselflies usually emerge from the water as final instar larvae by ascending emergent vegetation, rather than by walking onto shore. Tall rushes and sedges are known to have been used and emergence perches for the southern damselfly include semi-emergent plants such as lesser water parsnip *(Berula erecta*), bittersweet (*Solanum dulcamara*), water mint (*Mentha aquatica*) and watercress (*Rorippa nasturtium-aquaticum).* The eggs are laid into water plant tissue and plant species used as oviposition substrates may include fool's *watercress (Apium nodiflorum)*, lesser water parsnip, reed sweet-grass (*Glyceria maxima)*, watercress, brooklime *(Veronica beccabunga*) and blue water-speedwell (*V. anagallisaquatica*), marsh St John's wort *(Hypericum elodes),* bog pondweed (*Potamogeton polygonifolius)* and jointed rush (*Juncus articulatus).*	
Supporting habitat: structure/ function	**Vegetation composition: scrub cover**	Maintain only small areas of tall scrub or trees within 20 metres of watercourse or mire but not on intervening habitat between two areas of population.	Some scattered trees and scrub associated with base-rich runnels and heathland seepages/streams can provide areas for roosting, maturation, feeding, displaying and basking.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1. Within the Dorset Heaths, the Southern Damselfly is at the northern edge of its range and is unlikely to be directly affected by any increases in temperature; the primary impact of climate change on this species will be through changes to hydrology of a site.	Natural England 2015 Climate Change Theme Plan and National Biodiversity Climate Change Vulnerability Assessments (NBCCVAs)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Air quality**	Maintain or, where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See explanatory notes for this attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature and/or its supporting habitat relies)	**Conservation measures**	Maintain the management measures which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. The Southern Damselfly has very particular habitat requirements for a mid-successional management dependent habitat. It is important to ensure that sites holding Southern Damselfly populations are managed according to these requirements, as well as potentially suitable adjacent land. Due to their limited dispersal ability, only small areas of the watercourse should be managed in any one year. In addition, potentially suitable areas close to existing populations or between current populations can be managed to reconnect them.	BDS (2016) – Southern Damselfly Management Handbook
Supporting processes (on which the feature and/or	**Water quantity/ quality**	Maintain water quality and quantity to a standard which provides the necessary conditions to support the feature [	Southern damselfly is dependent on wetland habitats supported by surface and/or ground water and maintaining the quality and quantity of water supply is critical, especially at certain times of year. Poor water quality and inadequate	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
its supporting habitat relies)			quantities of water can adversely affect the structure and function of this habitat type. Water quality information for Hartland Moor is given above. Further site-specific investigations may be required to establish appropriate water quality standards for the SAC.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: Attributes relating to chalk stream habitats have been removed as this SAC is an example of a heathland habitat supporting this species.				

Table 11: Supplementary Advice for Qualifying Features: S1166. *Triturus cristatus*; Great crested newt

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance**	Maintain the abundance of the population at each individual site to a level which is at or above an appropriate population size given previous population counts and the site's ecological characteristics.	This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's size or presence has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period (generally at least 10 years). The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts or breeding surveys. This value is also provided recognising there will be inherent variability as a result of	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise that the figures stated are the best available. Estimating the average size of the GCN population will normally be based on the peak count of adults undertaken in the known peak season for the area, and in-year weather conditions; likely to be Mid-April to Mid-May in central areas. The peak count is derived by summing the counts across the site on 'best' night for each season. Considerable natural between-year variation in population counts is frequent.	
Supporting habitat: extent and distribution	**Distribution of supporting habitat**	Maintain the distribution and continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation) across the site will reduce its overall area, the local diversity and variations in its structure and composition and may undermine its resilience to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a habitat within a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for this feature and this may affect its viability.	
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Maintain the total extent of the habitat(s) which support the feature.	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure/ function	**Cover of macrophytes**	Maintain a high cover of macrophytes, typically between 50-80%, within ponds	Marginal and emergent vegetation are important components of a great crested newt pond as they provide excellent egg-laying sites. Good plants for this purpose include water forget-me-not *Myosotis scorpioides*, flote/sweet grass *Glyceria fluitans* and great hairy willowherb *Epilobium hirsutum*. They are, however, an integral part of the natural successional change of a waterbody and whilst it is preferable to have a good range and area of marginal plants, they should not extend across the entire water surface. In most circumstances it will be desirable to retain a fringe of marginal and emergent vegetation around at least half of a pond's edge. Where the marginal vegetation is particularly invasive, and provides no specific benefit to crested newts, it may be decided that its complete removal is necessary.	
Supporting habitat: structure/ function	**Permanence of ponds**	Maintain the permanence of water within ponds present within the site	Ponds to include breeding ponds as well as non-breeding ponds, since the latter may be used for foraging or sustaining prey populations. Ponds should have a high degree of permanence, (they never or rarely dry out other than though natural drought) and this may be adversely affected by changes in the supply or flow of water (from either surface water and/or groundwater sources] to the ponds. Great crested newt may use larger temporary ponds which are unsuitable for fish, provided that they contain water over the breeding / tadpole season (February - mid-August) for at least one in every three years.	
Supporting habitat: structure/ function	**Presence of fish and wildfowl**	Ensure fish and wildfowl are absent in all ponds otherwise suitable for GCN.	At high densities waterfowl (i.e. most water birds such as ducks, geese and swans but excluding moorhen) can remove all aquatic vegetation, adversely affect water quality and create turbid pondwater conditions. Some may also actively hunt adult GCNs and their larvae. Similarly fish can be significant predators of GCN larvae. The presence of waterfowl and fish can reduce habitat suitability. These should be wholly absent from sites which support fewer than 5 ponds.	
Supporting habitat: structure/ function	**Presence of ponds**	Maintain the number or surface area of ponds present within the site	Ponds to include breeding ponds as well as non-breeding ponds, since the latter may be used for foraging or sustaining prey populations but only includes ponds in the vicinity of GCN populations since GCN occur only in small parts of the SACs, mainly using ponds that are the result of old clay workings in	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			the Blue Pool and Creech areas. The surface area of a pond is taken from when water reaches its highest level (excluding flooding events), which will usually be in the spring.	
Supporting habitat: structure/ function	**Shading of ponds**	Ensure pond perimeters are generally free of shade (typically no more than 60% cover of the shoreline)	Shading from trees and/or buildings (not including emergent pond vegetation) can negatively affect the abundance of marginal vegetation in ponds, water temperature and the rate of hatching and development of great crested newt eggs and larvae.	
Supporting habitat: structure/ function	**Supporting terrestrial habitat**	Maintain the quality of terrestrial habitat likely to be utilised by Great Crested Newts, with no fragmentation of habitat by significant barriers to newt dispersal.	Great crested newts need both aquatic and terrestrial habitat. Good quality terrestrial habitat, particularly within 500m of the breeding ponds, provides important sheltering, dispersing and foraging conditions and can include all semi-natural habitat along with meadows, rough tussocky grassland, scrub, woodland, Good quality terrestrial habitat for GCNs has structural diversity which can be provided by features such as ditches, loose stone/rocks, rabbit burrows and small mammal holes. Good habitat provides a range of invertebrates, such as earthworms, insects, spiders and slugs, on which GCNs are known to feed. Fragmentation refers to significant barriers to GCN movement such as walls and buildings, but not footpaths or tracks. Newts disperse over land to forage for food, and move between ponds. The distances moved during dispersal vary widely according to habitat quality and availability. At most sites, the majority of adults probably stay within around 250m of the breeding pond but may well travel further if there are areas of high quality foraging and refuge habitat extending beyond this range.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	See explanatory notes for this attribute in Table 1	Natural England 2015 Climate Change Theme Plan and National Biodiversity Climate Change Vulnerability Assessments (NBCCVAs)
Supporting processes (on which the	**Air quality**	Maintain or, where necessary, restore concentrations and deposition of air pollutants to at	See explanatory notes for this attribute in table 1.	More information about site-relevant Critical Loads and Levels for this SAC is available by using

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
feature and/or its supporting habitat relies)		or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).		the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).
Supporting processes (on which the feature and/or its supporting habitat relies)	**Conservation measures**	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain the structure, functions and supporting processes associated with the feature and/or its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Water quantity/ quality**	Maintain water quality and quantity to a standard which provides the necessary conditions to support the feature [adviser to provide site-specific standards where available].	For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality and quantity of water supply will be critical, especially at certain times of year. Poor and inadequate quantities of water can adversely affect the structure and function of this habitat type. Site-specific investigations may be required to establish appropriate water quality standards for the SAC.	
Supporting processes (on which the feature or its supporting habitat relies)	**Water quality**	Maintain the quality of pond waters within the site as indicated by the presence of an abundant and diverse invertebrate community.	As the clarity and chemical status of water bodies supporting GCNs can be subjective, the presence of an abundant and diverse community of freshwater invertebrates can be indicative of suitable water quality standards. Invertebrate groups present should include groups such as mayfly larvae and water shrimps. This will ensure ponds support a healthy (mainly invertebrate) fauna to provide food for developing GCN larvae and adults.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

Appendix 1: Dorset Heaths typical plant species

Dry heath - *Calluna vulgaris, Erica cinerea, Ulex gallii, Ulex minor, Agrostis curtisii, Erica tetralix, Galium saxatile, Hypochaeris radicata, Molinia caerulea, Rumex acetosella, Potentilla erecta, Polygala serpyllifolia, Cladonia* sp, Bryophytes.

Wet heath and mire - *Calluna vulgaris, Erica tetralix, Erica ciliaris, Ulex gallii, Ulex minor, Genista anglica, Sphagnum spp, Carex echinata, Carex ovalis, Carex panacea, Carex pulicaris, Drosera intermedia, D. rotundifolia, Eleocharis multicaulis*, *Eriophorum angustifolium, Juncus subnodulosus, Juncus squarrosus, Menyanthes trifoliata, Molinia caerulea, Myrica gale, Narthecium ossifragum,* Pedicularis sylvatica, *Polygala serpyllifolia, Potentilla erecta, Potamogeton polygonifolius*, *Rhynchospora alba, R. fusca, Schoenus nigricans, Trichophorum cespitosum.*

ANNEX 17

Ramsar Information Sheet (RIS) for Dorset Heathlands Ramsar Site

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 01 October 1998

3. Country:

UK (England)

4. Name of the Ramsar site:

Dorset Heathlands

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

50 39 00N 02 09 33W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Poole

Dorset Heathlands lies adjacent to the coast of central southern England

Administrative region: Dorset

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 6730.15

Min. 1
Max. 72
Mean 27

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Extensive and fragmented, these heathland areas are centred around the estuary of Poole Harbour and are adjacent to the urban conurbation of Bournemouth and Poole. The heathland contains numerous examples of wet heath and acid valley mire, habitats that are restricted to the Atlantic fringe of Europe. These heath wetlands are among the best of their type in lowland Britain. There are also transitions to coastal wetland and fen habitat types. The wetland flora and fauna includes a large assemblage of nationally rare and scarce species, especially invertebrates.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2, 3

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

Contains particularly good examples of (i) northern Atlantic wet heaths with cross-leaved heath *Erica tetralix* and (ii) acid mire with *Rhynchosporion*.

Contains largest example in Britain of southern Atlantic wet heaths with Dorset heath *Erica ciliaris* and cross-leaved heath *Erica tetralix*.

Ramsar criterion 2

Supports 1 nationally rare and 13 nationally scarce wetland plant species, and at least 28 nationally rare wetland invertebrate species.

Ramsar criterion 3

Has a high species richness and high ecological diversity of wetland habitat types and transitions, and lies in one of the most biologically-rich wetland areas of lowland Britain, being continuous with three other Ramsar sites: Poole Harbour, Avon Valley and The New Forest.

See Sections 21/22 for details of noteworthy species

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, neutral, sand, clay, peat, nutrient-poor, sedimentary
Geomorphology and landscape	lowland, coastal, valley, slope
Nutrient status	mesotrophic, oligotrophic
pH	acidic, circumneutral, strongly acidic
Salinity	fresh
Soil	mainly mineral, mainly organic
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Everton, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/everton.html) Max. daily temperature: 14.0° C Min. daily temperature: 7.0° C Days of air frost: 32.5 Rainfall: 763.7 mm Hrs. of sunshine: 1750.7

General description of the Physical Features:

The Dorset Heathlands cover an extensive complex of heathland sites at the western edge of the Hampshire Basin in southern England. The area is centred around the large estuary of Poole Harbour and lies in close proximity to the urban conurbation of Bournemouth and Poole. Past losses of the heathland (an estimated 75% during the 20th century to development, agriculture and afforestation) have left the remaining heaths in a highly fragmented state. Despite this decline and fragmentation, the heaths show a high degree of ecological cohesion. They contain large areas of dry heath, wet heath and acid valley mire, all habitats that are restricted to the Atlantic fringe of Europe. The examples of the Dorset Heathlands are among the best of their type in the UK. There are also transitions to coastal wetlands and floodplain fen habitats.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Dorset Heathlands cover an extensive complex of heathland sites at the western edge of the Hampshire Basin in southern England. The area is centred around the large estuary of Poole Harbour and lies in close proximity to the urban conurbation of Bournemouth and Poole. Past losses of the heathland (an estimated 75% during the 20th century to development, agriculture and afforestation) have left the remaining heaths in a highly fragmented state. Despite this decline and fragmentation, the heaths show a high degree of ecological cohesion. They contain large areas of dry heath, wet heath and acid valley mire, all habitats that are restricted to the Atlantic fringe of Europe. The examples of the Dorset Heathlands are among the best of their type in the UK. There are also transitions to coastal wetlands and floodplain fen habitats.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Recharge and discharge of groundwater

19. Wetland types:

Inland wetland

Code	Name	% Area
Other	Other	77.8
W	Shrub-dominated wetlands	8.9
U	Peatlands (including peat bogs swamps, fens)	7.5
O	Freshwater lakes: permanent	1.7
Xf	Freshwater, tree-dominated wetlands	1.3
E	Sand / shingle shores (including dune systems)	1.2
Xp	Forested peatland	1
Tp	Freshwater marshes / pools: permanent	0.3
4	Seasonally flooded agricultural land	0.2
M	Rivers / streams / creeks: permanent	0.1

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

This site contains large areas of dry heath, wet heath and valley mire, and these often occur together in mosaics and zonations of heathland vegetation. Typically the wet heath occupies areas of impeded drainage on the lower valley sides and less steeply-sloping ground. The vegetation is mostly of the *Erica tetralix -Sphagnum compactum* type, locally characterised by *Drosera* spp. and *Rhynchospora* spp. In almost all instances the wet heath gives way to base-poor, acid mire vegetation in the valley

bottoms. The mires are commonly dominated by *Molinia caerulea*, with scattered areas of the more floristically rich *Rhynchospora alba* habitat

South of Poole Harbour *Erica tetralix* is joined by *Erica ciliaris*, which occurs extensively and often in abundance, growing on moist soils ranging from wet heath to mire situations. Outlying stands of *Erica ciliaris* occur towards the north and west of the site.

In places conditions are influenced by sources of base-enriched water, giving rise to rich fens. Several types of vegetation occur, and these include valley mire communities characterised by *Schoenus nigricans* and, where there is livestock grazing, flood plain fen and fen-meadow characterised by *Carex rostrata* or *Molinia caerulea - Cirsium dissectum* vegetation. Adjacent to Poole Harbour there is *Cladium mariscus* fen and transitions to intertidal areas of *Phragmites australis* swamp.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Erica ciliaris, Cicendia filiformis, Gentiana pneumonanthe, Hammarbya paludosa, Illecebrum verticillatum, Rhynchospora fusca, Deschampsia setacea, Elatine hexandra, Isoetes echinospora, Pilularia globulifera, Lycopodiella inundata.

Lower Plants.

Sphagnum pulchrum, Sphagnum recurvum var amblyphyllum, Cladopodiella francisci.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Dartford warbler , *Sylvia undata*, Europe	418 pairs, representing an average of 26.1% of the GB population (Three count mean 1991-2 & 1994)

Species with peak counts in winter:

Hen harrier, *Circus cyaneus*, Europe	20 individuals, representing an average of 2.6% of the GB population (Count as at 1991/2)
Merlin , *Falco columbarius*, Europe	15 individuals, representing an average of 1% of the GB population (Count as at 1991/2)

Species Information

Species occurring at levels of international importance.

Invertebrates.

Coenagrion mercuriale.

Nationally important species occurring on the site.

Invertebrates.

Bidessus unistiatus, Buckleria paludum, Chrysops sepulchralis, Crambus silvella, Cryptocephalus biguttatus, Cyclophora pendularia, Donacia bicolora, Eristalis cryptarum, Formica candida (=*transkaucasia*), *Graphoderus cinereus, Graptodytes flavipes, Heliothis maritima, Hydroporus cantabricus, Libellula fulva, Longitarsus nigerrimus, Nabis brevis, Pachybrachius luridus, Parhelophilus consimilis, Phragmataecia castaneae, Plecocera tricincta, Sphaerophoria loewi, Stenoptilia graphodactyla, Stenus kiesenwetteri, Stethophyma grossum, Tipula marginata, Zora armillata, Sedina buettneri*.

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Archaeological/historical site
Environmental education/ interpretation
Livestock grazing
Non-consumptive recreation
Scientific research

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+

Collection of non-timber natural products: (unspecified)	+	
Commercial forestry	+	+
Rough or shifting grazing	+	
Permanent pastoral agriculture	+	+
Hunting: recreational/sport	+	+
Industry		+
Sewage treatment/disposal		+
Harbour/port		+
Flood control		+
Mineral exploration (excl. hydrocarbons)	+	+
Mining/quarrying	+	+
Oil/gas exploration		+
Oil/gas production	+	+
Transport route	+	+
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+
Military activities	+	+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Acid rain	1	Modelling by the relevant air quality authority indicates that the average or minimum deposition from airborne SOx and NOx exceed the maximum critical load for acidity on at least part of the site.	+	+	
Pollution – unspecified	1		+	+	+

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+
National Nature Reserve (NNR)	+	+
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	+
Site management statement/plan implemented	+	
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Contemporary.

Habitat.
Condition monitoring from ground; regular aerial photography; periodic review of extent and distribution from ground survey.

Fauna.
Surveys of heath areas for rare and scarce species, especially invertebrates.

Flora.
Monitoring response of vegetation composition to management, especially scrub clearance and extensive livestock grazing.
Habitat re-creation, monitoring colonisation by heath vegetation on land converted from forestry and agriculture.

Miscellaneous.
There are two research stations bordering the site (Centre for Ecology and Hydrology and Freshwater Biological Association).

Completed.

Habitat.
Historical changes in extent (Moore 1962; Webb 1990); vegetation types and distribution in the site (Cox 1994).

Flora.
Individual species: plants. Historical changes in occurrence (Byfield & Pearman 1996); occurrence of rare and scarce species in the site (Edwards 1997; Chapman,1975; Cox,1994; Hill & Edwards 2003; Edwards & Pearman 2004).

Fauna.

Individual species: invertebrates. Survey of *Coenagrion mercuriale* sites (Winsland 1994; Brash 2001a, 2001b); ecology and habitat requirements of *C. mercuriale* (Purse 2002); occurrence of rare species in the site (Cox 1994; Booth 1998; North 1998; Warne 2001); ecology and habitat requirements of rare species in the site (North 2000; Cheeseman *et al*. 2001).

Habitat.
Habitat fragmentation. Effects on vegetational diversity and invertebrate fauna (Webb 1989; Webb & Rose 1994; Webb & Vermaat 1990).
Habitat conditions. Environmental and management characteristics of wet heath and mire (Shaw & Wheeler 1990); acidification (Bisset & Farmer 1993); bog pool acidity and nutrient status (Schwagerl 1996); wildfires (Bibby 1976; Bullock & Webb 1995; Webb 1997; Kirby & Tantrum 1999).
Habitat re-creation. Identification of areas of greatest potential and ecological benefit (Rose & Webb 1995; Veitch *et al*. 1994).
Misellaneous.
Public attitudes. Attitudes of people to heathland (English Nature 1998).

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Visitor attractions: Two visitor centres serve the heaths close to the urban area and a third is planned. Conservation organisations and local authority countryside services offer a well publicised programme of events throughout the year, including guided walks, nature identification and management tasks. In summer there is a 'heathland week' with special events such as a heathland fair and traditional craft demonstrations.

Formal Education: Local authorities and several schools regularly use their local heaths for wildlife and cultural education. A computer programme on local heathland ecology has been developed by and for infant schools. There are three field study centres near the site offering educational courses. The heaths attract many project assignments from schools and further education students.

Interpretation: Large parts of the site are well provided with signs and, in places, interpretation panels. There are also many nature reserve leaflets, some self guided trail leaflets and booklets on the heathland.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.
Land-based recreation:

Walking, dog -walking, horse riding, birdwatching, jogging and child play occurs on many parts of the site throughout the year. Locally on some heaths, mainly those in and near the urban area, the level of use is high and can have detrimental effects on habitats and species. There is an ongoing programme of managing these recreational pressures through management plans and educational work implemented by nature conservation organisations and local authority countryside services, in particular through funding under the European Commission LIFE programme.

The urban fringe heaths attract unauthorised motor bike and mountain bike scrambling throughout the year. An ongoing programme of access control, police action and wardening has reduced motor bike scrambling to a few remaining localities and is continuing to target regular problem localities for mountain bike scrambling.

There are several caravan and camping sites adjacent to parts of the heathland, used mainly during summer. The disposal of waste water from some sites may be a source of poor water quality locally and consents for these discharges are to be reviewed by the Environment Agency.

At Studland very large numbers of visitors are attracted to the beach and dunes, especially during high summer. Wetland behind the coast is little impacted.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP & Davidson, NC (eds.) (1998) *Coasts and seas of the United Kingdom. Region 9 Southern England: Hayling Island to Lyme Regis.* Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

Bibby, C (1976) Legacy of Britain's summer. *New Scientist*, **72**(1021) 8-9

Bisset, K & Farmer, A (1993) SSSI's in England at risk from acid rain. *English Nature Science*, No. **15**, English Nature, Peterborough

Booth, RG (1998) *The bladderwort flea beetle* Longitarsus nigerrimus *in Britain, 1998*. English Nature, Peterborough (Species Recovery Programme Report)

Brash, P (2001a) *Southern damselflies* Coenagrion mercuriale*, a survey of historical sites in Dorset*. Royal Society for the Protection of Birds, Wareham (Dorset Heathland Project Report)

Brash, P (2001b) *Southern damselflies* Coenagrion mercuriale *at Povington, Creech and Blue Pool in 2001*. Royal Society for the Protection of Birds, Wareham (Dorset Heathland Project Report)

Bratton, JH (ed.) (1991) *British Red Data Books: 3. Invertebrates other than insects*. Joint Nature Conservation Committee, Peterborough

Bristow, CR, Freshney, EC & Penn, IE (eds.) (1991) Geology of the country around Bournemouth. HMSO, London

Buck, AL (ed.) (1993) *An inventory of UK estuaries. Volume 6. Southern England*. Joint Nature Conservation Committee, Peterborough

Bullock, J.M & Webb, N.R (1995) Responses to severe fires in heathland mosaics in southern England. *Biological conservation*, **73**, 207-214

Byfield, A., Cox, J & Pearman, D (1995) A future for Dorset's heathland flora. RSPB Report

Byfield, A & Pearman, D (1995) Dorset's disappearing heathland flora: a case for reinstating grazing. *RSPB Conservation Review*, **9**, 84-89

Byfield, A & Pearman, D (1996) *Dorset's disappearing heathland flora: changes in the distribution of Dorset's rarer heathland species 1931 to 1993*. Plantlife & Royal Society for the Protection of Birds report

Chapman, S.B (1975) The distribution and composition of hybrid populations of Erica ciliaris L. and Erica tetralix L. in Dorset. *Journal of Ecology*, **63**, 809-824

Chapman, S.B., Clarke, R.T., Webb, N.R (1989) Survey and assessment of heathland in Dorset. *Biological conservation*, **47**, 137-152

Cheeseman, OD, Pinchen, BJ & Edwards, B (2001) *Large marsh grasshopper (*Stethophyma grossum*) 2000/2001 Report*. English Nature, Peterborough (Species Recovery Programme Report)

Cox, J (1994) *An appraisal of the proposed Dorset Heathlands Ramsar site*. English Nature report, Dorset

Doody, JP, Johnston, C & Smith, B (1993) *Directory of the North Sea coastal margin*. Joint Nature Conservation Committee, Peterborough

Dorset Heathland Forum (1990) *Dorset Heathland Strategy*. Dorset County Council, Dorchester

Edwards, B (1997) *Bryophyte survey of the Poole Basin mires*. English Nature & Dorset Environmental Records Centre report

Edwards, B & Pearman, D (2004) *Dorset Rare Plant Register: An account of the rare, scarce and declining plants of Dorset*. Dorset Environmental Records Centre, Dorchester

English Nature (1994) *Wildlife Enhancement Scheme for the Dorset Heathlands*. English Nature, Dorset

English Nature (1998) *Repeat attitude survey of the value of heathlands*. English Nature, Peterborough

English Nature & Royal Society for the Protection of Birds (1995) *The lowland heathland inventory*.

Evans, A, Painter, M, Wynde, R & Michael, N (1994) An inventory of lowland heathland: a foundation for an effective conservation strategy. *RSPB Conservation Review*, 8:24-30

Farrell, L (1993) Lowland heathland: the extent of habitat change, *English Nature Science*, No. 12,

Haskins, L (1978) *The vegetational history of south-east Dorset*. Unpublished Ph.D. thesis, University of Southampton

Haskins, L (2000) Heathlands in an urban setting – effects of urban development on heathlands of south-east Dorset. *British Wildlife*, **11**(4), 229-237

Hill, MO & Edwards, E (2003) *Mosses and liverworts of Dorset*. Dorset Environmental; Records Centre, Dorchester

Joint Nature Conservation Committee (1994) *Dorset heathland SSSIs: Invertebrate Site Register. Site reports*.

Joint Nature Conservation Committee (1995) List of possible Special Areas of Conservation in the UK. *British Wildlife* **6**, 286-297

Kirby, JS & Tantrum, DAS (1999) *Monitoring heathland fires in Dorset: Phase 1*. Department of the Environment, Transport and the Regions, Wildlife and Countryside Directorate

Marrs, RH (1988) Vegetation change on lowland heaths and its relevance for conservation management. *Journal of Environmental Management*, **26**, 127-149

McLeod, CR, Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ & Way, SF (eds.) (2004) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/SACselection

Moore, NW (1962) The heaths of Dorset and their conservation. *Journal of Ecology*, **50**, 369-391

North, RD (1998) *Black bog ant (*Formica candida*)*. English Nature, Peterborough (Species Recovery Programme Report)

North, RD (2000) *Distribution and autecology of the black bog ant: effect of grazing and hydrological requirements of populations, year 1*. English Nature, Peterborough (Species Recovery Programme Report)

Purse, B (2002) *The ecology and conservation of the southern damselfly (*Coenagrion mercuriale – *Charpentier) in Britain*. Environment Agency, Bristol (R&D Technical Report W1-021/TR)

Radley, GP (1990) Sand dune survey of Great Britain. Site report No. 84. Studland, 1990. *Nature Conservancy Council, CSD Report*, No. **1131**

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Rodwell, JS (ed.) (1991) *British plant communities. Volume 2. Heaths and mires*. Cambridge University Press, Cambridge

Rose, R.J & Webb, N.R (1995) *Heathland re-creation plan for Dorset*. English Nature Report

Royal Society for the Protection of Birds (1988) *Lowland heathland: a habitat under threat: a background paper*. Royal Society for the Protection of Birds, Sandy

Schwagerl, C (1996) *Influence of acidity and nutrient status on plant diversity in bog pools of the Dorset Heathlands*. Unpublished M.Sc dissertation, University of Reading

Shaw, SC & Wheeler, BD (1990) *Comparative survey of habitat conditions and management characteristics of herbaceous poor-fen vegetation types*. Nature Conservancy Council, Peterborough (Contract Survey, No. 129)

Shirt, DB (ed.) (1987) *British Red Data Books: 2. Insects*. Nature Conservancy Council, Peterborough

Stewart, A, Pearman, DA & Preston, CD (eds.) (1994) *Scarce plants in Britain*. Joint Nature Conservation Committee, Peterborough

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content. Volume 3: Site accounts*. Joint Nature Conservation Committee, Peterborough www.jncc.gov.uk/UKSPA/default.htm

Veitch, N, Parr, TW & Webb, NR (1994) *Lowland heathland re-creation in Dorset: a pilot project for the rest of England: final report*. English Nature report

Warne, AC (2001) *Survey of* Donacia bicolora *in the Bourne Valley SSSI, Dorset*. English Nature, Dorset

Webb, NR (1982) Fragmentation of heaths and invertebrates. *Nature Conservancy Council, CST Report*, No. **376**

Webb, NR (1986) *Heathlands*. Collins, London (New Naturalist, No. 72)

Webb, NR (1989) Studies on the invertebrate fauna of fragmented heathland in Dorset, UK, and the implications for conservation. *Biological conservation*, **47**, 153-165

Webb, NR (1990) Changes in vegetational diversity on remnant heathland fragments. *Biological conservation*, **53**, 253-264

Webb, NR (1990) Changes on the heathlands of Dorset, England, between 1978 and 1987. *Biological conservation*, **51**, 273-286

Webb, NR (1997) Effects of fires on heathland communities: experiences from southern England. In: *Feuereinsatz im Naturschutz, NNA-Berichte*, **10**(5), 134-141

Webb, NR & Haskins, LE (1980) An ecological survey of the heathlands in the Poole basin, Dorset, England in 1978. *Biological conservation*, **17**, 281-296

Webb, NR & Rose, RJ (1994) Habitat fragmentation and heathland species. *English Nature Research Report*, No. **95**

Webb, NR & Vermaat, AH (1990) Changes in vegetational diversity on remnant heathland fragments. *Biological conservation*, **53**, 253-264

Wiggington, M (1999) *British Red Data Books. 1. Vascular plants*. 3rd edn. Joint Nature Conservation Committee, Peterborough

Winsland, D (1994) Report on six Dorset heathland sites for *Coenagrion mercuriale*. *English Nature Research Reports*, No. **133**

Woodrow, W, Symes, N, Auld, M & Cadbury, J (1996) Restoring Dorset's heathland: the RSPB Dorset heathland project. *RSPB Conservation Review*, **10**, 69-81

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

ANNEX 18

Studland and Godlingston Heaths SSSI Citation

COUNTY: DORSET SITE NAME: STUDLAND AND GODLINSTON HEATHS

DISTRICT: PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981, as amended. Major part of site National Nature Reserve (NNR) declared under Section 19 of the National Parks and Access to the Countryside Act 1949

Local Planning Authority: DORSET COUNTY COUNCIL, Purbeck District Council

National Grid Reference: SZ 030845 Area: 758.9 (ha.) 1875.2 (ac.)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 08 SW, NW, SY 98 SE

Date Notified (Under 1949 Act): 1954 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
Most is owned by the National Trust. Within Dorset AONB and Heritage Coast.

Description and Reasons for Notification:
Underlying the south and west of this site are the Bagshot Beds against which sand dunes have built up over the past 3 or 4 centuries forming a large part of the South Haven Peninsula and enclosing a lake, Little Sea. In addition to the importance of the peninsula as a key site for coastal geomorphology, the range of habitats on Studland and Godlingston Heaths, including a fine expanse of heathland with many rare animals, makes this area of outstanding importance for nature conservation.

South Haven Peninsula provides an excellent example of progradation of a sandy beach which has been very well documented in historical records and by more recent field surveys. Three main ridges occur, each with dunes fronted by a seaward slope extending beneath alluvial deposits. There are few prograding sand beaches in southern Britain and South Haven Peninsula is a key member of the national network of soft coastal sites. It is extensively used as an educational site as the links between geomorphological process and ecological succession are especially well exemplified.

The fore dunes have Sea Lyme Grass *Leymus arenarius* and Sand Couch *Elymus farctus* on the seaward edge, giving way quickly to the dominant cover of Marram Grass Ammophila arenaria. Sand sedge *Carex arenaria* and the herbs Sea Bindweed *Calystegia soldanella* and Sheep's Bit *Jasione montana* are frequent and the uncommon Dune Fescue *Vulpia membranacea* also occurs. The dune system is composed of highly acidic sand and behind the fore dunes stable dune vegetation is entirely heathland. The former dune ridges are covered by dry heathland vegetation in which Ling *Calluna vulgaris* is dominant. There is a very important heathland lichen community. The intervening dune slacks with a high water table are dominated by Common Sallow *Salix cinerea* and birch *Betula* sp. carr in which the very local Royal fern *Osmunda regalis* is a conspicuous element. In open areas in the low-lying slacks there is wet heath with bog pools and here the rare Marsh Clubmoss *Lycopodiella inundata* occurs locally. The dune slacks run northwards from Little Sea, a substantial

freshwater lake fringed by reedswamp containing Common Reed *Phragmites australis* and Greater Reedmace *Typha latifolia*. The lake is low in plant nutrients and acid in character. The submerged flora includes several rare species such as Six-stamened Waterwort *Elatine hexandra* and Spring Quillwort *Isoetes echinospora*.

To the north, south and west of Little Sea the acidic sands and gravels of the Bagshot Beds support varied heathland comprising one of the larger expanses of this habitat left in Dorset. The higher ground of Godlingston Heath is marked by sharp relief and the occurrence of many fragments and boulders of ironstone. Such well-drained slopes support dry heathland dominated by Ling with Bell Heather *Erica cinerea*, Bristle Bent *Agrostis curtisii*, Dwarf Gorse *Ulex minor* and stands of Common Gorse *U. europaeus*. Near the Agglestone Rock – the largest of the ironstone boulders – Bilberry *Vaccinium myrtillus* occurs, a scarce plant in Dorset heathland. Level ground with impeded drainage supports damp and wet heathland dominated by Ling, Crossleaved Heath *Erica tetralix* and Purple Moor Grass *Molinia caerulea*, with abundant lichens. The rare Dorset Heath *Erica ciliaris* occurs locally and Marsh Gentian *Gentiana pneumonanthe* is frequent. Valley mires with bog pools are a notable feature and support a rich variety of bog mosses *Sphagnum* spp. including *S. pulchrum*. Bog Asphodel *Narthecium ossifragum* and Common Cottongrass *Eriophorum angustifolium* are widespread; Black Bog-rush *Schoenus nigricans* and Long-Leaved Sundew *Drosera intermedia* are abundant in places and the rare Brown Beak – Sedge *Rhynchospora fusca* and the scarce Great Sundew *Drosera anglica* occur locally.

The heathland grades into the saltmarshes of Poole Harbour to the north and deciduous woodland of birch, Pedunculate Oak *Quercus robur* and Hazel *Corylus avellana* with sallow and Aspen *Populus tremula* south of Little Sea. There are several stands of self-sown Scots Pine *Pinus sylvestris*. In the south of the site there is further habitat diversity with heathy grassland of high floristic interest fringing the golf course.

The range of habitats and their transitions support a very rich invertebrate fauna. The site is of great importance for dragonflies with 22 species occurring, including uncommon species such as Small Red Damselfly *Ceriagrion tenellum* and Hairy Dragonfly *Brachytron pratense*; and for grasshoppers and crickets which include the rare Heath Grasshopper *Chorthippus vagans*, Large Marsh Grasshopper *Stethophyma grossum* and Woodland Grasshopper *Omocestus rufipes*. A great diversity of dipteran flies, moths and beetles has been recorded including a number of very restricted distribution such as the Weevil *Strophosomus curvipes*. Butterflies are well recorded and include the restricted heathland species Silver-studded Blue *Plebejus argus*.

All six British reptiles are present including strong populations of the rare Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca*. This heathland is one of the most important breeding sites in the country for the rare Dartford Warbler *Sylvia undata*. Other heathland birds breeding here include Nightjar *Caprimulgus europaeus* and Stonechat *Saxicola torquata* and the many swamps and pools support several pairs of Water Rail *Rallus aquaticus*. Outside of the breeding season Little Sea is important for wildfowl, with notable concentrations of Pochard *Athya ferina*, Scaup *A. marila*, Gadwall *Anas strepera* and Goldeneye *Bucephala clangula* amongst the species regularly present.

ANNEX 19

Poole Harbour SSSI Citation

Site name: Poole Harbour **County/Unitary Authority:** Dorset, Poole

District: Purbeck

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981, and additional land notified under Section 28B of the Wildlife and Countryside Act 1981.

Local Planning Authority: Dorset County Council, Borough of Poole, Purbeck District Council

National Grid reference: SY996886 **Area:** 4,111.50 ha

Ordnance Survey Sheet **1:50,000:** 195

Date notified: 7 December 1990

Date additional land notified: 24 May 2018

Description and Reasons for Notification:

Poole Harbour is one of the largest natural harbours in the world, a very high proportion of its area comprising intertidal marshes and mudflats. These, together with the permanent channels, support large numbers of non-breeding waterbirds, for which Poole Harbour has national and international significance. Fringing habitats of heathland, grassland and the islands provide additional interests, in turn supporting further scarce and restricted flora and fauna. Several rare marine invertebrates also occur within the harbour.

Covering an area of nearly 4,000 ha., Poole Harbour occupies a shallow depression in the acidic, Tertiary deposits towards the south-western extremity of the Hampshire Basin and has been formed over the past 5,000 years by a rising sea level. The 4 main islands represent high ground between former river valleys and these now have fringing marshes and in places cliffs cut in the underlying sands and clays. A relatively low volume of freshwater from several small rivers enters the Harbour and this, together with a narrow entrance and shallow form, provide poor flushing characteristics, giving rise to extensive intertidal mudflats and saltmarshes. Tides are variable but of low vertical range and with a 'double high' phenomenon causing water to be held at or above mean level for 16 out of 24 hours. The original heathland landscape in which the Harbour is set has been severely modified by human activity, particularly in the past 200 years, but some remaining natural transitions from saltmarsh to bog and heathland still occur. Grazing marshes and fragments of fen and carr woodland also persist, with extensive reedswamp fringes. The north-eastern shores are mostly urbanized to high water mark.

Deep water channels maintained by natural scour supplemented by dredging are restricted: some 80% of the Harbour area comprises inter-tidal, fine-grained mud, sandflats and marshes. The variety of inter-tidal and sub-tidal habitats reflects the range of substrate types and degree of exposure. Most marine invertebrate species are of widespread distribution but, especially in the case of the sheltered intertidal bays, often are in very large numbers. Associated with subtidal fine sands of the central Harbour are species-rich communities dominated by beds of the tube worm *Sabella pavonina*: such extensive beds represent a habitat not so well developed elsewhere. Whilst species diversity is generally low, Poole Harbour is notable in supporting several rare and restricted marine invertebrates. The sponge *Suberites massa*, rarely recorded in British waters, is locally abundant on suitable substrates together with an interesting community of Sea squirts, Ascidians and Sea mats, Bryozoans. Among these *Anguinella palmata* and *Farella repens* are also rare. The Starlet Sea Anemone *Nematostella vectensis* is a rare species found only in a few similar lagoonal situations and the mollusc *Aeolidiella sanguinea* is otherwise only recorded from western Ireland.

The mud and sandflats are mostly fringed on their landward sides by saltmarshes or stands of Common Reed *Phragmites australis*. Much of the saltmarsh is dominated by Common Cord Grass *Spartina anglica* which arose as a hybrid and rapidly colonized several south coast estuaries earlier this century. Some retreat or 'die-back' is now occurring across its range in southern Britain. The mid

and higher level saltmarshes are characterised by more diverse communities with many typical saltmarsh species present. The local Shrubby Seablite *Suaeda vera* occurs in places, towards the western limit of its distribution in Britain.

These fringes of saltmarsh or reed are important for several nesting birds such as Bearded Tit *Panurus biarmicus* associated with reed stands and a particularly high density of nesting Redshank *Tringa totanus* on some of the marshes. The small colonies of Black-headed Gulls *Larus ridibundus* mostly on the islands sometimes shelter a pair of Mediterranean Gulls *L. melanocephalus* and on Brownsea locally important colonies of Sandwich and Common Terns *Sterna sandvicensis* and *S. hirundo*. The expanse of intertidal flats with large populations of invertebrates is of great importance as a feeding resource for large numbers of wading birds and wildfowl in winter. These wintering birds have been recorded in Poole Harbour over the past 3 decades and at least 14 species regularly attain levels in excess of 1% of their British populations. Two species, Black-tailed Godwit *Limosa limosa* and Shelduck *Tadorna tadorna*, also regularly occur at internationally significant levels, with an excess of 1% of their western European populations present. In addition to the intertidal feeding areas, adjoining grasslands, notably at Keysworth and in the Lower Frome Valley, are important as feeding sites and high water roosts.

Poole Harbour SSSI adjoins a number of other SSSIs, notably heathland on its southern and western margins, but does include some areas of these fringing habitats, particularly at Lytchett Bay. The reedswamp merges with acidic bog communities which then grade into wet and dry heathland. There is also dry heathland of the Heather *Calluna vulgaris*/Western Gorse *Ulex gallii* type on the islands, though this has been reduced in extent through tree planting and invasion. The open dry heathland at Brownsea is particularly notable for its lichen assemblage which is of national importance. Some areas of heathland on the islands are regularly mown as lawns, modifying the vegetation to acidic grassland with heath species and a high moss content.

Wetter grasslands occur on the Harbour shores with neutral, herb-rich swards at Lytchett and more extensive brackish grazing marshes at Keysworth, the latter dominated by Creeping Bent *Agrostis stolonifera*, with frequent Strawberry Clover *Trifolium fragiferum* and Narrow-leaved Bird's-foot-trefoil *Lotus tenuis*. Wet woodlands of Birch and Sallow adjoin these areas, whilst particularly on the islands, stands of Scots and Maritime Pines *Pinus sylvestris* and *P. maritima* dominate the drier soils. Here there are populations of the rare and protected Red Squirrel *Sciurus vulgaris* and also on Brownsea the largest colony of nesting Grey Heron *Ardea cinerea* in Dorset with about 100 pairs present.

This range of habitats and their continuity with one another supports several scarce and restricted species. The nationally scarce Hairy Dragonfly *Brachytron pratense* and Small Red Damselfly *Ceriagrion tenellum* are recorded from heathland in the site, as is the Silver-studded Blue Butterfly *Plebe}us argus*. The rare shore bug *Saldula setulosa* is recorded only from Poole Harbour, on sandy areas near high water mark and the rare and endangered ground beetle *Drypta dentata* occurs on Brownsea. Both of these insects are listed in the Red Data Book.

ANNEX 20

Studland and Godlingston Heaths SSSI Condition Assessment (November 2022)

Report generated on: 04 Nov 2022

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment
Studland & Godlingston Heaths SSSI - DORSET (PURBECK)								
DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	001	1006621	5.8851	0.00	20/05/2010	Favourable	Main NVC communities M16, M21, M14Small are of wet heath is in good condition.Southern half c mire is tussocky Molinia-Schoenus, northern area short and open with extensive Sphagnum lawns. The last nightjar survey (2004) for the SSSI recorded nightjar numbers well above indicative levels for favourable condition. Dartford warbler numbers in the 2006 survey were slightly below indicative levels for the SSSI. However, other surveys have recorded much higher numbers so is not considered that this is revealing any sustained drop in the population.

	Adverse Condition Reasons
ea of a is . it	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	002	1006622	44.9795	17.46	12/10/2009	Unfavourable - Recovering

Vegetation communities assessed; H2, M16, M21, M25.The issues identified in the previous assessment remain the key ones. Molinia locally has >50% cover and forming tussocks, mainly in south where mire narrows and grades into Salix carr. Some dense Myrica gale also. Northern area has good short open mire with abundant Rhynchospora alba and Sphagnum>70%. The southern part of the unit has abundant Gorse and Bracken, although large areas of the former have been cleared. The recovering assessment is made because under an HLS agreement much of the unit is now fenced and grazing will be introduced soon (awaiting water supply). A programme of scrub control is being implemented to reduce the amounts of gorse and sallow. The last nightjar survey (2004) recorded nightjar numbers well above indicative levels for favourable condition. Dartford warbler numbers in the 2006 survey were slightly below indicative levels. However, other surveys have recorded much higher numbers so it is not considered that this is revealing any sustained drop in the population.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	003	1006649	25.8622	0.48	13/10/2010	Favourable

The unit comprises heathland around Isle of Purbeck golf course as well as one fairway, green and tee. Apart from areas immediately adjacent to the course it is grazed with the rest of Godlingston heath (see comments for units 4 and 5 about grazing intensity which is generally fine). Step mires in valleys leading up to higher ground in the south are in good condition with a high species diversity. Part of the unit has pioneer heather following a fire in spring 2010 but, despite this and one other fire (both of several ha) this year on Godlingston, fires have been unusual in recent times (since 1986 when most of the heath was burnt). The main management issue is gorse and bracken, locally abundant in some areas near to the golf course but not widespread enough to affect overall condition and not significantly worse than the previous assessment (comparision of 2002 and 2009 aerial photos). Some gorse management is taking place by NT but more needs doing on golf club land. In the west at the top end of a mire the unit has an area of sallow which has invaded, partly as a result of sewage pollution from the golf club that has now ceased. Restoration of open habitats should be considered once nutrient levels have fallen. The SSSI supports high number of both nightjar and Dartford Warbler and numbers (2008 surveys) are well above indicative levels for favourable condition.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	004	1006623	121.0348	108.17	13/10/2010	Favourable

The unit comprises the western half of Godlingston Heath with large areas of dry and wet heath reflecting a varied topopraphy and a superb mire systems northwards from higher ground in the south. All elements of the vegetation are in excellent condition with dry heath having a varied structure, and wet heat and mire a good species diversity. Part of the unit has pioneer heather following a fire in spring 2010 (partly in unit 3) but, despite this and one other fire (both of several ha) this year on Godlingston, fires have been unusual in recent times (since 1986 when most of the heath was burnt). Grazing by cattle, ponies and deer is at an intensity that is maintaining diversity in mires and not allowing excessive Molinia dominance, whilst not overgrazing or trampling dry heath. at the top end of the main mire the unit has an area of sallow (partly in unit 3)which has invaded, partly as a result of sewage pollution from the golf club that has now ceased. Restoration of open habitats should be considered once nutrient levels have fallen. The quality of the mire otherwise seems to be unaffected with large areas of high quallity M21 vegetation and a Schoenus track along its centre where bog bean, bog pondweed and marsh St John's wort were also noted. The SSSI supports a high number of both nightjar and Dartford Warbler and numbers (2008 surveys) are well above indicative levels for favourable condition.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	005	1006624	192.0833	187.40	13/10/2010	Favourable
DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	006	1006663	3.7756	0.03	15/09/2009	Unfavourable - Recovering

The unit comprises the eastern half of Godlingston Heath with large areas of dry and wet heath reflecting a varied topography and two superb mire systems, one draining eastwards and one northwards. All elements of the vegetation are in excellent condition with dry heath having a varied structure, and wet heat and mire a good species diversity. Part of the unit has pioneer heather following a fire in spring 2010 but, despite this and one other fire (both of several ha) this year on Godlingston, fires have been unusual in recent times (since 1986 when most of the heath was burnt). Grazing by cattle, ponies and deer is at an intensity that is maintaining diversity in mires and not allowing excessive Molinia dominance, whilst not overgrazing or trampling dry heath. The SSSI supports high number of both nightjar and Dartford Warbler and numbers (2008 surveys) are well above indicative levels for favourable condition.	
Unit unfavourable due to high cover of Molinia (exceeds 80% cover over most of mire areas) and consequent low species diversity, but is improving under HLS management hence merits recovering status. An area of bog pools at the eastern end is favourable, with frequent bog pondweed and common cotton-grass, and occasional round-leaved and intermediate-leaved sundews. Common gorse covers less than 5% of the mire but is abundant on adjacent drier areas where further control would be beneficial.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	007	1006626	11.1346	11.13	30/10/2009	Favourable
DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	008	1006627	3.0553	0.12	12/02/2010	Favourable
DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	009	1006650	2.2281	2.23	30/10/2009	Favourable

Vegetation communities assessed; M16, M21, (M25).Tightly grazed wet heath, with little scrub, and in good condition. Narrow strip of valley mire in north-west arm of unit. Some tussocky Molinia, but some open lawns also. Dartford warbler numbers in the 2006 survey were slightly below indicative levels. However, other surveys have recorded much higher numbers so it is not considered that this is indicative of any sustained drop in the population.	
Vegetation communities assessed; W16, W1Woodland generally in good condition. Few saplings due to deer grazing. Good amounts of standing and fallen dead wood. Very small mire area is Molinia dominated but grazed by deer.	
Vegetation communities assessed; H2, H3.Small but varied unit of humid and wet heath, acid grassland and scrub. Some recent clearance of Gorse. Unit now fenced with wider Godlingston grazing unit. Dartford warbler numbers in the 2006 survey were slightly below indicative levels. However, other surveys have recorded much higher numbers so it is not considered that this is indicative of any sustained drop in the population.	

SUPRALITTORAL SEDIMENT	ANDREW NICHOLSON	010	1006659	19.6742	11.16	12/10/2009	Unfavourable - Recovering

Dunes, dune-heathWoodland SD6, H11Some clearance of trees and scrub on dunes and around Pipley Pools. Dunes generally in good condition despite very heavy visitor pressure. Dune restoration plots working well. Despite visitor pressure some strandline species present such as Cakile maritima. Pirri-pirri Bur Acaena novae-zelandiae is present along tracks and around Pipley Pools and has increased but control programme is being implemented. The wooded areas in the south of the unit still have some non-native species spread from adjacent gardens including a little Rhododendron; there is ongoing control. This section of the coast has been eroding; gabion baskets at the back of the beach have been removed (and some beach huts relocated) to allow the coast to respond more naturally. There is still a short section of defended coast adjacent to Redend Point.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	011	1006629	64.5808	62.88	19/05/2010	Unfavourable - Recovering

A unit with varied vegetation - Dry heath, Wet heath, Mire, Woodland (H2, M16, M21, W1, W4, W10, M25). Dry heath has quite a lot of Bracken and Gorse. The wet heath is grassy in places and will benefit from grazing. The main mire at Spur Bog is generally in good condition but there does seem to have been an increase in use by Sika Deer leading to excessive poaching in some areas to the detriment of the Sphagnum carpets. This may be due to the time of the survey in the main rutting season, but still needs monitoring. The woodland areas generally are in good condition, except for a lack of regeneration in the drier Oak-Hazel-Holly woodland. Some thinning of the Holly understorey would be beneficial. Trees have been cleared from the margins of Little Sea and these areas are dominated by tussocky Molinia caerulea with Myrica gale locally abundant, and would benefit from grazing (the reason for the unfavourable assessment). A programme of scrub control is being implemented to reduce the amounts of gorse; cattle grazing is in the process of being introduced to tackle Molinia dominance. Deer control is ongoing. The last nightjar survey (2004) for the SSSI recorded nightjar numbers well above indicative levels for favourable condition. Dartford warbler numbers in the 2006 survey were slightly below indicative levels for the SSSI. However, other surveys have recorded much higher numbers so it is not considered that this is revealing any sustained drop in the population.	

SUPRALITTORAL SEDIMENT	ANDREW NICHOLSON	012	1006662	31.3638	31.36	26/03/2013	Unfavourable - Declining
SUPRALITTORAL SEDIMENT	ANDREW NICHOLSON	013	1006660	156.12	155.56	01/07/2005	Unfavourable - Recovering

Previous surveys of Little Sea have recorded a good range of aquatic plants characteristic of this type of lake. Sampling has indicated that the water quality (total phosphorus - TP) has for many years been above the guideline level for this type of lake but without any obvious effects on the flora. In the last few years, however, a number of factors have changed and the quality of the lake has declined significantly. Whilst Litorella uniflora, Isoetes echinospora, Nitella translucens and Myriphyllum were all recorded in the 2012 survey (not Elatine hexandra) they occur mostly on the lake surface since the water has become turbid (previously it was clear). This has been caused by a carp population having become established in the lake in the last 3 years ? they were not present before. Possibly linked to this disturbance of sediment, TP levels have increased linearly since 2009. There are also issues with non-native invasive species. Elodea nutallii was recorded at 89% cover in 2009 although reduced to 40-80% in 2012. Crassula helmsii (Australian Stonecrop) was present in 2009 and the 2012 survey indicated that it is increasing. There were also concerns about Filamentous algae cover (10%) and the green algae cover on the shoreline. The coastal geomorphology assessment was favourable. 2009 CSM survey and Little Sea `Lake Restoration Plan and Nutrient Budget? APEM 2013 also used to compile comment.	FRESHWATER - INVASIVE FRESHWATER SPECIES,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,
Extensive scrub clearance has occurred on this unit benefiting the mire and swamp vegetation. Progress underway to continue the control efforts re. invasive plants.	

LITTORAL SEDIMENT	ANDREW NICHOLSON	014	1006653	8.5479	5.12	20/05/2010	Favourable
LITTORAL SEDIMENT	ANDREW NICHOLSON	015	1006654	16.9551	13.65	19/05/2010	Favourable

The unit comprises only the beach between MHW and MLW and so does not include the toe of the dunes of any foredunes. However, it is critical that natural processes are maintained on the beach so that dune formation can continue. In this respect there is no apparent change from the previous assessment with accretion still occuring to the north and erosion to the south.	
Feature assessed - strandline/embryo dunes and mobile dunes (SD6). Dunes are generally in good condition considering heavy visitor pressure during summer months. Some recent clearance of Gorse. The continuation of natural coastal processes is evident with dunes actively accreting and an interesting new dune slack forming where New Cut exits onto the beach; Radiola linoides noted here. Embryo dunes are forming around clumps of the RDB Vulnerable Salsola kali. One small patch of Pirri-pirri Bur noted near Pilot?s Point.Small reedbed in the west which has unfortunately become colonised by Crassula helmsii. A control programmes for both pirri-pirri bur and Crassula are underway.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	016	1006646	45.9616	44.01	12/10/2010	Unfavourable - Recovering

This large unit, which grades into a narrow strip of saltmarsh along its western edge, is mostly dominated by extensive areas of dry and humid heath with close affinities to NVC types H2 and H3. Some small areas of wet heath (NVC types M16 & M25) occur throughout the unit, together with an area of fixed dune heath (NVC type H11) at its north-eastern extremity. A recent HLS agreement has facilitated significant progress being made towards recovering the condition of this unit through the reintroduction of grazing and the clearance of some dense stands of mature scrub (mainly Gorse). However, many areas still remain dominated by Gorse, Bracken and, particularly on the wet heath, Purple Moor-grass. A key management objective is to ensure that the grazing regime is such that it will not only maintain the areas of open heathland but also ensure that those areas recently cleared of scrub make a full recovery to good quality, open heathland. The targeted, mechanical control of Gorse regrowth may be required. The majority of the dune heath is either dominated by trees and scrub or subject to intense visitor pressure (both trampling and disturbance). There is also no opportunity for natural dune processes to take place as they are impeded by a road. It is, however, anticipated that HLS measures will contribute towards an improvement in the condition of the dune heath, particularly regarding the need for ongoing scrub control. The diversity of habitats for heathland invertebrates is good and the numbers of Nightjar (2004 survey) and Dartford Warbler (2006 survey) for the SSSI as a whole are well above indicative levels for favourable condition.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	017	1006631	4.5857	4.49	20/05/2010	Unfavourable - Recovering

A fragmented unit of heath and mire habitats. The main mire area in the west is around 50% tussocky Molinia caerulea and 50% open with well-developed Sphagnum lawns and a system of pools and runnels. It is lightly grazed. There are no particular reason to think that the distribution of these communities here does not simply reflect natural processes. The other 4 parts of the unit are much smaller; the southernmost of these - a small dry heath area - is in good condition. Moving northwards, the next part is wetter and comprises much tussocky Molinia but should be assessed as part of the large mire to the east with which it is continuous and in this context this is not significant. Similar considerations apply to the other two small areas; going northwards again drain blocking has happened in the next area (as part of overall restoration of this wetland which runs north to Rempstone unit 20) to restore natural hydrology; the easternnmost has a small area where hydrology is affected by forestry plough ridges but this is too small to be significant.	

ANNEX 21

Poole Harbour SSSI Condition Assessment
(November 2022)

Report generated on: 04 Nov 2022

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment
Poole Harbour SSSI - DORSET (POOLE, PURBECK)								
LITTORAL ROCK	ANDREW NICHOLSON	001	1005298	4.5634	0.00	16/11/2010	Favourable	Intertidal Sediment FeatureThe unit consists of a relatively thin strip of largely degraded shoreline with hard sea defence and numerous jetties and slipways. The current assessment is based on th fact that the condition of the unit has not chang since notification and that there is no scope for improving condition through management. Parts the shoreline have been observed to be importa for feeding birds when unit 2 Whitley Lake is disturbed by recreational activity.Estuarine FeatureThere was no significant algal mat cover recorded using aeriel photography in 2005 on th intertidal sediment here and therefore no sample were taken by the EA in 2008 and 2009.

	Adverse Condition Reasons
a : | ıe ed ; of ınt ıe es	

LITTORAL SEDIMENT	ANDREW NICHOLSON	002	1005301	43.6936	0.00	16/11/2010	Favourable

Saltmarsh featureApproximately 80% loss of Spartina marsh and accompanying pioneer Salicornia communities since 2004. The sand dunes are expanding at the expense of the salt-marsh the fore-dunes are dominated by Leymus arenarius SD5, with a large stand of SM24 Elytrigia atherica ? dominated upper salt-marsh community behind. Some trampling as a very heavily used site during the summer months, but no adverse affects apparent. No signs of pollution. Appears to be a natural change.Intertidal Mudflat Feature A comparison of 2002 and 2009 data found the biomass of `small worms? to have reduced although Nephtys had increased the overall biomass of invertebrates had decreased. This change could be due to slightly different seasonal difference in sampling or a result of natural variation. Further investigation is required. Estuarine featureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.Aggregation of non-breeding birdsWhitley Lake supports large numbers of feeding and roosting wildfowl although there is some disturbance from activities such as windsurfing and dog walking	

LITTORAL ROCK	ANDREW NICHOLSON	003	1005299	17.1432	0.00	16/11/2010	Favourable

Saltmarsh featureNo significant changes since 2004, still narrow band of SM6 Spartina anglica marsh grading into SM14 Atriplex portulacoides ? dominated low marsh. A very small area of SM16 Juncus gerardii upper marsh, with a band of SM24 Elymus pycnanthus salt-marsh on higher drier ground. Small beach with strandline vegetation of Beta vulgaris ssp. maritima, Atriplex spp., and Honckenya peploides, with small area of SD6 Ammophila arenaria sand dune behind. Intertidal Mudflat FeatureA comparison of 2002 and 2009 data found the overall biomass of invertebrates had decreased. This change could be due to slightly different seasonal difference in sampling or a result of natural variation. The AZTI Marine Biotic Index for the invertebrate community taken for this sample also indicated to the site to be a `heavily disturbed site?. Further investigation is required. Natural change has reduced the lagoonal character of this unit.Estuarine FeatureAlgal mats were recorded here in the summer 2009 assessment by EA however neither of the two samples taken here had more than 2kg/m2 so this unit is not considered to be in unfavourable condition in terms of algal cover.	

LITTORAL SEDIMENT	ANDREW NICHOLSON	004	1018844	9.4629	0.00	16/11/2010	Favourable
LITTORAL ROCK	ANDREW NICHOLSON	005	1018845	11.0466	0.00	16/11/2010	Favourable

Intertidal Mudflat FeatureThe unit consists of a relatively thin strip of largely degraded shoreline with groynes and jetties.The current assessment is based on the fact that the condition of the unit has not changed since notification and that there is no scope for improving condition through management. Overall biomass of invertebrates has decreased comparing 2002 and 2009 data but this change could be due to slightly different seasonal difference in sampling or a result of natural variation. Further investigation is required.Estuarine featureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009	
Estuarine FeatureAlgal mats were recorded here in the summer 2008 assessment by EA only one sample was taken here and this had > 2kg/m2. Due to the limited data taken here the unit is considered to be in favourable condition in terms of algal cover but is at risk. Intertidal Sediment FeatureThe biomass of `small worms? was much reduced as was overall biomass when comparing 2002 and 2009 data but change could be due to slightly different seasonal difference in sampling or a result of natural variation. Further investigation is required.The bay is generally open with few structures eg jetties and slipways on the foreshore.Aggregation of non-breeding birdsDisturbed by human activity here.	

LITTORAL SEDIMENT	ANDREW NICHOLSON	006	1005302	9.3359	0.00	16/11/2010	Favourable
LITTORAL SEDIMENT	ANDREW NICHOLSON	007	1005304	26.3458	0.00	20/07/2017	Unfavourable - Declining

Estuarine FeatureAlgal mats were recorded here in the summer 2009 assessment by EA however only one sample was taken here and this did not have more than 2kg/m2 so this unit is not considered to be in unfavourable condition in terms of algal cover. Intertidal Sediment FeatureThe AZTI Marine Biotic Index for one of the invertebrate community samples taken here indicated that the site was a `heavily disturbed site?. Further investigation is required.	
This comment covers all the intertidal and saltmarsh condition assessment units within Holes Bay. More specific information about individual units is included in separate comments on specific interest features.The condition of Holes Bay units is based on an assessment of the water environment, the saltmarsh, reedbed and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology and monitoring shows no evidence that the problem is reducing. Both erosion of saltmarsh and spread of reed at the expense of saltmarsh are also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

and within saltmarsh. The extent, density and biomass of macroalgae in Holes Bay south of the railway line (units 7, 10, 11, 12) equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015) and to WFD Poor class north of the railway (units 8, 59; the most affected part of the Harbour in this respect). Green algal mats were also widespread on mudflats in Holes Bay in 2016 (aerial photo 20/08/2016) and 2017. Whilst other environmental factors can limit the occurrence and abundance of macroalgae during the year and from year to year, in most years macroalgae has a presence in this part of the Harbour at less than WFD Good class, a presence that is likely to cause adverse biological effects on the ecology and that is corroborated by site research on mudflat invertebrates and wintering birds. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Although the nitrogen load from Poole STW into the back of Holes Bay has markedly reduced with nitrogen removal treatment, this source is still considerable in relation to the geographical context of the Bay. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. More detailed comments regarding saltmarsh on this unit are included in the specific saltmarsh comment, this comment covering saltmarsh over all of Holes Bay. Extent has been assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground truthed on selected units. Units have been

assessed as unfavourable only where both EA data and our own assessments both indicate significant adverse changes (saltmarsh loss, change to reedbed).Substantial loss of saltmarsh vegetation has occurred within the most of the Holes Bay saltmarshes with fragmentation of the marsh into small 'islands' divided by bare mud and developing creeks. This break up of previously continuous saltmarsh seems to be occurring throughout Holes Bay with rapid and extensive change particularly noticeable between 2008 and 2013 (Holes Bay being the most affected part of the Harbour). Retreat of marsh at the seaward face and within creeks has also occurred and is most noticeable in the central marsh which is breaking up into several islands. Several existing patches of reed have expanded at the expense of saltmarsh. These changes contribute to unfavourable condition and a number of factors are undoubtedly involved. Spartina dieback has been noted before at the back of marshes where anaerobic conditions cause the death of rhizomes due to lack of oxygen (Gray et al 1991 quoted in Corkhill and Edwards 'Poole Harbour Saltmarsh Monitoring 2006'), but this has not previously led to such extensive fragmentation of the marsh as noted here. Algal mats dislodged from mudflat are deposited on saltmarsh by high tides, smothering saltmarsh vegetation. For example, this process appears to have contributed to the virtual complete loss of a saltmarsh area in unit 12 (since it was mapped by Corkhill and Edwards in 2006 - Area 3 Holes Bay south). Smothering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. High levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, both

because of effects on root growth and the cohesion of the mud. It is possible that sea level rise is also a factor. Elevated nitrogen nutrient availability has also been shown elsewhere to promote growth of reed at the expense of smaller saltmarsh plants. For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86-1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Holes Bay itself is incomplete so does not allow a robust assessment of local changes but there is nothing to indicate that Holes Bay is in any way an exception to the overall decline in the Harbour. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	

LITTORAL SEDIMENT	ANDREW NICHOLSON	008	1005305	33.9371	0.00	27/07/2017	Unfavourable - Declining

This comment covers all the intertidal and saltmarsh condition assessment units within Holes Bay. More specific information about individual units is included in separate comments on some of the specific interest features.The condition of Holes Bay units is based on an assessment of the water environment, the saltmarsh, reedbed and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology and monitoring shows no evidence that the problem is reducing. Both erosion of saltmarsh and spread of reed at the expense of saltmarsh are also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Holes Bay south of the railway line (units 7, 10, 11, 12) equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015) and to WFD Poor class north of the railway (units 8, 59; the most affected part of the Harbour in this respect). Green algal mats were also widespread on mudflats in Holes Bay in 2016 (aerial photo 20/08/2016) and 2017. Whilst other environmental factors can limit the occurrence and abundance of macroalgae during	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

the year and from year to year, in most years macroalgae has a presence in this part of the Harbour at less than WFD Good class, a presence that is likely to cause adverse biological effects on the ecology and that is corroborated by site research on mudflat invertebrates and wintering birds. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Although the nitrogen load from Poole STW into the back of Holes Bay has markedly reduced with nitrogen removal treatment, this source is still considerable in relation to the geographical context of the Bay. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. More detailed comments regarding saltmarsh on this unit are included in the specific saltmarsh comment, this comment covering saltmarsh over all of Holes Bay. Extent has been assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground truthed on selected units. Units have been assessed as unfavourable only where both EA data and our own assessments both indicate significant adverse changes (saltmarsh loss, change to reedbed).Substantial loss of saltmarsh vegetation has occurred within the most of the Holes Bay saltmarshes with fragmentation of the marsh into small 'islands' divided by bare mud and developing creeks. This break up of previously continuous saltmarsh seems to be occurring throughout Holes Bay with rapid and extensive change particularly noticeable between 2008 and 2013 (Holes Bay

being the most affected part of the Harbour). Retreat of marsh at the seaward face and within creeks has also occurred and is most noticeable in the central marsh which is breaking up into several islands. Several existing patches of reed have expanded at the expense of saltmarsh. These changes contribute to unfavourable condition and a number of factors are undoubtedly involved. Spartina dieback has been noted before at the back of marshes where anaerobic conditions cause the death of rhizomes due to lack of oxygen (Gray et al 1991 quoted in Corkhill and Edwards 'Poole Harbour Saltmarsh Monitoring 2006'), but this has not previously led to such extensive fragmentation of the marsh as noted here. Algal mats dislodged from mudflat are deposited on saltmarsh by high tides, smothering saltmarsh vegetation. For example, this process appears to have contributed to the virtual complete loss of a saltmarsh area in unit 12 (since it was mapped by Corkhill and Edwards in 2006 - Area 3 Holes Bay south). Smothering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. High levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, both because of effects on root growth and the cohesion of the mud. It is possible that sea level rise is also a factor. Elevated nitrogen nutrient availability has also been shown elsewhere to promote growth of reed at the expense of smaller saltmarsh plants. For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86-1989/90 inc) and short and medium

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	ANDREW NICHOLSON	009	1005350	6.2061	0.00	02/07/2013	Unfavourable - Recovering
LITTORAL SEDIMENT	ANDREW NICHOLSON	010	1005306	43.4552	0.00	17/07/2017	Unfavourable - Declining

term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Holes Bay itself is incomplete so does not allow a robust assessment of local changes but there is nothing to indicate that Holes Bay is in any way an exception to the overall decline in the Harbour. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	
There has been little change in the condition of the unit since the last visit in 2010 and all the factors contributing to the unfavourable condition still apply. These factors are now being addressed through the mechanism of an HLS agreement, hence the recovering assessment.	
This comment covers all the intertidal and saltmarsh condition assessment units within Holes Bay. More specific information about individual units is included in separate comments on specific interest features.The condition of Holes Bay units	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN

is based on an assessment of the water environment, the saltmarsh, reedbed and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology and monitoring shows no evidence that the problem is reducing. Both erosion of saltmarsh and spread of reed at the expense of saltmarsh are also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Holes Bay south of the railway line (units 7, 10, 11, 12) equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015) and to WFD Poor class north of the railway (units 8, 59; the most affected part of the Harbour in this respect). Green algal mats were also widespread on mudflats in Holes Bay in 2016 (aerial photo 20/08/2016) and 2017. Whilst other environmental factors can limit the occurrence and abundance of macroalgae during the year and from year to year, in most years macroalgae has a presence in this part of the Harbour at less than WFD Good class, a presence that is likely to cause adverse biological effects on the ecology and that is corroborated by site	OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

research on mudflat invertebrates and wintering birds. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Although the nitrogen load from Poole STW into the back of Holes Bay has markedly reduced with nitrogen removal treatment, this source is still considerable in relation to the geographical context of the Bay. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. More detailed comments regarding saltmarsh on this unit are included in the specific saltmarsh comment, this comment covering saltmarsh over all of Holes Bay. Extent has been assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground truthed on selected units. Units have been assessed as unfavourable only where both EA data and our own assessments both indicate significant adverse changes (saltmarsh loss, change to reedbed).Substantial loss of saltmarsh vegetation has occurred within the most of the Holes Bay saltmarshes with fragmentation of the marsh into small 'islands' divided by bare mud and developing creeks. This break up of previously continuous saltmarsh seems to be occurring throughout Holes Bay with rapid and extensive change particularly noticeable between 2008 and 2013 (Holes Bay being the most affected part of the Harbour). Retreat of marsh at the seaward face and within creeks has also occurred and is most noticeable in the central marsh which is breaking up into several islands. Several existing patches of reed have

expanded at the expense of saltmarsh. These changes contribute to unfavourable condition and a number of factors are undoubtedly involved. Spartina dieback has been noted before at the back of marshes where anaerobic conditions cause the death of rhizomes due to lack of oxygen (Gray et al 1991 quoted in Corkhill and Edwards 'Poole Harbour Saltmarsh Monitoring 2006'), but this has not previously led to such extensive fragmentation of the marsh as noted here. Algal mats dislodged from mudflat are deposited on saltmarsh by high tides, smothering saltmarsh vegetation. For example, this process appears to have contributed to the virtual complete loss of a saltmarsh area in unit 12 (since it was mapped by Corkhill and Edwards in 2006 - Area 3 Holes Bay south). Smothering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. High levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, both because of effects on root growth and the cohesion of the mud. It is possible that sea level rise is also a factor. Elevated nitrogen nutrient availability has also been shown elsewhere to promote growth of reed at the expense of smaller saltmarsh plants. For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86-1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although

LITTORAL SEDIMENT	ANDREW NICHOLSON	014	1005303	5.6609	0.00	16/11/2010	Favourable
LITTORAL SEDIMENT	ANDREW NICHOLSON	015	1005349	12.8154	0.00	16/11/2010	Favourable

shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Holes Bay itself is incomplete so does not allow a robust assessment of local changes but there is nothing to indicate that Holes Bay is in any way an exception to the overall decline in the Harbour. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	
Estuarine featureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.The unit consists of a relatively thin strip of largely degraded shoreline with numerous jetties and slipways. The current assessment is based on the fact that the condition of the unit has not changed since notification and that there is no scope for improving condition through management.	
Estuarine featureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	018	1005352	4.2577	0.00	18/11/2010	Unfavourable - Recovering

A varied unit on the northern side of Lytchett Bay, containing heathland, secondary woodland, scrub and swamp. The woodland north of the footpath has developed on old agricultural land and the objective for natural structural development under minimum intervention which is being met. The small area of heathland towards the west side of the unit has been burnt in the past and has abundant Molinia with frequent to abundant heather, cross-leaved heath and western gorse, and occasional deergrass. A drier area has abundant bell heather and frequent bristle bent. The heath has frequent young birch and occasional young pines, and is surrounded by encroaching gorse. Further control of these is needed to prevent further loss of heathland. The southern part of the unit, which grades into the saltmarsh communities of Lytchett Bay, is also dominated by scrub and young trees, including head-high common gorse, brambles, young birch, occasional young oaks and locally frequent bracken. Tussocky Molinia is abundant in the less shaded areas. Reedswamp and sallow carr dominate the wet central eastern part of the unit, which includes an overgrown pond, and reed-mace is locally frequent. It is likely that the wetland areas are of value to breeding wetland birds, but the overall acceptable levels of scrub in the southern part of the unit requires review. Management to secure the additional management required for favourable condition has been secured through an HLS agreement. The secondary woodland in the north of the unit has abundant birch, frequent sallows, occasional oaks and holly, and rare sweet chestnut. Honeysuckle is occasional, Mahonia rare, and dead wood, both fallen and standing, is at adequate levels. It has developed on old

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	019	1005332	4.8873	0.00	13/11/2009	Favourable

agricultural land and the objective for natural structural development under minimum intervention which is being met.	
A small heathland ARC reserve north of Lytchett Bay within Poole Harbour SSSI. Common gorse has high cover in some patches and young birch, young pines and bracken are locally frequent, but there has been extensive clearance particularly of gorse as part of the reserve management, and bearing in mind the urban fringe location of the unit a favourable assessment is merited. Wet and humid heath have abundant Molinia and cross-leaved heath, frequent to abundant heather and bristle bent, and locally frequent western gorse, deergrass and bog myrtle. Mature birch and pines occur along edge of unit in some areas, whilst Rhododendron is rare. A small pond contains bulbous rush and common reed. At its southern edge the unit grades into reedbed at the northern end of Lytchett Bay.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	020	1005333	2.4215	0.00	18/11/2010	Unfavourable - Recovering

A small heathland unit north of Lytchett Bay within Poole Harbour SSSI containing wet and humid heath. Molinia, cross-leaved heath, heather and Cladonia portentosa are abundant, and western gorse, bristle bent and Spagnum compactum locally frequent. Foxgloves and Rhododendron are rare. Bog myrtle and common reed are locally frequent near the wetter southern edge of the unit where it grades into reedbed at the northern end of Lytchett Bay. Conservation management has occurred in recent years on the unit but this needs to be increased to control invasive common gorse, birch and pines, all of which are locally frequent. Browsing by deer has some beneficial effects here, in particular by controlling some of the young birch. Currently woodland alaong the western boundary occupies some 25% of the unit but a good part of this, although secondary is older brooadleaved and probably not suitable for heathland restoration. However, some mature pine in the western part of the unit should be removed to restore heathland. An HLS agreement is in place to secure the necessary management to continue the recovery.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	022	1027109	5.8695	0.00	11/10/2010	Favourable

Little change in the area of salt-marsh with some small patches of quite species-rich SM13 and a local abundance of Aster tripolium. Some conflict between boundary of salt-marsh and reedbed, and monitoring would be useful to check the salt-marsh area areas not declining significantly. Tighter grazing required in western field to reduce invasive Carex riparia.Reedbed: The reedbed is very varied with some tall dense freshwater-influenced beds at the back of the marsh which are in good condition. Also some rather stunted and sparse beds in transitions the salt-marsh SSW of Unit 21.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	023	1005335	5.9703	0.00	09/11/2010	Favourable

This unit comprises two separate areas. The southern block is a narrow strip of land mostly dominated by degenerate wet woodland; a few small pockets of open fen are also an important feature. It is part of a much larger grazing unit which has been restored to heathland (which is now part of Holton and Sandford Heaths SSSI) and this block of woodland needs to be considered as part of this wider area. Some pro-active management to increase the extent and quality of fen in this block would be desirable The northern block, which runs along the southern edge of the Sherford Brook, is also dominated by degenerate wet woodland although some small pockets of swamp also occur and a small area of open, wet grassland is present to the north of the Brook. Although the long-term management aim for the majority of this unit is minimal intervention, there is a high risk that this unit could move to unfavourable condition due to the impact of deer browsing and trampling, which is currently significantly high in some areas. The area of wet grassland in the north-west corner of the unit was mostly bare mud at the time of assessment, with deer trampling the most likely cause. Deer management should be reviewed regularly to ensure the deer population is being maintained at an appropriate level.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	024	1005336	1.4749	0.00	09/11/2010	Favourable

At notification, this isolated area of wet heath and mire adjacent to Poole Harbour was surrounded by conifers; a particularly notable aspect is the transition to brackish conditions. However, since notification, the surrounding land has been restored to heathland and this unit needs to be considered as part of this wider area (which is now part of Holton and Sandford Heaths SSSI); the two blocks of land are treated as one management unit and the intensity of grazing needs to suit the features in both SSSI units. The cover of Bracken, Bog Myrtle and Purple Moor-grass could become an issue and regular monitoring is needed to ensure that the grazing pressure is sufficient to keep these species in check. In order for this unit to retain its favourable condition status, ongoing management is required to ensure that any encroaching Rhododendron is eradicated. The overall cover of trees and scrub also needs reducing in order to restore the extent of the open habitats. Considerable progress has already been made to ensure appropriate management is in place, and it is anticipated that all ongoing management issues will be addressed by the programme of works associated with the recent HLS agreement.	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	025	1007072	4.5706	0.00	09/11/2010	Unfavourable - Recovering

This unit comprises two separate areas. The north-western block (which includes Holly Coppice) is mostly dominated by wet woodland but also includes small areas of dry woodland, heathland, fen and reed swamp. It is part of a much larger grazing unit which has been restored to heathland (which is now part of Holton and Sandford Heaths SSSI) and this block needs to be considered as part of this wider area. The smaller block, further to the east, comprises a range of transitional habitats including reed swamp, wet woodland, wet brackish grassland and dry pasture with standard trees. Although the overall long-term management aim for the wetter areas of woodland is minimal intervention, in order for this unit to achieve favourable condition status, ongoing management is required to ensure that encroaching Rhododendron is eradicated; this is particularly an issue in Holly Coppice. In addition, there is a high risk that this unit could move to unfavourable condition due to the impact of deer browsing and trampling, which is currently significantly high in some areas. This aspect should be reviewed regularly to ensure the deer population is being maintained at an appropriate level.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	026	1005337	23.4858	0.00	16/11/2010	Unfavourable - Recovering
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	027	1005312	144.3337	0.00	07/01/2020	Unfavourable - Declining

The reedbed is heavily used by a herd of Sika Deer. By comparing the 2005 and 2009 aerial photographs it is clear there has been some expansion of gaps in the reedbed by grazing deer. These areas are effectively grazed upper salt-marsh with Agrostis stolonifera, Festuca rubra and Juncus gerardii. Dense reeds still occupy 60-70% of the unit, and are generally in good condition. There is ongoing program of deer management at Holton Lee, hence the recovering assessment.A very important feature of this reedbed is the full range of transitions through from brackish to freshwater through to wet woodland and mire, with each transition supporting different plant species.The small area of saltmarsh towards Holton Point is in good condition. It is largely tussocky upper marsh with Elytrigia atherica, Festuca rubra, Juncus gerardii, and Juncus maritimus, with inundated pools containing abundant Salicornia ramosissima. Some grazing would be desirable to open up the sward and prevent the further encroachment of reeds. On drier ridges there are small stands of Gorse scrub which should be removed.	
Unit 27 General Comment - see also separate comments on specific featuresThe condition of the unit 27 at Lytchett Bay is based on an assessment of the water environment, the saltmarsh, mudflat and reedbed habitats, and wintering birds. The unit was assessed being in favourable condition in 2010 but a number of factors indicate that this is no longer the case.There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology of both the littoral sediment.and saltmarsh and there is no sign that the problem is reducing.	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL

These eutrophication indicators are as follows:- Winter dissolved inorganic nitrogen (DAIN) concentrations exceed the WFD good/moderate boundary across the Harbour as a whole and indicate that Poole Harbour is hypernutrified throughout. This elevated level of nitrogen enrichment encourages the growth of dense mats of opportunistic macroalgae on mudflat and within saltmarsh which are widespread through the Harbour; there is evidence to show that algae persist throughout the winter months in some of the more sheltered areas of the Harbour. Despite the high DAIN concentrations phytoplankton abundance has been assessed at WFD Good status Harbour-wide. There have been no water quality measurements made in Lytchett Bay itself.Other measures indicate the extremely eutrophic current state of the Harbour. The overall N loading to the Harbour, with over 2000 tonnes of nitrogen from rivers and WWTW coming in annually, is some 600kg/ha/yr. For Lytchett Bay, disregarding inputs from the rest of the Harbour, inputs come mainly from the Sherford River and equate to a loading of approximately 950kg/ha/yr. These loadings are hugely elevated compared with natural situations and are at the high end of estuarine loadings; they inevitably result in profound ecological changes eg Latimer and Rego (2010).A paleoenvironmental investigation (Crossley 2019) demonstrated some of these changes and showed that between the late 1800s and the 1960s there was little change in water quality. From the 1960s to the present day there was a steady, and occasionally dramatic, decline in water quality in all of the 4 locations sampled.These loadings and N concentrations are well above the level where Submerged Aquatic Vegetation (SAV) such as Zostera marina and	SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

Zostera noltii is lost from estuaries (Latimer and Rego 2010).Historical records indicate that SAV plants Zostera noltii was once found in the northern part of Poole Harbour and Ruppia maritima was common in the brackish pools and ditches with a dwarf form was exposed on mud at low tide from Hamworthy to Lytchett Bay (Hubbard and Stebbings 1968). These plants no longer occur in these places despite Ruppia being less sensitive to elevated N than the Zosteras (Burkholder et al 1994).Several strands of evidence - aerial photos, observations by local naturalists, EA survey 2019 and NE site visit in 2019 – indicate that macroalgal cover in Lytchett Bay has now reached the point where the unit is no longer favourable. Detail is given under the comment for littoral sediment.Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984) following a previous rapid saltmarsh expansion at the beginning of the twentieth century. Although in some respects the extent and quality of saltmarsh at Lytchett Bay appears relatively stable (with the seaward extent of the marsh still similar to 1947 - from the aerial photo of that date) compared with the substantial changes that have and are occurring elsewhere in the Harbour, significant invasion of saltmarsh by reed has occurred. Reed expansion at the expense of saltmarsh is another indicator of eutrophicaion. Further detail is included in the saltmarsh comment. For the Harbour as a whole, numbers of wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and these declines have also

triggered WeBs alerts where comparison with national trends indicates site-specific pressures are at least in part contributing to this decline. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs 1977, Tubbs and Tubbs 1980)). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species. Numbers of breeding redshank on Lytchett Bay saltmarsh have declined since 1997 (Archer and Branson 2014). Current measures to address all of these matters are not adequate to achieve favourable condition; further measures, on a much greater scale, are required to tackle these issues and achieve a substantial decline in the nitrogen, and possibly phosphorus, load.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	ANDREW NICHOLSON	029	1005347	1.9821	0.00	09/11/2010	Favourable
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	031	1005338	188.1404	15.97	09/11/2021	Unfavourable - Declining

This narrow unit runs alongside the Upton Bypass and provides an important buffer, from both pollution and disturbance, to the adjacent SSSI units. Although it is dominated by secondary woodland, mostly birch and mature scrub, there is a small, open area towards the eastern end which grades into the adjacent reedbed. The woodland at the western end of the unit is more open with a grassland understorey and part of the same grazing unit as other areas of SSSI grassland, all of which are in the HLS grassland restoration option. The long-term management aim for the remainder of the unit is minimal intervention and it is anticipated that succession to deciduous woodland, under the influence of some grazing, will eventually occur over much of the area.	
The condition of the unit 31 at Holton Mere is based on an assessment of the water environment, saltmarsh, mudflat and reedbed habitats, and wintering and breeding birds. The unit was assessed as being in favourable condition in 2010 but further information no longer supports this situation. From this further information the unit is concluded to be in unfavourable condition because of unfavourable assessments for several interest features – littoral sediment, saltmarsh and some of the wintering bird features. All the unfavourable features are also assessed as declining. This is both because of trends of loss and decline of the features that are continuing and because measures to address these negative changes lack sufficient certainty to be confident of recovery. Whilst several different factors may contribute to the negative trends, one overarching and dominant factor is eutrophication (nutrient enrichment).There are both water quality and	

biological indicators of a eutrophication problem that is affecting the ecology of littoral sediment, saltmarsh some wintering birds and there is no sign that the problem is reducing. These eutrophication indicators are as follows:-Winter dissolved available inorganic nitrogen (DAIN) concentrations are considerably elevated, exceeding the WFD good/moderate boundary across the Harbour as a whole, and particularly so west of the Arne peninsula in the vicinity of this unit. The high concentrations are one indication that Poole Harbour is hyper-nutrified throughout. This elevated level of nitrogen enrichment encourages the growth of dense mats of opportunistic macroalgae on mudflat and within saltmarsh which are widespread through the Harbour with algae persisting throughout the winter months in some of the more sheltered areas of the harbour. Despite the high DAIN concentrations, phytoplankton abundance has been assessed at WFD Good status Harbour-wide. There have been no water quality measurements made in the Holton Mere unit itself.Other factors indicate the extremely eutrophic current state of the Harbour. The overall N loading to the Harbour, with some 2300 tonnes of nitrogen carried by inflowing rivers and WWTW outfalls coming in annually, equates to some 640kg/ha/yr based on a water area at High Water Spring Tide of 3600 ha. This loading is hugely elevated compared with natural situations. Such loadings result in profound ecological changes eg Latimer and Rego (2010) and are well above the level where submerged aquatic vegetation (SAV) such as Zostera marina and Zostera noltii is lost from estuaries (Latimer and Rego 2010, Benson et al 2013).and typically estuaries become dominated by macroalgae as is

the case for much of Poole Harbour.Evidence both from a series of aerial photos since the previous assessment and from EA survey in 2019 indicates that the extent and density of macroalgal cover in this unit is not favourable for the condition of the littoral sediment habitat and in providing food availability for the estuarine bird community. Detail is given under the comment for littoral sediment.Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984, Gardiner 2015) following a previous rapid saltmarsh expansion at the beginning of the twentieth century. The unit includes the 'gull islands' where there has been a steady decline in saltmarsh area over many years with about a quarter of the area of the islands having been lost since 2002. A number of research studies have demonstrated that eutrophication makes saltmarshes more susceptible to erosion. Further detail is included in the saltmarsh comment.Recent analysis of saltmarsh sediment nutrient concentrations at Studland and at Holes Bay (J. Martin pers comm) show greatly elevated levels of ammonia, nitrate and phosphate compared with typical global and European values. This supports previous work (Hübner, 2009) showing that there are elevated phosphorus concentrations in mudflat habitat across much of the Harbour, including mudflat in this unit. A paleoenvironmental investigation (Crossley 2019) showed that between the late 1800s and the 1960s there was little change in water quality. From the 1960s to the present day there was a steady, and occasionally dramatic, decline in water quality in all of the 4 locations sampled. This investigation is supported by observational accounts recording excessive growth

of opportunistic green macroalgae in Holes Bay in the 1960s, in several parts of the harbour in the 1980s, widely in the harbour in the 1990s and spreading into sub-tidal channels by the early 2000s.Historical records indicate that dwarf eelgrass Zostera noltii was once found in the northern part of Poole Harbour and wigeon grass Ruppia maritima was common in the brackish pools and ditches, with a dwarf form exposed on mud at low tide from Hamworthy to Holton Mere (Hubbard and Stebbings 1968). Remains of 3 species of eelgrass (Zostera) were found in samples taken from under Keysworth Marsh (just S of this unit) indicating that the mudflat supported Zostera communities before the invasion of Spartina. These plants no longer occur in these places despite Ruppia being less sensitive to elevated N than Zostera marina. Birds A number of factors indicate that the overall condition of the harbour in relation to its capacity to support wintering bird populations is unfavourable. This wintering bird assessment has been made in relation to the interest features of >20,000 waterfowl and the peak wintering populations of some species. Although the total number of wintering waterfowl has been relatively stable and above 20,000 the composition of this bird assemblage has changed markedly with some species showing substantial increases and others significant declines. It is the nature of these changes that leads to the unfavourable assessment as detailed below with the assessment focussing particularly on the nine individual species that are features of this unit (because they mainly depend on intertidal habitat rather than open water and the subtidal - redshank, grey plover, curlew, dunlin, black-tailed godwit, avocet, shelduck, teal,

brent goose). Wintering populations of avocet and black-tailed godwit have generally increased in line with national trends but declines have occurred in a suite of the commoner wader species – redshank, grey plover, curlew, dunlin, and lapwing. These declines have been both absolute and relative to populations in a wider geographical context, notably with the proportion of the national population supported by the harbour decreasing for all these birds. Nationally important populations of these species at the time of SSSI notification in 1990 (all the above except lapwing) have decreased to the point that all except redshank do not now occur in nationally important numbers. Populations of these 4 nationally important waders (redshank, grey plover, curlew, dunlin) have not declined to the extent that any individually fall below the indicative level for favourable condition for that species (lowest winter annual mean peak count in period 1985/6 to 1989/90) and therefore they have not, apart from grey plover, been classed as unfavourable. Rather the declines have been taken into account in the wider >20,000 waterfowl bird feature assessment. Grey plover is seen as an exception for two reasons, first one anomalous low annual peak mean between 1985 and 1990 (only 32% of the overall mean for that period) has set a very high bar for assessment by this method and second, the decline of the population in relation to national numbers is particularly large with the most recent 5 year average proportion only half of its value between 1985/6 and 89/90 (0.6% v 1.3%). Shelduck has shown the greatest decline of any of the wintering bird species with wintering numbers only 48% of their level in the pre 1990 reference period; numbers have been below the

favourable condition threshold level since 2006/7. The decline is not in line with national trends; the mean proportion of the national population was 4.9% in the 5 years before1990 but had dropped to 3.5% in the 5 years pre 2018. Alongside these declines other species particularly wigeon, brent goose and teal have increased which has largely been responsible for maintaining overall wintering bird numbers. There are now almost 6 times as many wintering wigeon as there were in the late 1980s and the harbour's proportion of the national population has risen from 0.4% to 1.2%. Whilst multiple factors are likely to be involved in driving these changes there are strong indications that eutrophication is significant. The strongest evidence of negative effects from eutrophication from studies elsewhere are for shelduck (MacDonald 2006) the species that shows the greatest decline in Poole Harbour. Tubbs (1977) and Raffaelli et al (1989) documented declines in shelduck concurrent with increasing eutrophication and macroalgae. Shelduck avoided foraging in areas with dense algal mats (Tubbs 1977, Tubbs and Tubbs 1980). Brent goose, wigeon and teal - are to varying degrees herbivorous birds, known to feed on green macroalgae, so their substantial rise may be associated with the abundance of these algae in the harbour and especially algal persistence into the autumn and winter period.Littoral sediment (unfavourable declining)The littoral sediment feature in this unit is assessed as unfavourable because of the extent of the occurrence of macroalgae on mudflat. A number of environmental factors apart from nitrogen (e.g. temperature, exposure, salinity, phosphorus concentration, light penetration, sediment nutrient re-cycling) can affect the

occurrence, abundance and type of macroalgae both during the year and from year to year. Evidence from different aerial photos shows algal mats were widespread on mudflats on this unit in 1997, 2002, 2005, 2008, 2009, 2015, 2016, 2017 and 2018 (not every year has aerial photo coverage; in some years aerial photos show little or no algae in the unit but these were all from spring photos, before significant algal growth commences). Algae in the unit is not ubiquitous on the mudflat but generally in three discreet areas. The first is in a sheltered area of some 40ha to the north of the Shag Looe Head peninsula (called Holton Bay in EA surveys). Here it typically occurs in streaky pattern. The second is a smaller area, in the bay to the east and in the lea of Wood Bar (an area not sampled by EA). Here it can be dense and occupy most of the mudflat in this small bay. The third is between the middle and east of the gull islands (see saltmarsh comment for more information about these islands). Here the amount of macroalgae has been less in recent years, probably because the continued widening of this channel has meant that the area has become progressively more exposed.Normally the lower part of the mudflat in Holton Bay, nearer to Wareham Channel, does not support macroalgae but there are indications that this is a result of unnatural factors. Dyrynda (1985) in a subtidal survey of the harbour found a strong turbidity/light penetration gradient between the east and west of the harbour. Light penetration was greatly reduced both in western part of the harbour and the two embayments (Holes Bay and Lytchett Bay) and here the boundary between the infralittoral zone (where there is sufficient light for macroalgae) and the underlying circalittoral zone (where there isn't)

was at or above chart datum (CD), in some places as much as 0.75m above CD (compared with up to 5m below CD in the eastern harbour). Environment Agency turbidity measurements show turbidity is much greater in the Wareham Channel than in the eastern and central harbour (mean roughly 20ftu compared with10ftu or less at all other monitoring points). These observations are consistent with light limitation of macroalgae on lower mudflats in the western harbour. Taken as a whole, the abundance of macroalgae across this unit in Holton Bay has varied between Moderate and Good quality classes (assessed using UK TAG methodology) based on four years of survey data (2008, 2009, 2011, 2019) collected by the Environment Agency. Condition for the designated site interest features is based on the sub-site meeting at least Good quality class on macroalgae abundance in majority of survey years, not the average class value and consideration of further evidence where available. The evidence above indicates that algal abundance in this unit is excessive and the habitat is not in favourable condition.Work in Poole Harbour on the relationship between algal cover and benthic fauna (Jones and Pinn 2006, Thornton 2016) found that algal coverage resulted in major changes to benthic fauna with Thornton finding an increased abundance of smaller less energy-dense species at the expense of larger species (resulting in a decline in energy available to wading birds) with changes persisting after algal coverage had diminished in winter.Saltmarsh (unfavourable declining)The saltmarsh feature is assessed as unfavourable because of the rapid erosion rate of the ‘gull islands’ and the more minor reed invasion at Wood Bar. There are two main areas of

saltmarsh in the unit: the first on a peninsula near the entrance to Lytchett Bay called Wood Bar, the second on three offshore saltmarsh islands notable for supporting a large colony of black-headed gulls.The saltmarsh on Wood Bar is mainly Spartina dominated, or Spartina/Puccinellia dominated, lower to mid marsh (Edwards 2004) and, apart from some reed expansion mentioned below, has changed little in extent since his survey. There is a small area of reed in the NW adjacent to the shoreline. This has expanded since 2002 (approximately doubling in size between 2002 and 2018 – 0.3ha to 0.65ha) with the reed edge moving southwards at a little under 1m every year (a rate comparable with reed expansion in Lytchett and Holes Bay although it is still quite small). Reed is indicative of relatively high nutrients (Hill et al 1999); Bertness et al (2002) found aggressive reed invasion of saltmarsh was linked to eutrophication and shoreline development, even when saltmarsh was subject to inundation by fully saline seawater.The middle and eastern of the 3 gull islands were, until about 20 years ago, joined by a sand bar along their southern shoreline with saltmarsh on its northern side, all enclosing a small bay with an entrance to the harbour in the north. This connection narrowed between 1974 and 1997 until the spit was breached sometime between 1997 and 2002; the separated islands are now divided by a channel some 120m wide.Between 2002 and 2018 the 3 islands together have shrunk at a rate of about 700m2 annually losing 23% of their area in this time (4.8ha 2018, 3.7ha 2002). The majority of this loss has been on the exposed southern and western shorelines which have retreated significantly. The other saltmarsh edges have been

relatively stable. However some widening of the small saltmarsh creeks has also occurred, particularly at their upper ends.Areas of Saltmarsh in ha on gull islands from aerial photosYearwestmiddleeastTotal20021.172.90.764.8320091.0782.6560.6164.3520180.9352.2950.4843.71 Links between saltmarsh erosion and eutrophication have been found in a number of studies, both by comparing saltmarsh loss on marshes exposed to different levels of eutrophication (Wigand et al 2014) or by experimental nutrient additions (Deegan et al 2007, 2012). In the latter case nitrogen loadings (150 – 600kg/ha/yr) applied were of the same order or significantly lower than currently occurring Poole Harbour N loads and effects found included a decrease in the dense, below-ground biomass of bank-stabilizing roots, increased microbial decomposition of organic matter, and reduced geomorphic stability, resulting in creek-bank collapse with significant areas of creek-bank marsh converted to unvegetated mud. Macroalgal wrack also contributes to saltmarsh loss through smothering at saltmarsh edges and on the lower marsh increasing the rate of saltmarsh edge erosion (Wasson et al 2017) an effect that can be seen in many places in the harbour. Reedbed (favourable)The reedbed feature is assessed as favourable, with the habitat showing dynamic change albeit through increases at the expense of other habitat features and losses from deer pressure. Holton Heath reedbed, which forms the northern fringe of the unit is, at some 17ha, one of the largest in the harbour. In 1946 the area was still largely saltmarsh but by 1972 it had mostly been colonised by reed but with a narrow strip of saltmarsh still remaining along the shoreline. It is

predominantly a saline reedbed with only small freshwater inputs in the west. A detailed survey in 2002 (Cook 2002) found that generally the bed had good quality, straight, tall, dense reed with a good flowering rate. There was very little scrub. There is no indication that there has been any significant change in these attributes. A small area devoid of reeds about 0.65 ha in area is visible on the 2002 aerial photo and by 2018 this has expanded to about 1ha. This hole in the reed had been caused by sika deer. Corridors are now cut in the reed to allow for better deer control in the reedbed. Alongside this loss of reed there has been an expansion of the reedbed into the adjacent mudflat, mainly at the more sheltered southern end of the shoreline. Here between 2002 and 2018 the seaward edge of the reedbed has advanced by some 25m, increasing the area of reedbed by about 0.75ha. In the same time span, in the north, the reed edge against the mudflat has changed little in position.ReferencesBenson, J.L., Schlezinger,D., Brian L. Howes, B.L. (2013). Relationship between nitrogen concentration, light, and Zostera marina habitat quality and survival in southeastern Massachusetts estuaries. J. Environ. Manage. 131, 129-137. http://dx.doi.org/10.1016/j.jenvman.2013.09.033Bertness, Mark D, Patrick J. Ewanchuk, and Brian Reed Silliman (2002). Anthropogenic modification of New England salt marsh landscapes. PNAS February 5, 2002 99 (3) 1395-1398; https://doi.org/10.1073/pnas.022447299Burkholder, J.M., H.B. Glasgow, and J.E. Cooke, (1994) Comparative effects of water-column nitrate enrichment on eelgrass Zostera marina, shoalgrass Halodule wrightii, and wigeongrass Ruppia maritima. Marine Ecology Progress Series,

1994. 105(1-2): p. 121-138.Cook, K 2002 Poole Harbour reedbeds: year 2000 survey. Report to Purbeck Reedbed Working Group.Crossley, Laura Helen (2019) Palaeoenvironmental reconstruction of Poole Harbour water quality and the implications for estuary management. University of Southampton, Doctoral Thesis, 331ppDeegan, L. A. and 17 others (2007) Susceptibility of salt marshes to nutrient enrichment andpredator removal. Ecol. Appl. 17, S42–S63 (2007). Deegan, L. A., D. S. Johnson, R. S. Warren, B. J. Peterson, J. W. Fleeger, S. Fagherazzi, and W. M. Wollheim 2012. Coastal eutrophication as a driver of salt marsh loss. Nature 490:388–392.Dyrynda, P 1985 Poole Harbour sub-tidal survey: general assessment and northern sector survey (1985) report. Report to Nature Conservancy CouncilEdwards, B 2004.The vegetation of Poole Harbour. Poole Harbour Study Group, Wareham. Publication No. 3Gardiner, S.C. (2015) Physical drivers of saltmarsh change in enclosed microtidal estuaries. School of Civil and Environmental Engineering, University of Southampton, PhD thesis. 1-211.Gray, A J and Pearson J M (1984). Spartina marshes in Poole Harbour, Dorset. In Spartina anglica in Great Britain, edited by Pat Doody, NCC 1984Gray, A J (1984). Poole Harbour: Ecological Sensitivity Analysis of the Shoreline. Natural Environmental Research Council/Institute of Terrestrial Ecology.Hill, M.O.; Mountford, J.O.; Roy, D.B.; Bunce, R.G.H (1999). Ellenberg's indicator values for British plants. ECOFACT. Volume 2 Technical Annex.Hubbard J C E 1965 Spartina marshes in southern England VI. Pattern of invasion in Poole Harbour. Journal of Ecology 53, 799-813.Hubbard J. C. E. and R. E. Stebbings 1968 Spartina Marshes in Southern England: VII. Stratigraphy of the

Keysworth Marsh, Poole Harbour. Journal of Ecology Vol. 56, No. 3 (Nov., 1968), pp. 707-722.Hübner, R 2009 Sediment Geochemistry – a case study approach. PhD thesis, Bournemouth University.Jones, M. & Pinn, E. (2006). The impact of a macroalgal mat on benthic biodiversity in Poole Harbour. Marine Pollution Bulletin. 53 (1). 63–71.Langston, W.J., Chesman, B.S., Burt, G.R., Hawkins, S.J., Readman, J. & Worsfold, P. (2003). Site Characterisation of the South West European Marine Sites.Latimer, James S. and, Steven A. Rego (2010) Empirical relationship between eelgrass extent and predicted watershed-derived nitrogen loading for shallow New England estuaries. Estuarine, Coastal and Shelf Science 90 (2010) 231-240.MacDonald, M.A. 2006. The indirect effects of increased nutrient inputs on birds in the UK: a review. RSPB Research Report 21. RSPB, Sandy, Bedfordshire. Raffaelli, D., Hull, S.C., & Milne, H. (1989) Long-term changes in nutrients, weed mats and shorebirds in an estuarine system. Carolina Biology Readers, 30, 259-270. Thornton, A (2016). The Impact of Green Macroalgal Mats on Benthic Invertebrates and Overwintering Wading Birds. Doctorate Thesis. Bournemouth University.Tubbs, C. R. (1977) Wildfowl and waders in Langstone Harbour. British Birds 70: 177-199.Tubbs C. R. & Jennifer M. Tubbs (1980) Wader and Shelduck feeding distribution in Langstone Harbour, Hampshire. Bird Study, 27:4, 239-248, DOI: 10.1080/00063658009476684 Wasson K, Jeppesen R, Endris C, Perry DC, Woolfolk A, Beheshti K, Rodriguez M, Eby R, Watson EB, Rahman F, Haskins J, Hughes BB. 2017. Eutrophication decreases salt marsh resilience through proliferation of algal mats. Biological Conservation

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	032	1005314	130.3819	0.00	11/10/2010	Favourable

212: 1-11.Wigand C, and 10 co-authors (2014). Below the disappearing marshes of an urban estuary: Historic nitrogen trends and soil structure. Ecol Appl 24:633–649	
Very few changes from the 2001 around half well grazed, and Shag Looe Head only locally grazed by deer. Some minor poaching due to heavy use by deer in the north-west of the unit.	

NEUTRAL GRASSLAND - Lowland	ANDREW NICHOLSON	033	1005342	66.7456	0.00	16/11/2010	Unfavourable - Recovering

This large unit of predominantly open grazing marsh, with its network of ditches and former saltmarsh creeks, is part of a network of sites around Poole Harbour which support nationally important aggregations of non-breeding birds (i.e. Black-tailed Godwit, Curlew, Whimbrel, Grey Plover, Redshank, Shelduck, Brent Goose, Pintail and Teal). The condition of the area has improved since the last assessment, primarily due to the removal of invading scrub from the open marsh, the on-going control of rushes and the implementation of an appropriate grazing regime which is ensuring the maintenance of a short sward, particularly during the autumn/winter, a key period for birds. However, if this unit is to continue to move towards favourable condition a sustained programme of appropriate, rotational ditch/creek clearance also needs to be a continuing high management priority. The ability to maintain shallow, splash flooding across the site during key periods by managing ditch water levels is also an important factor. Both measures will ensure a continuity of open, shallow, soft, muddy margins to the ditches, creeks and in-field depressions, an important requirement of the key bird species. An area of species-rich fen-meadow in the north-west corner of the unit (a mosaic of National Vegetation Types M23, M24 and M25) would benefit from measures to break up the blocks of scrub so as to make it easier for stock to tackle the currently high cover of coarse grasses. However, the retention of some small patches of scrub along the more sheltered, inland boundary of the unit is also important in order to provide cover and shelter for birds, mammals and invertebrates.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	034	1005315	25.3719	0.00	15/09/2010	Favourable
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	036	1005316	172.6902	15.84	31/03/2010	Favourable
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	037	1005317	84.1752	34.04	25/04/2019	Unfavourable - Declining

Communities and zonation noted in 2001 survey still present.The sward is mainly quite long and closed.Some minor encroachment of reedbed on the south side.	
Estuarinefeature - favourable. There was no significant algal mat cover recorded using aerial photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.Intertidal sediment feature - favourable. Overall biomass invertebrates has decreased comparing 2002 and 2009 data but change could be due to slightly different seasonal difference in sampling or a result of natural variation. Further investigation is required.	
The condition of the unit 37 at Arne Bay is based on an assessment of the water environment, the saltmarsh and mudflat habitats, and wintering birds. The unit was assessed being in unfavourable condition in 2010 and number of factors indicate that this is still the case. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is reducing. Numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh alalthough it has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide). The extent, density and biomass of macroalgae at Arne	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD

Bay puts the unit on the bordline between WFD Moderate and WFD Good classes based on three years data (2008, 2009, 2011). Condition is based on each sub-site or unit meeting site-specific target in majority of survey years, not the overall WFD EQR, and since the unit did not meet this site-spcific target of 'Good' in 2 of the 3 survey years it is assessed as unfavourable. A number of environmental factors apart from nitrogen (eg temperature, exposure, salinity, phosphorus) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In addition to the now somewhat dated WFD data evidence from different aerial photos shows algal mats were widespread on mudflats in Arne Bay in 2002, 2008, 2009, 2016, 2017 and 2018 (in every year where aerial photo coverage is at the right time of year). Research in Poole Harbour on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984) following a previous rapid saltmarsh expansion at the beginning of the twentieth century when a new hybrid of Spartina colonised what before was largely mudflat. However, the extent of saltmarsh at Arne Bay appears relatively stable compared with the substantial changes elsewhere in the Harbour with the extent of the marsh still similar to 1947 (from the aerial photo of that date). EA saltmarsh	SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,	

geomatic data comparison (between 2011 and 2014) itself derived from aerial photos does not reveal any significant saltmarsh changes there and neither do recent aerial photos show any evidence of the processes affecting saltmarsh in many places elsewhere in the Harbour (first erosion at the marsh edges, assigned to effects of wave attack; second, die-back in and around pans within the interior of the sward edge, probably due to a combination of soil and physiographic factors within mature marshes causing waterlogging, onset of anaerobic conditions and ultimate death of plants; third, formation of new of marsh channels, channel widening and coalescence producing increasingly fragmented islets separated by a reticulated pattern of mud). Nevertheless aerial photos do show algae accumulating along the edge of the saltmarsh in the north of Arne Bay.At the time of the last assessment in 2010 deer numbers were high and the deer grazing had resulted in an increase local dominance of Puccinellia in a tightly grazed sward. Since that time, deer numbers are much reduced but the effects of deer are still apparent. Further information on saltmarsh condition is given in the specific saltmarsh comment.For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86-1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site than expected from these trends and therefore it is likely site-specific pressures are contributing at least in part to this decline.

Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.Numbers of breeding redshank on the Arne saltmarshes appear to have remained stable since 1997 (Archer and Branston 2014). ReferencesArcher, R and Branston T (2014) Poole Harbour Breeding Redshank Survey 2014. RSPB report. Edwards, B (2004). The Vegetation of Poole Harbour. Poole Harbour Study Group Publication no. 3..Hubbard J C E 1965 Spartina marshes in southern England VI. Pattern of invasion in Poole Harbour. Journal of Ecology 53, 799-813.Tubbs, C (1984) Spartina on the South Coast an introduction. In Spartina anglica in Great Britain edited by Pat Doody, NCC 1984.Gray, A J and Pearson J M (1984). Spartina marshes in Poole Harbour, Dorset. In Spartina anglica in Great Britain, edited by Pat Doody, NCC 1984

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	038	1005318	75.1302	25.39	12/08/2009	Unfavourable - Recovering
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	040	1005319	42.8561	29.85	12/10/2010	Unfavourable - Recovering

Saltmarsh: Still some deer pressure with some erosion of creek edges, much of the lower marsh is dominated by Salicornia spp. and Puccinellia maritima, with Atriplex portulacoides locally abundant along creek levees and on the outer marshes, which also have occasional patches of Limonium vulgare. There has been some die-back of Spartina on the outer marshes with patches of bare mud being colonised by Salicornia spp. There are thin strips of upper marsh (SM18) dominated by Juncus maritimus, and good transitional vegetation with Juncus subnodulosus and Schoenoplectus tabernaemontani where there are freshwater inputs into the back of the marsh.Estuarine Feature: There was no significant algal mat cover recorded using aerial photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.	
Still some deer pressure with some erosion of creek edges, however despite this bare mud is <25%. Much of the lower marsh is dominated by Salicornia spp. and Puccinellia maritima, with more scattered Atriplex portulacoides, Limonium vulgare and Plantago maritimum. Much more Spartina anglica on the Slepe Moor side of the channel. On the Arne side there is very good transitions through Juncus maritimus dominated SM15 to SM18 with Juncus maritimus, Festuca rubra and Oenanthe lachenalii. Also very good freshwater and mire transitional communities characterised by Juncus subnodulosus and Schoenus nigricans.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	042	1005320	170.2802	25.63	29/09/2009	Favourable

Saltmarsh - favourable. Little change in the area of salt-marsh with only limited erosion of the outer edges. Some die back of Spartina anglica (SM6) within the lower marsh, some of which has become colonised by Puccinellia maritima and Salicornia europaea and S. ramosissima. No changes in upper salt-marsh which is in good condition. Good transitions present to reedbed and to brackish grassland (MG11) with inundation pans supporting SM 23. Also freshwater inputs into the back of the marsh in the area of the unit by the mouth of the Corfe River. The small areas of reedbed are generally in good condition. No signs of pollution. The surrounding mudflats are largely free of green seaweed. No adverse poaching in grazed areas.Estuarine Feature - favourable. Algal mats were recorded here in the summer 2009 assessment by EA however none of the samples taken here had more than 2kg/m2 so this unit is not considered to be in unfavourable condition in terms of algal cover .	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	ANDREW NICHOLSON	044	1005348	4.0074	0.00	30/11/2010	Unfavourable - Recovering

The previous assessment showed the island to be largely tree and scrub (with rhododendron) dominated in the north with open areas of bracken in the south; there have been significant recent changes with, the island fenced, much of the rhododendron cut and bracken control begun. Old maps (2nd edition OS) show the island as heath but on the 1946 aerial, boundaries of fields are visible in the south which may explain the prevalence of bracken (the area had much bracken even then). The north is heathy but trees are starting to invade. The bracken area has recently been rolled - the first stage in trying to establish a heath or grass/heath sward but it is too early and the wrong time of year to assess likely success. There is a thick layer of bracken mulch that will need to be tackled. The cliff slope along the southern shore is dominated by common gorse (with some western gorse also noted) and bracken, with some heather, much as described in the 1984 survey. The north of the island is more open than before mainly due to the clearance of rhododendron and other scrub in areas once impenetrable. now there is just grass under the trees. Management actions (clearance of scrub, bracken control, plus the introduction of light pony grazing) leading to more appropriate vegetation in keeping with the acid soils are in place, hence the recovering assessment.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	ANDREW NICHOLSON	045	1005346	3.0677	0.00	30/11/2010	Unfavourable - Declining
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	046	1005321	63.7461	0.00	30/11/2010	Favourable

The island is not greatly changed since the last assessment but the features of interest have declined somewhat. Thus the cliff slope along the south west shoreline is now almost entirely shaded by pines, with virtually no heather or unshaded sand. This is potentially an important feature. The acid grassland in the central area of the island is mown and has a significant amount of heather but there is much needle fall and shading from the large pines. The slope on the southern part of the island has become more invaded with young trees and bracken and again could be an interesting area of heathland if managed appropriately. There is a substantial amount of rhododendron, mainly in the north.	LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,LACK OF CORRECTIVE WORKS - INAPPROPRIATE WEED CONTROL,
Unit comprises saltmarsh and mudflat around Long and Round islands, the saltmarsh c.21ha. Comparison of aerial photos shows little change between 2002 and 2009 save for a very small retreat on the NE shorelines of both islands. Much of the marsh is dominated by sea purslane with Spartina frequent (but only locally dominant) and occasional sea lavender. The marsh is ungrazed and has a good structure (cf the short deer-grazed swards on much of the mainland) and natural sinuous creeks as well as small beaches. Aerials from 2009 show significant bare mud areas, mainly in the lower marsh, that are not visible on the 2005 aerial and presumably caused by Spartina dieback. There is a small area of reed with some sallow to the west of Round Island, uncnged since 2002, that is possibly caused by pollution (sewage outfall?). There are small areas of upper saltmarsh as well as strandline communities (with 1 clump of Sueda) and small areas of low dunes. There is a mown track on the upper saltmarsh around Round	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	047	1005322	117.1077	21.76	14/02/2018	Unfavourable - Declining

Island. The 1984 survey also indicated that the marsh was far from being Spartina dominated although probably Spartina occurrence has declined since then. The 1 clump of Sueda was also noted in 1984!Intertidal Sediment Feature: A comparison of 2002 and 2009 data found the biomass of `small worms? to have reduced and the overall biomass of invertebrates had decreased, including a reduction in the number of Corophium (an important prey item for avocet). This change could be due to slightly different seasonal difference in sampling or a result of natural variation. The AZTI Marine Biotic Index for the invertebrate community also indicated the site to be a `heavily disturbed site?. Further investigation is required.	
The condition of the unit 47 at Ower and Fitzworth is based on an assessment of the water environment, the saltmarsh and mudflat habitats, and wintering birds. The unit was assessed being in unfavourable condition in 2010 and number of factors indicate that this is still the case. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is reducing. Erosion of saltmarsh is also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER

wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae at Ower/Fitzworth equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015). A number of environmental factors apart from nitrogen (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In most years macroalgae has a presence in this part of the Harbour at less than WFD Good class and algal mats were widespread on mudflats in Ower Bay and at Fitzworth in 2016 (aerial photos 20/08/2016) and 2017. Research in Poole Harbour on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. Specific information regarding saltmarsh on this unit is included in the separate saltmarsh comment. There have been substantial changes in marsh extent, extent being assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground-truthed on selected units. Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984) following a previous rapid saltmarsh expansion at the beginning of the twentieth century when a new hybrid of Spartina colonised what before was largely mudflat. Three	POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,		

distinct situations have been recognised (Tubbs 1984, Gray and Pearson 1984); first erosion at the marsh edges, assigned to effects of wave attack; second, die-back in and around pans within the interior of the sward edge, probably due to a combination of soil and physiographic factors within mature marshes causing waterlogging, onset of anaerobic conditions and ultimate death of plants; third, formation of new of marsh channels, channel widening and coalescence producing increasingly fragmented islets separated by a reticulated pattern of mud. All three phenomena can still be observed to varying degrees around the Harbour marshes today. Is this continuing saltmarsh decline a result of natural dynamic changes, with the Harbour merely returning to a natural pre Spartina invasion state, or is it a reflection of adverse factors affecting these marshes? A number of considerations indicate that adverse unnatural factors are important. First, the Harbour does not appear to be returning to a pre-Spartina state as, for example, there is evidence that Spartina originally replaced Zostera and Ruppia communities at Keysworth and records indicate that. Zostera was once widespread. In Langstone Harbour there is evidence of dynamic interactions between Zostera and Spartina communities but in Poole Harbour, Zostera is not recolonising (nitrogen levels are likely to be too high in most of the Harbour). Second, damaging direct effects of algae on saltmarsh plants are apparent with algal mats dislodged from mudflat deposited on saltmarsh by high tides smothering saltmarsh vegetation. Covering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. Although

marsh decline begun before the widely observed increase in algal growth that does not mean it is not now an important factor. Third, the marshes now being affected are often not Spartina monocultures but have a range of other saltmarsh plants. Fourth, the initial Spartina invasion has resulted in accretion of marshes. Earlier losses were largely of the outer marsh, now the inner marshes closer to the shorelines are being affected. As a result of accretion, these are at a higher elevation, an elevation where saltmarsh rather than mudflat would be expected. Fifth, there appears to be some relationship between the extent of saltmarsh loss and water quality/algal extent with the worst affected areas for both being in the south-east part of the Harbour and in Holes Bay. Finally, high levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, affecting the strength of the mud at least partly because of diminished root biomass. It would be surprising if Poole Harbour were immune to such effects. Sea level rise and increased storminess may also be a factor. For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the

1960s. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.ReferencesHubbard J C E 1965 Spartina marshes in southern England VI. Pattern of invasion in Poole Harbour. Journal of Ecology 53, 799-813.Tubbs, C (1984) Spartina on the South Coast an introduction. In Spartina anglica in Great Britain edited by Pat Doody, NCC 1984.Gray, A J and Pearson J M (1984). Spartina marshes in Poole Harbour, Dorset. In Spartina anglica in Great Britain, edited by Pat Doody, NCC 1984	

DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	048	1007079	0.542	0.00	22/10/2010	Favourable
DWARF SHRUB HEATH - Lowland	ANDREW NICHOLSON	049	1005344	8.0085	0.00	26/11/2010	Unfavourable - Recovering

The unit comprises a small part of the valley floor of a small stream running north to Poole Harbour. Although part of Poole H SSSI it is separated from the rest of the site by a small causeway whilst it is continuous with parts of Rempstone Heaths SSSI. Both in terms of management and because it is mostly influenced by fresh rather than brackish water, it is more closely allied to the heaths rather than the Harbour. Vegetation is tussocky with rank Molinia - to some extent this is natural in this location - but because it is in the wettest part of the mire it is unlikely that even if included within a larger grazing unit there would be a significant change to the tussocky nature of the sward notwthstanding the fact that grazing of the wider area would be beneficial and is required for favourable condition of adjacent units.	
The island supports mixed (planted) woodland and dry heathland, but there is significant invasion by Rhododendron ponticum extending onto the low cliffs. At present the heathland areas occupies only 15-20% of the unit in the west of the island, and these areas have frequent Birch and Pine saplings which need removing. Some areas are mown and these have an abundance of Agrostis curtisii. The most mature woodland is in the NE of the Island and it supports a small population of Red Squirrel.A conservation management plan is being drawn up by the present owner.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	050	1005323	43.0032	0.00	26/11/2010	Favourable
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	051	1005324	9.2132	0.00	22/10/2010	Unfavourable - No change
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	052	1005325	37.1617	3.79	09/02/2018	Unfavourable - Declining

The salt-marsh is quite varied, especially low-mid zone although some communities are confined to small linear stands. Since the 2001 survey there has been very minor erosion of the outer edge of the salt-marsh and some small-scale patchy die back of Spartina with the lower marsh, and these areas are becoming colonised by Salicornia europaea. The populations of the Nationally Scarce Sarcocornia perennis are still present.	
The issues mentioned in the previous assessment still apply although there has been some positive management since the previous assessment. Neverthless, trees still occupy >80% of the unit area. Some of the trees along the southern edge have heather beneath, but further in they are more dense with Holly forming a dark understorey in places. There is some scope to remove trees along the southern edge without affecting the screening. Rhododendron is still present under the pines and occupies >1% of the unit area. Heath is mostly pioneer-type due to recent clearance work. The areas cleared are largely returning to grass heath or U3 Agrostis curtisii grassland. As the open areas are maintained by mowing this is likely to continue.	LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,LACK OF CORRECTIVE WORKS - INAPPROPRIATE WEED CONTROL,
This comment covers the two adjacent intertidal and saltmarsh units of Newton Bay (52) and Goathorn (62). The condition of the Newton Bay units is based on an assessment of the water environment, the saltmarsh and mudflat habitats, and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION -

reducing. Erosion of saltmarsh is also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Newton Bay equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015). A number of environmental factors apart from nitrogen (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In most years macroalgae has a presence in this part of the Harbour at less than WFD Good class and a sheet forming Ulva spp dominant in Newton Bay forms dense mats. These algal mats were widespread on mudflats in Newton Bay in 2016 (aerial photos 20/08/2016) and 2017. Research in Poole Harbour (including Newton Bay) on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. Additional information regarding saltmarsh on this unit is included in the specific saltmarsh comment. There	AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

have been substantial changes in marsh extent, extent being assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground-truthed on selected units. Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984) following a previous rapid saltmarsh expansion at the beginning of the twentieth century when a new hybrid of Spartina colonised what before was largely mudflat. Three distinct situations have been recognised (Tubbs 1984, Gray and Pearson 1984); first erosion at the marsh edges, assigned to effects of wave attack; second, die-back in and around pans within the interior of the sward edge, probably due to a combination of soil and physiographic factors within mature marshes causing waterlogging, onset of anaerobic conditions and ultimate death of plants; third, formation of new of marsh channels, channel widening and coalescence producing increasingly fragmented islets separated by a reticulated pattern of mud. All three phenomena can still be observed to varying degrees around the Harbour marshes today. Is this continuing saltmarsh decline a result of natural dynamic changes, with the Harbour merely returning to a natural pre Spartina invasion state, or is it a reflection of adverse factors affecting these marshes? A number of considerations indicate that adverse unnatural factors are important. First, the Harbour does not appear to be returning to a pre-Spartina state as, for example, there is evidence that Spartina originally replaced Zostera and Ruppia communities at

Keysworth and records indicate that. Zostera was once widespread. In Langstone Harbour there is evidence of dynamic interactions between Zostera and Spartina communities but in Poole Harbour, Zostera is not recolonising (nitrogen is likely to be too high in most of the Harbour). Second, damaging direct effects of algae on saltmarsh plants are apparent with algal mats dislodged from mudflat deposited on saltmarsh by high tides smothering saltmarsh vegetation. Covering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. Although marsh decline begun before the widely observed increase in algal growth that does not mean it is not now an important factor. Third the marshes now being affected are often not Spartina monocultures but have a range of other saltmarsh plants. Fourth, the initial Spartina invasion has resulted in accretion of marshes. Earlier losses were largely of the outer marsh, now the inner marshes closer to the shorelines are being affected. As a result of accretion, these are at a higher elevation, an elevation where saltmarsh rather than mudflat would be expected. Fifth, there appears to be some relationship between the extent of saltmarsh loss and water quality/algal extent with the worst affected areas for both being in the south-east part of the Harbour and in Holes Bay. Finally, high levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, affecting the strength of the mud at least partly because of diminished root biomass. It would be surprising if Poole Harbour were immune to such effects. Sea level rise and increased storminess may also be a factor. For the Harbour as a whole, numbers of all wintering bird species are above the

indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86-1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. There are gaps in data collected in Newton Bay but a complete data set between 2012/13 – 2016/17 shows a decline in shelduck over this period in the Bay and in the sector off Goathorn. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.ReferencesHubbard J C E 1965 Spartina marshes in southern England VI. Pattern of invasion in Poole Harbour. Journal of Ecology 53, 799-813.Tubbs, C (1984) Spartina on the South Coast an introduction. In Spartina anglica in Great Britain edited by Pat Doody, NCC 1984.Gray, A J and Pearson J M (1984). Spartina marshes in Poole Harbour, Dorset. In Spartina anglica in Great Britain edited by Pat Doody, NCC 1984

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	053	1005326	103.6377	8.21	15/09/2017	Unfavourable - Declining

This comment covers the three intertidal and saltmarsh condition assessment units within Brands Bay (53, 63, 64). More specific information about each individual unit is included in separate comments on some of the specific interest features.The condition of Brands Bay units is based on an assessment of the water environment, the saltmarsh and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is reducing. Erosion of saltmarsh is also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Brands Bay equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015). Green algal mats were widespread on mudflats in Brands Bay in 2016 (aerial photo 20/08/2016) and 2017. A number of environmental factors apart from nitrogen (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In most years macroalgae has a presence in this part of the Harbour at less than WFD Good	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

class and the tubular or filamentous fronds of the algal species (Ulva compressa and intestinalis) dominant in Brands Bay form dense impenetrable mats. Research in Poole Harbour (including Brands Bay) on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus.Additional information regarding saltmarsh on this unit is included in the specific saltmarsh comment. Extent has been assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground truthed on selected units. Substantial loss of saltmarsh vegetation has occurred within the most of the Brands Bay saltmarshes However, the timing and pattern of loss is very different from that within the Holes Bay units assessed earlier this year. In Brands Bay, most of the changes seem to have occurred between 1972 and 1997 with the situation relatively stable subsequently. Substantial losses occurred at this time with retreats of the outer edge of marshes of up to 500m and losses of over 10ha. These changes contribute to unfavourable condition and a number of factors are undoubtedly involved. Algal mats dislodged from mudflat are deposited on saltmarsh by high tides, smothering saltmarsh vegetation. Smothering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. High levels of

nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, both because of effects on root growth (root biomass being smaller) and the stability of the mud itself. Sea level rise may also be a factor. Spartina dieback has been noted before at the back of marshes where anaerobic conditions cause the death of rhizomes due to lack of oxygen (Gray et al 1991 quoted in Corkhill and Edwards 'Poole Harbour Saltmarsh Monitoring 2006'), but in Brands Bay the main effect has been on the lower saltmarsh.For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Brands Bay itself is incomplete so does not allow a robust assessment of local changes but indicates that that numbers may have held up better in Brands Bay than in the Harbour as a whole. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	054	1005327	42.7105	0.48	10/12/2009	Favourable

Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	
Saltmarsh: There is ongoing erosion of the small Spartina `islands?, otherwise few changes and it is still one of the most varied areas of salt-marsh in the harbour, including transitional vegetation where there are freshwater inputs into the back of the salt-marsh. Some deposition of algal mats onto pioneer marsh.Intertidal sediment feature: The overall biomass of invertebrates has decreased comparing 2002 and 2009 data. This change could be due to slightly different seasonal difference in sampling or a result of natural variation. The AZTI Marine Biotic Index for the invertebrate community also indicated to the site to be a `heavily disturbed site?. Further investigation is requiredEstuarine feature: There was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	ANDREW NICHOLSON	055	1005345	118.3956	113.75	26/03/2010	Unfavourable - Recovering
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	056	1005328	43.1202	43.11	22/10/2010	Unfavourable - Recovering

The unit remains unfavourable for the reasons specified in the previous assessment. The recovering assessment is based on the fact that an HLS agreement has been concluded that enables a full management programme to be put into operation addressing all the issues previously identified including removal of sea defences that are affecting natural coastal processes, increasing the rate of rhododendron removal, establishing more open heathland in key locations and improving the structure of woodland. It also includes deer management. Although a felling licence is required to implement some of this work in this instance it is considered unlikely that there would be any impediments to obtaining the necessary authorisation.	
The unit comprises predominanty mixed self sown woodland supporting red squirrel with the interest feature being the squirrel population and the a heathland interest in rides, glades, cliffs and as a ground flora in more open woodland. Since the last assessment management has continued to control rhododendron and the prognosis for its eradication is now good with management supported through an HLS agreement. In a number of the woodland areas trees are at quite high density and the ground flora is mainly bracken dominated. Management under HLS will thin these areas to encourage both a more diverse ground flora and tree regeneration with a more open woodland the eventual aim. Surveys indicate that the population of squirrels is stable.	

FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	057	1005329	33.5037	33.44	16/11/2010	Favourable
FEN, MARSH AND SWAMP - Lowland	ANDREW NICHOLSON	058	1005330	29.7029	5.16	16/11/2010	Unfavourable - Recovering

Saltmarsh FeatureVery little change here since the last survey. The Lagoon still supports the most extensive stands of annual Salicornia salt-marsh (SM8) in the harbour. There are stands of Juncus maritimus marsh around the western edge which grade into reedbed. At Jerry?s Point sand and gravel is accreting and has cut off one areas of salt marsh and the sand is being colonised by interesting communities. Little change in the small area of mid-upper marsh here.Intertidal sediment featureThe lagoon attributes measured by Herbert et al (2010) indicate that Brownsea lagoon compares favourably with other UK lagoons and should be considered to be in favourable condition. However predicted sea level rise means that this lagoonal feature is likely to be lost over the coming decades as sea level rise threatens the artificial wall that protects this man-made lagoon at this location, close to the mouth of the Harbour. Monitoring of salinity and water depths have been set out in the Management Plan for Brownsea and a check should be made periodically that these are being adhered to.	
Saltmarsh featureAt Seymour?s Marsh enclosures have been erected to protect the beach and stands vegetation from deer grazing. The stand of the Nationally Scarce Suaeda vera (SM25) is recovering. On the beach embryo dunes are forming and there is the largest Dorset population of the RDB-Vulnerable Salsola kali. There is heavy deer pressure, but no signs of excessive poaching. Estuarine FeatureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009	

LITTORAL SEDIMENT	ANDREW NICHOLSON	059	1030589	37.2477	0.00	02/11/2017	Unfavourable - Declining

This comment covers all the intertidal and saltmarsh condition assessment units within Holes Bay. More specific information about individual units is included in separate comments on some of the specific interest features. Unlike other units in Holes Bay, unit 59 does not include any saltmarsh.The condition of Holes Bay units is based on an assessment of the water environment, the saltmarsh, reedbed and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology and monitoring shows no evidence that the problem is reducing. Both erosion of saltmarsh and spread of reed at the expense of saltmarsh are also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Holes Bay south of the railway line (units 7, 10, 11, 12) equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015) and to WFD Poor class north of the railway (units 8, 59; the most affected part of the Harbour in this respect). Green algal mats were also widespread on mudflats in Holes Bay in 2016 (aerial photo 20/08/2016) and 2017.	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

Whilst other environmental factors can limit the occurrence and abundance of macroalgae during the year and from year to year, in most years macroalgae has a presence in this part of the Harbour at less than WFD Good class, a presence that is likely to cause adverse biological effects on the ecology and that is corroborated by site research on mudflat invertebrates and wintering birds. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Although the nitrogen load from Poole STW into the back of Holes Bay has markedly reduced with nitrogen removal treatment, this source is still considerable in relation to the geographical context of the Bay. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Holes Bay itself is incomplete so does not allow a robust assessment of local changes but there is nothing to indicate that Holes Bay is in any way an exception to the overall decline in the Harbour. Studies elsewhere suggest

LITTORAL SEDIMENT	ANDREW NICHOLSON	060	1030590	18.8766	1.20	16/11/2010	Unfavourable - Recovering

shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	
Estuarine FeatureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009. Intertidal Sediment Feature Coastal defences at the back of beach make this site unfavourable but defences will be removed by the National Trust in 2011. The AZTI Marine Biotic Index for the invertebrate community taken here indicated to the site to be a `heavily disturbed site?. Further investigation is required	

LITTORAL ROCK	ANDREW NICHOLSON	061	1030591	36.3556	0.00	16/11/2010	Favourable
LITTORAL ROCK	ANDREW NICHOLSON	062	1030592	20.5632	0.00	09/02/2018	Unfavourable - Declining

Saltmarsh featureVery little changes in the area of salt-marsh since previous survey, apart from very minor natural erosion of the seaward edges of the narrow strips on the eastern and southern shores. The main area in the NE of the Island has one of the most extensive stands of SM13c in the harbour with abundant Limonium vulgare. The nationally scarce Salicornia pusilla and Sarcocornia perennis are both present. On the sandy edges there are extensive linear stands of Suaeda vera forming the best examples of SM25 in Poole Harbour. Sand is accreting in places and is slowly replacing the salt-marsh. Continuing erosion of saltmarsh edges and possibly a slight reduction in upper beach level recorded comparing Lidar data in 1998 and 2006. Estuarine featureThere was no significant algal mat cover recorded using aeriel photography in 2005 on the intertidal sediment here and therefore no samples were taken by the EA in 2008 and 2009.Intertidal sediment featuresThe site was characterised by a species poor assemblage consisting of the catworm (Nephtys) and high densities of oligochaete spp eg Tubificoides spp in 2009. The presence of algal mats were recorded over these areas during the winter invertebrate surveys. The AZTI Marine Biotic Index for the invertebrate community also indicated to the site to be a `heavily disturbed site?.Further investigation is required.	
This comment covers the two adjacent intertidal and saltmarsh units of Newton Bay (52) and Goathorn (62). The condition of the Newton Bay units is based on an assessment of the water environment, the saltmarsh and mudflat habitats, and wintering birds. A number of factors indicate an unfavourable condition for the designated	AIR POLLUTION - AIR POLLUTION,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER

features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is reducing. Erosion of saltmarsh is also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Newton Bay equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015). A number of environmental factors apart from nitrogen (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In most years macroalgae has a presence in this part of the Harbour at less than WFD Good class and a sheet forming Ulva spp dominant in Newton Bay forms dense mats. These algal mats were widespread on mudflats in Newton Bay in 2016 (aerial photos 20/08/2016) and 2017. Research in Poole Harbour (including Newton Bay) on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and	POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

achieve a substantial decline in the nitrogen load and possibly also phosphorus.Additional information regarding saltmarsh on this unit is included in the specific saltmarsh comment. There have been substantial changes in marsh extent, extent being assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground-truthed on selected units. Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984) following a previous rapid saltmarsh expansion at the beginning of the twentieth century when a new hybrid of Spartina colonised what before was largely mudflat. Three distinct situations have been recognised (Tubbs 1984, Gray and Pearson 1984); first erosion at the marsh edges, assigned to effects of wave attack; second, die-back in and around pans within the interior of the sward edge, probably due to a combination of soil and physiographic factors within mature marshes causing waterlogging, onset of anaerobic conditions and ultimate death of plants; third, formation of new of marsh channels, channel widening and coalescence producing increasingly fragmented islets separated by a reticulated pattern of mud. All three phenomena can still be observed to varying degrees around the Harbour marshes today. Is this continuing saltmarsh decline a result of natural dynamic changes, with the Harbour merely returning to a natural pre Spartina invasion state, or is it a reflection of adverse factors affecting these marshes? A number of considerations indicate that adverse unnatural factors are

important. First, the Harbour does not appear to be returning to a pre-Spartina state as, for example, there is evidence that Spartina originally replaced Zostera and Ruppia communities at Keysworth and records indicate that. Zostera was once widespread. In Langstone Harbour there is evidence of dynamic interactions between Zostera and Spartina communities but in Poole Harbour, Zostera is not recolonising (nitrogen is likely to be too high in most of the Harbour). Second, damaging direct effects of algae on saltmarsh plants are apparent with algal mats dislodged from mudflat deposited on saltmarsh by high tides smothering saltmarsh vegetation. Covering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. Although marsh decline begun before the widely observed increase in algal growth that does not mean it is not now an important factor. Third the marshes now being affected are often not Spartina monocultures but have a range of other saltmarsh plants. Fourth, the initial Spartina invasion has resulted in accretion of marshes. Earlier losses were largely of the outer marsh, now the inner marshes closer to the shorelines are being affected. As a result of accretion, these are at a higher elevation, an elevation where saltmarsh rather than mudflat would be expected. Fifth, there appears to be some relationship between the extent of saltmarsh loss and water quality/algal extent with the worst affected areas for both being in the south-east part of the Harbour and in Holes Bay. Finally, high levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, affecting the strength of the mud at least partly because of diminished root biomass. It would be

surprising if Poole Harbour were immune to such effects. Sea level rise and increased storminess may also be a factor.For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86-1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. There are gaps in data collected in Newton Bay but a complete data set between 2012/13 – 2016/17 shows a decline in shelduck over this period in the Bay and in the sector off Goathorn. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.ReferencesHubbard J C E 1965 Spartina marshes in southern England VI. Pattern of invasion in Poole Harbour. Journal of Ecology 53, 799-813.Tubbs, C (1984) Spartina on the South Coast an introduction. In Spartina anglica in Great

LITTORAL ROCK	ANDREW NICHOLSON	063	1030593	37.1633	0.00	06/11/2017	Unfavourable - Declining

Britain edited by Pat Doody, NCC 1984.Gray, A J and Pearson J M (1984). Spartina marshes in Poole Harbour, Dorset. In Spartina anglica in Great Britain edited by Pat Doody, NCC 1984	
This comment covers the three intertidal and saltmarsh condition assessment units within Brands Bay (53, 63, 64). More specific information about each individual unit is included in separate comments on some of the specific interest features.The condition of Brands Bay units is based on an assessment of the water environment, the saltmarsh and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is reducing. Erosion of saltmarsh is also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The extent, density and biomass of macroalgae in Brands Bay equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015). Green algal mats were widespread on mudflats in Brands Bay in 2016 (aerial photo 20/08/2016) and 2017. A number of environmental factors apart	AIR POLLUTION - AIR POLLUTION,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

from nitrogen (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In most years macroalgae has a presence in this part of the Harbour at less than WFD Good class and the tubular or filamentous fronds of the algal species (Ulva compressa and intestinalis) dominant in Brands Bay form dense impenetrable mats. Research in Poole Harbour (including Brands Bay) on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus.Additional information regarding saltmarsh on this unit is included in the specific saltmarsh comment. Extent has been assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground truthed on selected units. Substantial loss of saltmarsh vegetation has occurred within the most of the Brands Bay saltmarshes. However, the timing and pattern of loss is very different from that within the Holes Bay units assessed earlier this year. In Brands Bay, most of the changes seem to have occurred between 1972 and 1997 with the situation relatively stable subsequently. Substantial losses occurred at this time with retreats of the outer edge of marshes of up to 500m and losses of over 10ha.These changes contribute to unfavourable condition and a number of factors are undoubtedly involved. Algal mats

dislodged from mudflat are deposited on saltmarsh by high tides, smothering saltmarsh vegetation. Smothering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. High levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, both because of effects on root growth (root biomass being smaller) and the stability of the mud itself. Sea level rise may also be a factor. Spartina dieback has been noted before at the back of marshes where anaerobic conditions cause the death of rhizomes due to lack of oxygen (Gray et al 1991 quoted in Corkhill and Edwards 'Poole Harbour Saltmarsh Monitoring 2006'), but in Brands Bay the main effect has been on the lower saltmarsh.For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Brands Bay itself is incomplete so does not allow a robust assessment of local changes but indicates that that numbers may have held up better in Brands Bay than in the Harbour as a whole. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat

LITTORAL SEDIMENT	ANDREW NICHOLSON	064	1030594	21.5855	0.46	15/09/2017	Unfavourable - Declining

cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	
This comment covers the three intertidal and saltmarsh condition assessment units within Brands Bay (53, 63, 64). More specific information about each individual unit is included in separate comments on some of the specific interest features.The condition of Brands Bay units is based on an assessment of the water environment, the saltmarsh and mudflat habitats and wintering birds. A number of factors indicate an unfavourable condition for the designated features. There are both water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology. Monitoring shows no evidence that the problem is reducing. Erosion of saltmarsh is also evident, and numbers of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. The	AIR POLLUTION - AIR POLLUTION,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

extent, density and biomass of macroalgae in Brands Bay equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015). Green algal mats were widespread on mudflats in Brands Bay in 2016 (aerial photo 20/08/2016) and 2017. A number of environmental factors apart from nitrogen (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae both during the year and from year to year. In most years macroalgae has a presence in this part of the Harbour at less than WFD Good class and the tubular or filamentous fronds of the algal species (Ulva compressa and intestinalis) dominant in Brands Bay form dense impenetrable mats. Research in Poole Harbour (including Brands Bay) on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus.Additional information regarding saltmarsh on this unit is included in the specific saltmarsh comment. Extent has been assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground truthed on selected units. Substantial loss of saltmarsh vegetation has occurred within the most of the Brands Bay saltmarshes. However, the timing and pattern of loss is very different from that within the Holes Bay units assessed earlier this year. In Brands Bay, most of the changes seem to have occurred between 1972 and 1997

with the situation relatively stable subsequently. Substantial losses occurred at this time with retreats of the outer edge of marshes of up to 500m and losses of over 10ha.These changes contribute to unfavourable condition and a number of factors are undoubtedly involved. Algal mats dislodged from mudflat are deposited on saltmarsh by high tides, smothering saltmarsh vegetation. Smothering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. High levels of nitrogen have been shown elsewhere to increase the susceptibility of saltmarsh to erosion, both because of effects on root growth (root biomass being smaller) and the stability of the mud itself. Sea level rise may also be a factor. Spartina dieback has been noted before at the back of marshes where anaerobic conditions cause the death of rhizomes due to lack of oxygen (Gray et al 1991 quoted in Corkhill and Edwards 'Poole Harbour Saltmarsh Monitoring 2006'), but in Brands Bay the main effect has been on the lower saltmarsh.For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Brands Bay itself is incomplete so

LITTORAL SEDIMENT	ANDREW NICHOLSON	065	1031056	1804.9042	0.10	18/10/2020	Unfavourable - Declining

does not allow a robust assessment of local changes but indicates that that numbers may have held up better in Brands Bay than in the Harbour as a whole. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.	
The overall condition of unit 65, the unit covering the entire sub-tidal area of Poole Harbour, is based on an evaluation of the condition of different ecological attributes of the estuary as well the overall health of the bird population and the condition of the nationally important bird species primarily dependent on this sub-tidal environment. UNFAVOURABLE FEATURES Estuary The overall context of this assessment is that the harbour shows a number of water quality and biological indicators of a eutrophication (nutrient enrichment) problem that is affecting the ecology of a number of features that are critical components of the estuary. These include the littoral sediment, saltmarsh and the benthic flora and fauna. The assessment of the estuary feature for this unit concentrates on the sub-tidal sub features of the estuary. In summary the weight of evidence indicates the estuary is in unfavourable declining condition because the trends causing the	AIR POLLUTION - AIR POLLUTION,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,

deterioration in condition are continuing (Kite et al in prep).Water Quality determinands and effects on harbour ecologyWinter dissolved available inorganic nitrogen (DAIN) concentrations are considerably elevated, exceeding the UK TAG good/moderate quality status boundary across the harbour as a whole, and particularly so toward the Wareham Channel away from the harbour entrance (Environment Agency, 2016). The overall nitrogen loading into the harbour, with some 2300 tonnes of inorganic nitrogen carried annually by inflowing rivers and discharged by harbour-side wastewater treatment works (WwTWs), equates to about 640 kg/ha/yr for the harbour area at High Water Spring Tides. This level of nitrogen loadings can result in profound ecological changes and is well above the level where typically seagrasses are eliminated and estuaries become dominated by macroalgae.Dense mats of opportunistic macroalgae now occur on mudflat and within saltmarsh but macroalgae are also found sub-tidally. In 2003 a survey found that large quantities of the green macroalgae Ulva rigida had colonised across much of the sub-tidal channel system within the harbour, having previously, in the early to mid-1980s, only been found in quantity in the channel in the south of the outer harbour (Dyrynda, 2005). Despite the high DAIN concentrations phytoplankton abundance has been assessed at WFD Good status harbour-wide. Nevertheless, Crossley (2019) found that the composition of the phytoplankton had fundamentally changed since the 1990s with diatom species characteristic of high nutrient conditions replacing those typical of lower nutrient conditions. This was one indication of a sharp decline in water quality; another was a decrease in

water clarity since c2000 a finding backed up by EA data showing an increase in turbidity since the early 2000s (Kite et al in prep). In the longer term Crossley's work showed that from the late 1800s until c1960s the ecological system remained largely stable. Then between 1960 and 1975 a break or tipping point occurred - the ecological system was no longer able to stabilise itself through natural feedback loops from cumulative pressures on the water environment. After this to the present day there was a steady, and then post c2000, a dramatic decline in water quality indicators.Evaluation of a wide range of different evidence (Kite et al in prep) indicates that to restore the ecological functioning of the harbour as a stable eelgrass/saltmarsh-dominant system with near-natural structure and function supporting the wide range of ecological features for which it was designated, the nutrient status would need to be within the levels that existed in the early 1960s to 1970. This period equates to a landward nutrient inorganic nitrogen load of about 1,000 t/yr or less and such a load would give some confidence in securing favourable condition for the designated sites. Also, to provide a balance of dual nitrogen and phosphorus limitation, further reduction is required in the landward orthophosphorus-P input. The modelling indicates that, within these requirements, specific nitrogen and phosphorus input limits are required in Holes Bay to control the abundance of macroalgae (c80 tonnes/yr inorganic nitrogen and <2 tonnes/yr ortho-P). EelgrassA recent review of literature highlighted that in the early 20th century the intertidal mudflats and harbour bottom were covered to a considerable extent by eelgrass (Zostera species) (Bull, 1953; Haigh, 1975). Eelgrass was reported to remain in

the north–east of the harbour in the early 1950s (Bull, 1953). This description corresponds with the main distribution of sub-tidal eelgrass habitat to the present day. This locality typically experiences the lowest mean concentrations of inorganic nitrogen and orthophosphate recorded within the harbour, probably due to tidal flushing from Poole Bay and in extent – some 20ha - the bed appears relatively stable. Despite this, a survey of the beds showed signs of moderate ephipyte loads and wasting disease coverage and the recent literature review indicated that this can be a result of high nutrient pressures (Natural England, 2018; Green et al, 2020). Modelling has shown that there are suitable habitats for subtidal eelgrass Zostera marina restoration across the whole of Poole Harbour (Green et al, 2020). However, the nitrogen loading and concentrations in the wider harbour are well above the level where submerged aquatic vegetation such as Zostera species is typically lost from estuaries (Latimer & Rego, 2010; Benson et al, 2013).Unfavourable bird features (all declining)>20000 non-breeding waterbirdsThe feature is unfavourable for it is not meeting SPA conservation objectives in a number of respects (Kite et al in prep) namely; declines in a number of different species not explained by national trends; changes in the composition of the wintering population; species declines resulting in several species no longer meeting thresholds for international and national importance; declines in some of the more common species. A number of these changes have been linked to eutrophication effects (Kite et al in prep). Aggregations of non-breeding birds - Red-breasted merganserMergansers have suffered a 46% decline since the late 1980s and the latest 5 year

mean peak (207) is well below the indicative level for favourable condition (302). There are further indications from comparison of trends in Poole Harbour with national and regional ones that site specific factors are at least partly responsible for this decline. Numbers in Poole Harbour have been declining since the early 2000s after peaking in the late 1990s. Although the national trend has also been a decline the Poole Harbour one has been more severe; in the reference period in the late 1980s Poole harbour averaged 9.7% of the GB population. In the last 5 years this average was 7.2%. Since the two most populous merganser sites in the SW are close together (Poole Harbour and the Fleet and Wey) evaluation of trends against regional ones is more instructive than for other species (where the Severn estuary dominates regional numbers). Here Poole Harbour's contribution to regional numbers has fallen from an average of 78.7% in the late 1980s to 52.9% in the last 5 years. Poole is one of several sites along this stretch of the Channel coast between Pagham Harbour and Chesil and the Fleet (including the Isle of Wight; Chichester, Langstone and Portsmouth Harbours, Poole Harbour and the Fleet/Wey are the most important sites) which together hold over 900 birds, about a third of the GB wintering population. Taken together the population is over the threshold for international importance (860). However, the other sites in this cluster have not suffered declines to the same extent as Poole; numbers at Chichester and Langstone have been stable since the late 1980s although there has been a decline in the last 2 years.These observations indicate that mergansers in Poole Harbour are faring significantly worse than in nearby sites, both to the

east and west. In turn this strongly suggests that adverse factors specific to Poole Harbour are involved. Aggregations of non-breeding birds - GoldeneyeGoldeneye have suffered a 43% decline since the late 1980s and the latest 5 year mean peak (79) is below the indicative level for favourable condition (109). Wintering goldeneye populations in the harbour have suffered a sharp decline since peaks in the late 1990s. The increases before then and this subsequent decline are broadly similar to national trends but the Poole Harbour decline is greater. The harbour contribution to the national population has declined from an average of 1.1% in the reference late 1980s period to 0.96% in the last 5 years. This however is not an entirely representative comparison because in the late 1980s the harbour population was at relative low point; in the early 1980s the proportion was about 2%. Going further back although WeBs counts from the late 1960s (the earliest) give a 5yr mean of 68 (similar to today) but there is a report of a maximum estimate of 500 in 1963 (Birds of Poole Harbour https://www.birdsofpooleharbour.co.uk/birds/?letter=G) suggesting numbers may once have been much higher. Poole Harbour is the most important site for goldeneye in the area. It contributes up to 70 or 80% of the regional population. The Solent sites to the east support only low numbers so, unlike with mergansers, there are no nearby sites that give a good comparison. Nevertheless these observations indicate that there are site specific issues affecting wintering goldeneye in Poole Harbour.
 FAVOURABLE FEATURESAggregations of breeding birds – Sandwich tern. Numbers have been stable or increasing.Aggregations of breeding birds –

common tern. Numbers have been stable.Aggregations of non-breeding birds – Brent goose. Numbers have increase by some 142% since the late 1980s an increase greater than the national trend (also increasing). Aggregations of non-breeding birds – teal. Numbers have increased greatly; there are now over 3x as many wintering teal as there were in the late 1980s an increase greater than the national trend (also increasing). Aggregations of non-breeding birds – pintail. In the long term, numbers are broadly following national trends. Following an increase beginning in the early 1990s numbers peaked in the early 2000s before declining back to about the level they were in the late 1980s. The proportion of the national population has tended to increase a little. Aggregations of non-breeding birds – cormorant. Numbers have increased by 74% since the late 1980s. ReferencesBenson, J.L., Schlezinger,D., Brian L. and Howes, B.L. 2013. Relationship between nitrogen concentration, light, and Zostera marina habitat quality and survival in southeastern Massachusetts estuaries. J. Environ. Manage. 131, 129-137. http://dx.doi.org/10.1016/j.jenvman.2013.09.033Bull, A.J. 1953. The wildfowl and waders of Poole Harbour. Proceedings - Dorset Natural History and Archaeological Society 74-76, Crossley, Laura Helen (2019) Palaeoenvironmental reconstruction of Poole Harbour water quality and the implications for estuary management. University of Southampton, Doctoral Thesis, 331pp Dyrynda, P. 2005. Sub-tidal ecology of Poole Harbour – an overview. In The Ecology of Poole Harbour Humphreys, J. and May, V. (ed) Proceedings in Marine Science No. 7. Elsevier, Oxford, pp109-130.Green, B., Best, M. and McGruer, K. 2020.

LITTORAL SEDIMENT	ANDREW NICHOLSON	066	1031057	32.7797	0.00	30/05/2018	Favourable

Poole Harbour ELMS Pilot Information Pack. Unpublished report by Environment Agency, 5pp.Haigh, M.J. 1976. A biogeographical reconnaissance of the coastal marshlands of Poole Harbour, Dorset (1975). Keele University Library Occasional Publication No.13. 47ppKite, D, Nicholson, A M, Burton, S and Wake H. (in prep). An evidence base informing nutrient targets and actions to meet the conservation objectives of Poole Harbour. Natural England Evidence report. Latimer, J. S. and Rego, S. A. 2010. Empirical relationship between eelgrass extent and predicted watershed-derived nitrogen loading for shallow New England estuaries. Estuarine, Coastal and Shelf Science 90, 231-240.Natural England 2018. Poole Harbour SPA Seagrass Assessment 2015. Report by Envision Mapping Ltd 47pp. http://publications.naturalengland.org.uk/publication/6074111931711488		
The largest part of unit 66 consists of land that has been added to the SSSI as an extension in 2018. In addition the old units 21 and 28 (now archived) have been incorporated into this new large unit. Since summer 2013, much of the unit has become subject to tidal inundation and become increasingly saline, following natural deterioration and breaching of the sea wall and failure of other tidal defences (there are no plans for repair). The change has coincided with the increased use of the area by foraging and roosting birds that are part of the waterbird populations for which the SSSI is notified. The use of this area by birds may change as intertidal foraging habitats and saltmarsh continue to develop, and therefore the precise nature of its contribution to supporting the bird populations of the Harbour is also likely change.		

Intertidal areas are present within the additional land but because tidal inundation has only recently begun, intertidal habitats have not yet developed to the extent that they are similar to those in the rest of the Harbour. Similarly with saltmarsh, some saline species are present (eg Juncus gerardi, Salicornia spp, and Spergularia spp.) but saltmarsh communities with a full suite of species are not yet represented. There are small areas of brackish grazing marsh, reedbed and marsh, supporting plant communities that are part of the mosaic of wetland habitats for which the SSSI is notified. The general objective is to allow this mosaic of habitats to develop under the influence of natural processes, rather than trying to achieve a particular target habitat, for these processes are producing a mix of developing habitats that are beneficial for conservation. In these circumstances the unit is considered to be in a favourable condition. The small north eastern part of the unit (formerly part of unit 21 – Slough Lane) comprises. an enclosed area of wet grassland and fen (with affinities to NVC types MG11 and M23) which grades into degenerate wet woodland and heathland. Historically, this area has been undergrazed and succession to tall reed swamp and woodland has taken place. However, since the last assessment in 2010 regular grazing has taken place and this process has been halted. The field that comprises former unit 28 (known locally as 'The Pool') is not subject to full tidal inundation from Lytchett Bay but there is nevertheless a strong saline influence. The low-lying southern part lies wet and there is Puccinellia-dominated marsh with bare areas and small pools; there is very little Spartina anglica and the sward is well grazed. These conditions mean that the area

LITTORAL SEDIMENT	ANDREW NICHOLSON	067	1031061	66.4052	0.00	25/05/2018	Unfavourable - Declining

attracts waders particularly at high tide and although, because of its size, there are not usually large numbers some of the rarer waders are often found. The whole field has now been included within the SSSI as a grazing compartment Details concerning bird numbers are given in comments about each feature. The unit clearly provides different conditions to the majority of the rest of the Harbour and is important for a number of species particularly black tailed godwit, shelduck, dunlin, redshank, teal, greenshank and spoonbill. Peak counts since 2013 indicate the importance of the area for these species, although these are not directly comparable to WeBS data as the area is counted more frequently. The same counts also suggest that bird numbers are increasing.	
Unit 67 in the western part of Holes Bay comprises the former units 11 and 12 (now archived) together with two small recently notified extensions. Much of this comment applies to all the intertidal and saltmarsh condition assessment units within Holes Bay with some more specific information about individual units included in separate comments on specific interest features.The condition of Holes Bay units is based on an assessment of the water environment, the saltmarsh, reedbed and mudflat habitats, and wintering birds. A number of factors indicate an unfavourable condition for the designated features, as was case for the previous assessments of units 11 and 12 in 2017. There are both water quality and biological indicators of eutrophication (nutrient enrichment), a problem that is having a profound effect on the ecology of the Harbour. Monitoring shows no evidence that the problem is reducing. Erosion of saltmarsh is also evident, and numbers	AIR POLLUTION - AIR POLLUTION,FRESHWATER POLLUTION - WATER POLLUTION - AGRICULTURE/RUN OFF,FRESHWATER POLLUTION - WATER POLLUTION - DISCHARGE,MARINE POLLUTION - WATER POLLUTION - AGRICULTURAL SOURCES,MARINE POLLUTION - WATER POLLUTION - INDUSTRIAL DISCHARGES,MARINE POLLUTION - WATER POLLUTION - OTHER DISCHARGES,MARINE POLLUTION - WATER

of wintering shelduck in the Harbour have declined significantly in recent years. Current measures to address these matters are not adequate to achieve favourable condition.Concentrations of dissolved inorganic nitrogen, measured in winter, are at less than WFD Good status across the Harbour as a whole. This elevated level of nitrogen enrichment has little effect on phytoplankton abundance in the Harbour (assessed at WFD Good status Harbour-wide) but encourages the growth of opportunistic macroalgae on mudflat and within saltmarsh. Whilst research elsewhere suggests that raised nitrogen is the nutrient primarily responsible for the prolific macroalgal growth, phosphorus is also likely to play a role. A number of environmental factors apart from nitrogen and phosphorus (eg temperature, exposure, salinity) can affect the occurrence, abundance and type of macroalgae (in Holes Bay Ulva rigida – Thornton 2016) both during the year and from year to year. The extent, density and biomass of macroalgae in Holes Bay south of the railway line (units 7, 10, 67) equates to WFD Moderate class based on four years data (2008, 2009, 2011 and 2015) and to WFD Poor class north of the railway (units 8, 59; the most affected part of the Harbour in this respect). Green algal mats were also widespread on mudflats in Holes Bay in 2016 (aerial photo 20/08/2016) and 2017. Research in Poole Harbour, including Holes Bay, on mudflat invertebrates and wintering birds indicates that macroalgae cause adverse biological effects. The nitrate-nitrogen load reaching the Harbour from its catchment is continuing to increase but more slowly in recent years. Although the nitrogen load from Poole STW into the back of Holes Bay has markedly reduced with nitrogen removal treatment, this source is still considerable	POLLUTION - URBAN AND/OR ROAD SOURCES,MARINE POLLUTION - WATER POLLUTION - WATER COMPANY DISCHARGES,	

in relation to the geographical context of the Bay. Further measures are required to tackle these issues and achieve a substantial decline in the nitrogen load and possibly also phosphorus. Specific information regarding saltmarsh on this unit is included in the separate saltmarsh comment. There have been substantial changes in marsh extent, extent being assessed using both a direct comparison of aerial photos (details in specific saltmarsh comment) and an EA saltmarsh geomatic data comparison (2011 and 2014) itself derived from aerial photos. Interpretation of aerial photos has been ground-truthed on selected units. Widespread losses of saltmarsh in Poole Harbour have been happening for many years (Hubbard 1965, Gray and Pearson 1984) following a previous rapid saltmarsh expansion at the beginning of the twentieth century when a new hybrid of Spartina colonised what before was largely mudflat. Three distinct situations have been recognised (Tubbs 1984, Gray and Pearson 1984); first erosion at the marsh edges, assigned to effects of wave attack; second, die-back in and around pans within the interior of the sward edge, probably due to a combination of soil and physiographic factors within mature marshes causing waterlogging, onset of anaerobic conditions and ultimate death of plants; third, formation of new of marsh channels, channel widening and coalescence producing increasingly fragmented islets separated by a reticulated pattern of mud. All three phenomena can still be observed to varying degrees around the Harbour marshes today. Is this continuing saltmarsh decline a result of natural dynamic changes, with the Harbour merely returning to a natural pre Spartina invasion state, or is it a reflection of adverse factors affecting

these marshes? A number of considerations indicate that adverse unnatural factors are important. First, the Harbour does not appear to be returning to a pre-Spartina state as, for example, there is evidence that Spartina originally replaced Zostera and Ruppia communities at Keysworth and records indicate that. Zostera was once widespread. In Langstone Harbour there is evidence of dynamic interactions between Zostera and Spartina communities but in Poole Harbour, Zostera is not recolonising (nitrogen levels are likely to be too high in most of the Harbour). Second, damaging direct effects of algae on saltmarsh plants are apparent with substantial areas of algal mats dislodged from mudflat deposited on saltmarsh by high tides smothering saltmarsh vegetation. Covering of saltmarsh vegetation by dead algal mats at the edges of the marsh also appears locally to be a factor in their retreat. Although marsh decline begun before the widely observed increase in algal growth that does not mean it is not now an important factor. Third, the marshes now being affected are often not Spartina monocultures but have a range of other saltmarsh plants. Fourth, the initial Spartina invasion has resulted in accretion of marshes. Earlier losses were largely of the outer marsh, now the inner marshes closer to the shorelines are being affected. As a result of accretion, these are at a higher elevation, an elevation where saltmarsh rather than mudflat would be expected. Fifth, there appears to be some relationship between the extent of saltmarsh loss and water quality/algal extent with the worst affected areas for both being in the south-east part of the Harbour and in Holes Bay. Finally, high levels of nitrogen have been shown elsewhere to increase the susceptibility of

saltmarsh to erosion, affecting the strength of the mud at least partly because of diminished root biomass. It would be surprising if Poole Harbour were immune to such effects. Sea level rise and increased storminess may also be a factor. For the Harbour as a whole, numbers of all wintering bird species are above the indicative level for favourable condition, apart from shelduck. Numbers of shelduck have declined below this level (the lowest 5 year peak annual mean1985/86 -1989/90 inc) and short and medium term declines have also triggered WeBs alerts. A comparison of regional and national trends for this species indicates a steeper decline at this site and therefore it is likely site-specific pressures are at least contributing in part to this decline. Although shelduck numbers have increased a little since the last WeBs alert was done they are still lower than at almost any time since counting began in the 1960s. Data in Holes Bay itself is incomplete so does not allow a robust assessment of local changes but there is nothing to indicate that Holes Bay is in any way an exception to the overall decline in the Harbour. Studies elsewhere suggest shelduck declines may be linked to reduced food availability as a result of an increase in opportunist algal mat cover possibly leading to a physical inhibition of feeding activity (scything action) in the presence of dense mats of algae. For example shelduck avoided foraging in areas with dense algal mats (Tubbs, 1977). A study of bird disturbance in Poole Harbour in 2012 has also found shelduck to be vulnerable to disturbance with the probability of a major flight being higher in this species (together with curlew and oystercatcher) compared to other species.ReferencesHubbard J C E (1965) Spartina

marshes in southern England VI. Pattern of invasion in Poole Harbour. Journal of Ecology 53, 799-813.Gray, A J and Pearson J M (1984). Spartina marshes in Poole Harbour, Dorset. In Spartina anglica in Great Britain, edited by Pat Doody, NCC 1984Tubbs, C (1984) Spartina on the South Coast an introduction. In Spartina anglica in Great Britain edited by Pat Doody, NCC 1984.Thornton, A (2016). The impact of green macroalgal mats on benthic invertebrates and overwintering wading birds. PhD thesis, Bournemouth University.

ANNEX 22

Isle of Portland to Studland Cliffs SAC Citation and
Natura 2000 Standard Data Form

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Isle of Portland to Studland Cliffs
Unitary Authority/County:	Dorset
SAC status:	Designated on 1 April 2005
Grid reference:	SY840802
SAC EU code:	UK0019861
Area (ha):	1447.50
Component SSSI:	Isle of Portland SSSI, Nicodemus Heights SSSI, Purbeck Ridge (East) SSSI, South Dorset Coast SSSI, Studland Cliffs SSSI

Site description:

This site, with St Albans Head to Durlston Head SAC, forms a single unit of cliffed coastline some 40 km in length that combines internationally important geological interest with a rich range of wildlife habitats. At this site some cliffs are formed of hard Jurassic limestones and others of chalk, and these are interspersed with sections of soft cliff composed of sands and clays. Parts are unstable and subject to mudslides and landslips.

The cliffs support species-rich calcareous grassland with particularly large populations of several species that are scarce in the UK such as wild cabbage *Brassica oleracea* var. *oleracea*, early spider-orchid *Ophrys sphegodes* and Nottingham catchfly *Silene nutans*. The endemic sea lavender *Limonium recurvum* ssp *recurvum* is locally frequent. The Portland peninsula demonstrates clearly the contrast between an exposed western coast, with sheer rock faces and sparse maritime vegetation, and a more sheltered eastern side. On this sheltered coast and on the mainland cliffs east of White Nothe there are extensive slumped undercliffs and landslides with a mix of massive fallen boulders, grassland and scrub. The scrub contains a high proportion of wayfaring-tree *Viburnum latana*, while wood spurge *Euphorbia amygdaloides* occurs widely in the grassland. The open habitats that occur on sands and clays as a result of frequent landslips are an especially rich habitat for may localised invertebrate species. Calcareous boulders in this turf support important and restricted lichen and bryophyte assemblages.

Semi-natural dry grassland occurs in both inland and coastal situations on both chalk and limestone. The site contains extensive species-rich examples of tor-grass *Brachypodium pinnatum* grassland and smaller areas of sheep's-fescue – meadow oat-grass (*Festuca ovina – Helictotrichon pratense*) grassland occur on shallow soils on steeper slopes. It also supports important long-standing populations of early gentian *Gentianella anglica* numbering several thousands of plants.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Annual vegetation of drift lines
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (Dry grasslands and scrublands on chalk or limestone)
- Vegetated sea cliffs of the Atlantic and Baltic coasts

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Early gentian *Gentianella anglica*

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0019861
Date of registration: 14 June 2005

Signed: Trevor Salmon

On behalf of the Secretary of State for Environment, Food and Rural Affairs

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0019861**

SITENAME **Isle of Portland to Studland Cliffs**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0019861

1.3 Site name

Isle of Portland to Studland Cliffs

1.4 First Compilation date	1.5 Update date
1998-06	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	1998-06
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

2.1 Site-centre location [decimal degrees]:

Back to top

Longitude	Latitude
-2.2261	50.6206

2.2 Area [ha]:

1441.75

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1210			1.44	0	G	C	C	C	C
1220			1.44	0	G	D			
1230			576.7	0	M	A	B	A	A
6210			792.96	0	G	A	C	A	B

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive

92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
P	1654	Gentianella anglica			p	1001	10000	i		M	C	B	C	B
A	1166	Triturus cristatus			p				P	DD	D			

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N08	5.0
N09	55.0
N05	40.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: basic,sedimentary 2 Terrestrial: Geomorphology and landscape: coastal,lowland 3 Marine: Geology: limestone/chalk 4 Marine: Geomorphology: cliffs

4.2 Quality and importance

Annual vegetation of drift lines for which the area is considered to support a significant presence. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 100 hectares. Vegetated sea cliffs of the Atlantic and Baltic coasts for which this is considered to be one of the best areas in the United Kingdom. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) for which this is considered to be one of the best areas in the United Kingdom. Gentianella anglica for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
	Threats		

Positive Impacts			
	Activities,	Pollution	

Rank	and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	K02		I
H	A01		I
H	I01		B
H	G01		I
H	A04		I

Rank	management [code]	(optional) [code]	inside/outside [i|o|b]
H	A02		I
H	A03		I
H	A04		I
H	A06		I
H	B02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

7. MAP OF THE SITES

Back to top

INSPIRE ID:

Map delivered as PDF in electronic format (optional)

☐ Yes ☒ No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 23

European Site Conservation Objectives for Isle of Portland to Studland Cliffs SAC

European Site Conservation Objectives for Isle of Portland to Studland Cliffs Special Area of Conservation Site Code: UK0019861

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats and habitats of qualifying species**
- **The structure and function (including typical species) of qualifying natural habitats**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H1210. Annual vegetation of drift lines

H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone

S1654. *Gentianella anglica*; Early gentian

This is a European Marine Site

This site is a part of the Portland to Studland European Marine Site. These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

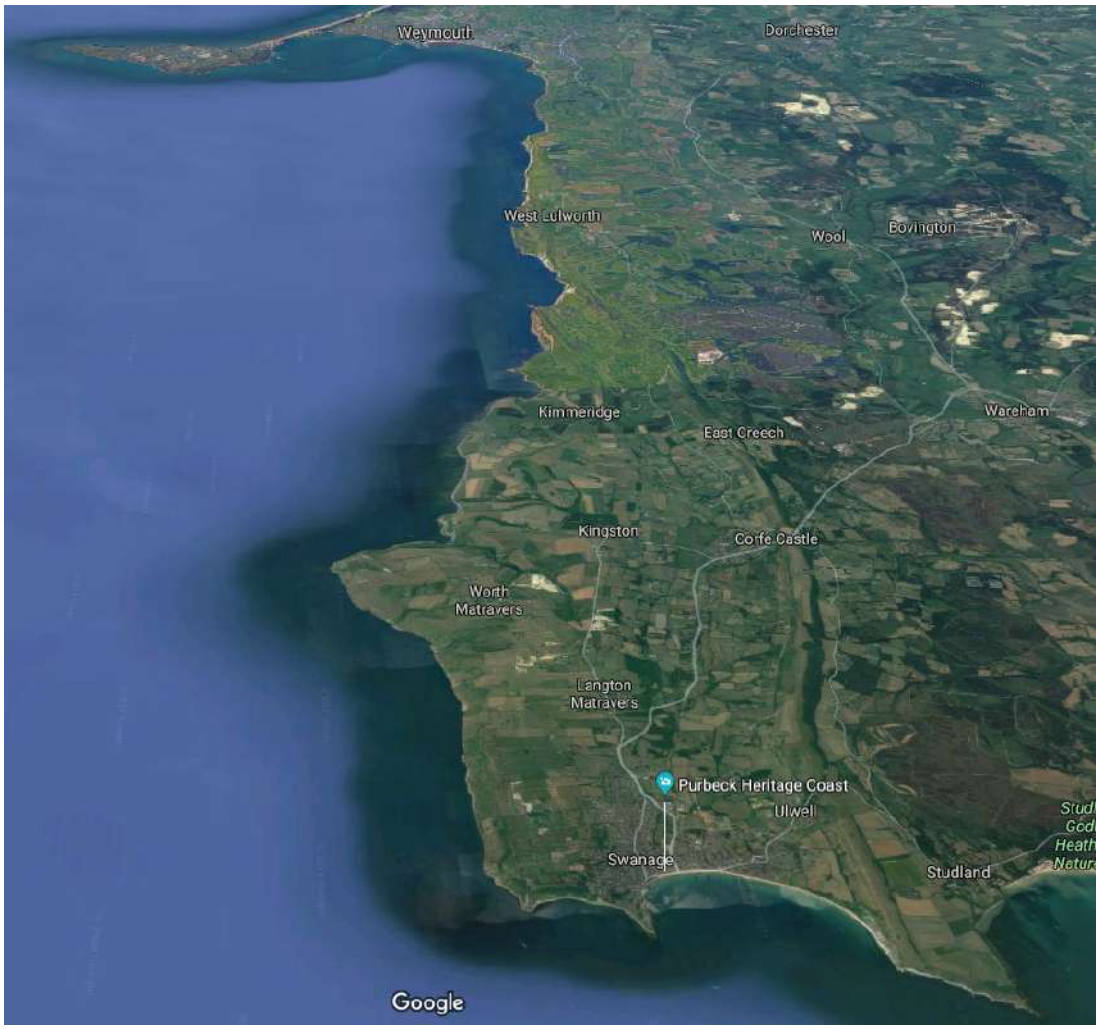
Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

ANNEX 24

European Site Conservation Objectives:
Supplementary Advice for Isle of Portland to
Studland Cliffs SAC

European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features

Isle of Portland to Studland Cliffs Special Area of Conservation (SAC) Site Code: UK0019861



Google Earth (2018)

Date of Publication: 23 January 2019

About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to the Isle of Portland to Studland Cliffs SAC. This advice should therefore be read together with the SAC Conservation Objectives which are available here.

Where this site overlaps with other European Site(s), you should also refer to the separate European Site Conservation Objectives and Supplementary Advice (where available) provided for those sites.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	Isle of Portland to Studland Cliffs Special Area of Conservation (SAC)
Location	Dorset
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	01 April 2005
Qualifying Features	See section below
Designation Area	1447.50
Designation Changes	Not applicable
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Isle of Portland SSSI, Nicodemus Heights SSSI, Purbeck Ridge (East) SSSI, South Dorset Coast SSSI, Studland Cliffs SSSI
Relationship with other European or International Site designations	The SAC St Albans Head to Durlston Head SAC lies between the two component parts of the Isle of Portland to Studland Cliffs SAC

Site background and geography

The Isle of Portland to Studland Cliffs Special Area of Conservation (SAC) stretches for some 40 km along the coast of South Dorset (containing the St Albans Head to Durlston Head SAC).

The cliffs support species-rich calcareous grassland with particularly large populations of several species that are scarce in the UK such as wild cabbage Brassica oleracea var. oleracea, early spider-orchid *Ophrys sphegodes* and Nottingham catchfly *Silene nutans*. The endemic sea lavender *Limonium recurvum ssp recurvum* is locally frequent.

The Portland peninsula demonstrates clearly the contrast between an exposed western coast, with sheer rock faces and sparse maritime vegetation, and a more sheltered eastern side. On this sheltered coast and on the mainland cliffs east of White Nothe there are extensive slumped undercliffs and landslides with a mix of massive fallen boulders, grassland and scrub. The scrub contains a high proportion of wayfaring-tree *Viburnum latana*, while wood spurge *Euphorbia amygdaloides* occurs widely in the grassland. The open habitats that occur on sands and clays as a result of frequent landslips are an especially rich habitat for may localised invertebrate species. Calcareous boulders in this turf support important and restricted lichen and bryophyte assemblages.

Semi-natural dry grassland occurs in both inland and coastal situations on both chalk and limestone. The site contains extensive species-rich examples of tor-grass *Brachypodium pinnatum* grassland and smaller areas of sheep's-fescue – meadow oat-grass (*Festuca ovina – Helictotrichon pratense*) grassland occur on shallow soils on steeper slopes. It also supports important long-standing populations of early gentian *Gentianella anglica* numbering several thousands of plants.

The site lies partly within the Dorset AONB, and wholly within the Jurassic Coast World Heritage Site. Geologically the underlying rocks are from the Triassic, Jurassic and Cretaceous Periods. This geology, the geomorphological process that act upon it and the fossils it yields are recognised as being of outstanding universal value under the UNESCO World Heritage Site designation.

This SAC is within National Character Areas 136 South Purbeck 137 Isle of Portland, 138 Weymouth Lowlands and 135 Dorset Heaths.

This SAC is covered by the Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011), a document which assesses coastal processes and change and makes recommendations for future action, broken down into small coastal 'Policy Units'. This SAC is covered by Policy Unit 5g02 St Alban's Head to 6a01 Portland Bill to West Weare.

To the east, the SMP is the Poole and Christchurch Bays SMP (SMP, version 2, July 2011). This SAC is covered by Policy Units DUR 1 Durlston Head to Durlston Cliff Flats through SWA 5 Handfast Point to Ballard Point.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

- ***H1210. Annual vegetation of drift line***

This habitat type occurs on deposits of shingle lying at or above mean high-water spring tides. The types of deposits involved are generally at the lower end of the size range of shingle (2-200 mm diameter), with varying amounts of sand interspersed in the shingle matrix. These shingle deposits occur as fringing beaches that are subject to periodic displacement or overtopping by high tides and storms. The distinctive vegetation, which may form only sparse cover, is therefore ephemeral and composed of annual or short-lived perennial species.

In the UK this Annex I type is not always easy to classify using the NVC because it is highly variable between sites and from year to year at the same site. Level or gently-sloping, high-level mobile beaches, with limited human disturbance, support the best examples of this vegetation.

- ***H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts***

Isle of Portland to Studland Cliffs, including the detached peninsula of Portland, with St Albans Head to Durlston Head, forms a single unit of cliffed coastline some 40 km in length. The cliffs are formed of hard limestones, with chalk at the eastern end, interspersed with slumped sections of soft cliff of sand and clays. The cliffs support species-rich calcareous grassland with species that are rare in the UK, such as wild cabbage *Brassica oleracea var. oleracea*, early spider-orchid *Ophrys sphegodes and* Nottingham catchfly *Silene nutans*. The Portland peninsula, extending 8 km south of the mainland, demonstrates very clearly the contrast between the exposed western and southern coasts, with sheer rock faces and sparse maritime vegetation, and the sheltered eastern side, with sloping cliffs supporting scrub communities, where wood spurge *Euphorbia amygdaloides* grows in grassland.

- ***H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia*)**; **Dry grasslands and scrublands on chalk or limestone**

Semi-natural dry grassland occurs at this site in both inland and coastal situations on both chalk and Jurassic limestone. The site contains extensive species-rich examples of CG4 *Brachypodium pinnatum* grassland in the southern part of its UK range. Smaller areas of CG2 *Festuca ovina – Avenula pratensis* grassland occur on shallow soils on steeper slopes. Transitions from calcareous grassland to both chalk heath and acid grassland are also present. The site has well-developed terricolous and saxicolous lichen and bryophyte communities associated with open turf, chalk rock and pebbles, and flinty soils.

Qualifying Species:

- ***S1654. Gentianella anglica; Early gentian***

Early gentian *Gentianella anglica* is an annual plant, occurring in calcareous grassland, mainly on steep, south-facing slopes. It grows on bare ground or in thin turf that is kept open by a combination of rabbit or sheep-grazing and trampling by livestock on thin droughted soils. In dense turf it becomes shaded out and unable to compete with other more vigorous species. It is found on a variety of substrates and in different habitats, but is particularly frequent in coastal grasslands. At most of its localities the vegetation is referable to 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*).

There has been a marked decline in *G. anglica* since 1970, largely because of the ploughing of old chalk grassland and the abandonment of grazing on some of the remaining grasslands. The species is very much associated with a short grazed sward.

This site on the Dorset coast, together with St Albans Head – Durlston Head SAC, supports important long-standing populations the species.

Table 1: Supplementary Advice for Qualifying Features: H1210 Annual vegetation of drift lines

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution	**Extent of the feature within the site**	Maintain and where necessary restore the total extent of the H1210 feature to closely reflect the available suitable substrates/conditions along the SAC.	This habitat type occurs on deposits of shingle lying at or above mean high-water spring tides. The types of deposits involved are generally at the lower end of the size range of shingle (2-200 mm diameter), with varying amounts of sand interspersed in the shingle matrix. These shingle deposits occur as fringing beaches that are subject to periodic displacement or overtopping by high tides and storms. The distinctive vegetation, which may form only sparse cover, is therefore ephemeral and composed of annual or short-lived perennial species. The mobility of shingle foreshores is an overriding consideration, and colonising species are able to tolerate periodic disturbance by wave action. This may involve the erosion or deposition of the surface sediment that is consequently recolonised by characteristic annual vegetation. Species are also tolerant of saltwater inundation, as the beaches are often over-topped by the tide or subject to spray from waves breaking over the beach. Level or gently-sloping, high-level naturally mobile beaches, with limited human disturbance, support the best examples of this vegetation. Maximising the extent of suitable habitat for this community must focus on preventing interventions that adversely modify natural processes that create the habitat and activities which adversely impact the habitat and vegetation when it becomes established. SMP2 supporting documentation may include data on likely locations for characteristic sediment types for this habitat.	Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17 Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Poole and Christchurch Bays SMP (SMP, version 2, July 2011) DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Extent and distribution	**Spatial distribution of the feature within the site**	Maintain and where necessary restore the distribution and continuity of suitable beach conditions such that this habitat has the greatest opportunity to colonise annually	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			The conditions for annual establishment of this feature need to be secured for the whole beach frontage of a site to enable it to reach favourable condition. The distribution may change if the beach is responding to coastal processes.	
Extent and distribution	**Future extent of habitat within the site and ability to respond to seasonal changes**	Maintain and restore the ability of this habitat to re-establish itself in response to coastal processes and re-colonise after natural events	This recognises the need to allow for natural fluctuations in the extent and the distribution of this habitat feature, often during particular seasons and usually as a result of natural coastal processes. The habitat must be able to re-establish on newly-deposited beach formations of suitable sediment.	Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Poole and Christchurch Bays SMP (SMP, version 2, July 2011)
Structure and function (including its typical species)	**Vegetation community composition**	Maintain the component vegetation communities of the feature to the following characteristic National Vegetation Classification types • SD2 *Honkenya peploides – Cakile maritima* strandline community • MC6 *Atriplex prostrata – Beta vulgaris* ssp. *maritima* sea-bird cliff community (on shingle beaches only).	In the UK this Annex I type is not always easy to classify using the NVC because it is highly variable between sites and from year to year at the same site. It should also be noted that drift line vegetation found on a sand substrate is NOT referable to H1210, but are assessed as H2110 embryonic shifting dune communities. There may be a poor match with NVC types SD2 or Sneddon and Randall classification with driftline vegetation. Some locations with greater stability may resemble the MC6 vegetation type; but these perennials may be short-lived as a result of storm events.	Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17
Structure and function (including its typical species)	**Vegetation structure: zonation and transitions**	Maintain or where necessary restore the natural patterns of zonation across the drift line and between this and vegetation of more stable shingle landward that reflect the coastal processes and substrate type typical of the site.	This habitat is only generally found in a narrow fringing strip at and above MHW, but individual sites will show different patterns depending on the morphology of the site, and it can occur with perennial vegetation such as Crambe maritima. Where there is a fringing beach with no stable shingle to landward, other transitions may be present and these need to be identified. Transitions on this SAC can be to hard cliff edge, transitional eroding mud flows and associated perennial and annual vegetation brought down from H1230 vegetated sea cliff, eroding soft cliff with flush type communities etc.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Key structural, influential and distinctive species**	Maintain the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature *Honkenya peploides;* *Cakile maritima;* *Atriplex prostrata;* *A. glabrisucula;* *Galium aparine;* *Matricaria maritima;* *Polygonum oxyspermum;* *Salsola kali*. One-flowered Glasswort *Salicornia pusilla*	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include • Structural species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • Influential species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • Site-distinctive species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available. For this habitat feature, the vegetation will re-colonise each year so stable stands are unlikely, and these are limited in species due to the requirement for plants to be adapted to this environment. Characteristic species include *Honkenya peploides; Cakile maritima; Atriplex prostrata; A. glabrisucula; Galium aparine; Matricaria maritima; Polygonum oxyspermum; Salsola kali*. Changes in the relative abundance of species can indicate changes in sediment size or processes.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Structure and function	**Vegetation: undesirable**	Maintain or and where necessary reduce the frequency/cover of	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
(including its typical species)	**species**	the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread; • Tamarisk	succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. There is limited data on invasive undesirable species of this habitat type. The planting of species such as Tamarisk in an attempt to stabilise foreshores is detrimental to this habitat type.	
Structure and function (including its typical species)	**Nutrient availability**	Maintain the input of nutrients from tidally-derived organic matter and ensure these are able to break down in situ	Tidal litter is an essential element to provide both nutrients and shelter for the germination of seeds. The combination of inorganic and organic substrate is an important pre-curser to development of the habitat and its successful establishment of its component vegetation on an annual basis. Both elements will be regulated by coastal processes. Removal of organic litter through artificial means may be considered detrimental to this feature.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines
Structure and function (including its typical species)	**Sediment size range and type**	Maintain or and where necessary restore the availability and size range of those sediments typical of the feature at the site	Sediment size influences the establishment of vegetation and types of vegetation. Natural sorting of material by wave action maintains the optimum conditions. Some sites will have different sediment size ranges and material, but should generally be in the range of 2-200mm and the material must reflect the local geology and natural sources of sediment to the beach. Clearly any proposals including beach re-charge must take this into consideration and would ideally be avoid in the first place. Additionally, construction of structures which would interrupt natural sediment drift and starve sections of the coast of their supply of sediment should not be supported.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Poole and Christchurch Bays SMP (SMP, version 2, July 2011)
Structure and function (including its typical species)	**Niches for seedling establishment**	Maintain and restore the availability of niches which provide the potential for seedling establishment	Disturbance of wave-deposited sediment reduces potential niches for seed germination, changes the arrangement of wave-sorted sediment and can lead to burial of seeds to a greater depth which suppresses germination. Beach replenishment in areas known to comprise the range of suitable substrate sizes (2-200mm) should either be avoided or	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			be of similarly suitable material and placed at the optimum time of year to ensure seed of the drift line vegetation is still moile and will not be buried. More information is needed to assess the optimum time of year to carry this out.	
Supporting processes (on which the feature relies)	**Beach morphology and structure**	Maintain a natural profile, elevation and slope of the beach and foreshore within the site	This is important as the shape and form of the beach provides optimum conditions for the establishment and completion of the annual cycle of flowering, fruiting and seed dispersal of the feature's typical component species Features that would directly or indirectly modify this morphology should be avoided. Careful consideration should be given to maintaining morphology in the design of any necessary coastal structures. Additionally, any redundant structures that are having an adverse impact on morphology should be removed.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Poole and Christchurch Bays SMP (SMP, version 2, July 2011)
Supporting processes (on which the feature relies)	**Functionality and sediment supply including connectivity with the wider coastal sediment system**	Maintain or where necessary restore adequate sediment supplies to and across the site from source (the beach, offshore deposits, eroding cliffs etc)	There is a need at this site to ensure the continuous supply of sediment (from features such as soft eroding cliffs, dunes, offshore sand banks) to conserve this qualifying Annex I habitat feature. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. Sediment will be transported to the beach ridges by wave action and storms. Longshore drift will move sediment through a system and activities outside a site can have an impact on site integrity if inputs are reduced. Structures (groynes, piers, sea walls armour etc) and/or interventions (offshore aggregate winning for example) can all have a serious negative impact on the supply of sediment and the dependent geomorphological processes and structures.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Poole and Christchurch Bays SMP (SMP, version 2, July 2011)
Supporting processes (on which the feature relies)	**Water quality**	Where the feature is dependent on surface water and/or groundwater, maintain water quality and quantity to a standard which provides the necessary conditions to support the feature	Poor water quality could adversely affect the structure and function of this habitat type. The habitat is not likely to suffer from landward water quality issues as any flow/seepage from the backing cliffs is likely to sink below beach level quickly (though high levels of pollution from agricultural activities or leaking septic tanks may have strong localised effects and should be avoided/investigated and remedied.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain and where necessary restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain and restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Direct habitat management of this feature would typically take the form of preventing disturbance and the removal of non-organic tidal litter. Measures should be considered to manage the impact of visitor pressure on certain high footfall areas by protecting areas of suitable substrate from continuous disturbance, preventing the establishment of annual vegetation of drift lines.	Habitat account - Marine, coastal and halophytic habitats. 1210 Annual vegetation of drift lines
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request.				

Table 2: Supplementary Advice for Qualifying Features: H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution	**Extent of hard or soft cliff capable of supporting sea cliff vegetation**	Maintain and, if necessary, restore the total extent of the cliff system which is capable of supporting H1230 sea cliff vegetation of at least 32 Km.	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, **the full extent of the feature may need to be restored** from areas which are suitable for the feature but do not, for a variety of reasons, currently support it. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements, where given, may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of the Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. The whole cliff system acts to provide the range and variation of vegetation types and mosaics including bare ground. Extent may be measured in different ways but there are issues with measuring area of vertical cliffs. Reduction in extent can include smothering cliff slope, cliff foot or cliff top surfaces by engineered or dumped materials or invasion by native or non-native plant species. The extent attribute has been calculated from measuring the length of the SAC on GIS systems.	
Extent and distribution	**Spatial distribution of the feature within the site**	Maintain and where necessary restore the distribution and continuity of the habitat and any associated transitions which reflects the natural functioning	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		of the cliff system	future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature. Transitions include cliff top and cliff foot transitions to terrestrial or marine habitats. The extent and distribution of this feature is overwhelmingly currently dictated by the geomorphological processes acting upon the coast/cliffs. Maintaining coast where these processes are intact and functioning must be a priority while restoration of processes to areas where these have been disrupted should be pursued whenever possible.	DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Extent and distribution	**Future extent of habitat within the site and ability to respond to seasonal changes**	Maintain and where necessary restore active processes such that the system can adjust to longer-term natural change, including landward recession, and that fluctuations in the extent of vegetated areas to bare rock occur over time and space within the site	This recognises the need to allow for natural fluctuations in the extent and the distribution of this habitat feature, often during particular seasons and usually as a result of natural coastal processes. The need to allow the feature's communities to adapt to the landward recession of the cliffs requires that they are not hindered by inappropriate development/land use. Suitable land use should be secured in areas where recession is likely, through for example, agri-environment schemes or planning gain. Similarly, management of sediment availability and movement	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review (SMP2) Durlston Head to Rame Head Shoreline Management Plan (Final) DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			along the entire SAC, and beyond where functionally connected (sediment cells etc), must consider the impact(s) upon the function of the cliffs' geomorphological processes.	
Structure and function (including its typical species)	**Geo-morphological naturalness**	Maintain and where necessary restore the geomorphological naturalness of the sea cliff system (from cliff top to foreshore connection with the intertidal zone.	The physical landforms associated with this habitat feature, and the processes that shape them, will be a primary influence on sea-cliff habitat. A key criteria for selecting SACs for this habitat feature was that they had no or minimal artificial modification and so demonstrate good geomorphological naturalness. Having a well-developed sea-cliff structure, shaped by natural geomorphological processes, will ensure the full range of natural variation can occur. Existing and new structures can interrupt natural geomorphological processes, both at the structure's location and potentially along the entire feature extent.	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011) Nomination of the Dorset and East Devon Coast for inclusion in the World Heritage List, 2 (a) iii) The nominated Site represents an exceptional range of text-book exemplars of coastal geomorphological features, landforms and processes (P.16) Dorset County Council, 2001 Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Structure and function (including its typical species)	**Presence of mosaic of microhabitats**	Maintain and where necessary restore the diversity and range of microhabitats and bare areas resulting from active coastal processes/landslips	Each site will have a different configuration of geology and hydrology and maritime exposure, which will also change over time and space. The key aim is to maintain the full, naturally expected range of these in as natural a state as possible. This should be achieved allowing natural geomorphological processes which drive the creation of most of these microhabitats (such as large and small scale landslipping, cracking, mudsliding, vegetation collapse temporary pool creation, etc). Some discussion of the processes is contained within the Shoreline Management Plan.	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review (SMP2) Durlston Head to Rame Head Shoreline Management Plan (Final) Rodwell, J. S. 1992 British Plant Communities Volume 3 – Grasslands and Montane Communities

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types CG1 - *Festuca ovina - Carlina vulgaris* lowland calcareous grassland CG3 - *Bromus erectus* grassland CG4 - *Brachypodium pinnatum* grassland CG5 - *Bromus erectus - Brachypodium pinnatum* grassland MC1 *Crithmum maritimum – Spergularia rupicola* crevice community MC5 *Armeria maritime – Cerastium diffusum* therophyte community MC8 *Festuca rubra – Armeria maritime* maritime grassland MC11 *Festuca rubra – Daucus carota* maritime grassland	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations). The presence, composition, location and extent of maritime scrub, heath and/or grassland plus mosaics of the three, on cliff slopes or cliff tops will be determined by the interaction of natural geomorphological processes with exposure and soil characteristics and management where relevant. Areas of cliff that do not support these NVC communities should not be regarded as of a secondary level of importance. It is likely that lack of suitable management and/or past interventions (engineering, drainage, planting etc) have adversely affected the (semi) natural vegetation and restoration should be viewed as both possible and desirable. Natural community succession should be allowed to evolve without human interference/intervention. Any areas where succession has been checked by a reversible intervention should be prioritised for remedial, restorative works. For a full understanding of the NVC communities listed left, see the relevant volumes of Rodwell's British Vegetation	Bryan Edwards, DERC, 1998, A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey for English Nature. Rodwell, J. S. 1992 British Plant Communities Volume 3 – Grasslands and Montane Communities For detailed information on Units 33 and 34 see: Edwards B. DERC. 1996/1997 A Vegetation Survey of the Isle of Portland SSSI: East Weares and Verne Common. For detailed information on Units 40, 41, 42 and 43 see: Edwards B. DERC. 2004 A Vegetation Survey of the Coastal Strip, Isle of Portland. For detailed information on scrub see: Edwards B. DERC. 2002 The past and present distribution and conservation value of scrub on the Isle of Portland., and Edwards B. DERC. 2008 Trial introduction of British primitive goats to Penn's and East Weare, Isle of Portland. DWT, c.2015, Isle Of Portland:

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		W21 *Crataegus monogyna – Hedera helix* scrub W22 *Prunus spinosa – Rubus fruticosus* scrub	Communities. However, in the absence of these works, see the Wiki on NVC	Management And Monitoring Plan 2015 - 2025
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain or reduce the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread; Holm oak *Buddleia davidii* *Cotoneaster* spp Pampas Grass	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants. On the Isle of Portland in particular, *Cotoneaster* sp horizontalis, *integrifolius* and *simonsii* have been particular issues – though intensive control works have redressed the balance back to semi-natural vegetation. However these spp should be monitored and interventions made to prevent rapid colonisation in the correct conditions. It is not apparent that there is an issue with invasive native or non-native species on the cliffs of this SAC.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Structure and function (including its typical species)	**Key structural, influential and distinctive species**	Maintain and restore the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat • Constant and preferential plant species of CG1 - CG3 CG4 CG5 MC1 MC5 MC8 MC11 W21 & W22 NVC communities which are the main component of the H1230 feature within the SAC • *Limonium recurvum*: subsp.	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of	Bryan Edwards, DERC 1998, A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey for English Nature. (1) Edwards B. Dorset Environmental Records Centre (DERC) 2005 (for English Nature) A Review of Key species on the Isle of Portland. (2) Edwards B. DERC. 2005 A Review of Key Bryophyte and Lichen Species on the Isle of Portland; and Edwards B &

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		recurvum Rock Sea-lavender • *Limonium recurvum* subsp. *portlandicum* Portland Sea-lavender • *Gentianella anglica* Early Gentian • Vascular plant assemblage(1) • Lichen and bryophyte assemblage (2)	each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available. One of the richest coastal limestone lichen sites in the British Isles including 16 Red Data Book, 2 Nationally Rare and 39 Nationally Scarce species. The site is internationally important for *Lecania chlorotiza, Syncesia myrticola* and *Opegrapha saxigena.* Bryophyte assemblage of particular interest for its Mediterranean characteristics; includes 6 Red Data Book and 13 Nationally Scarce species.	Giavarini V. DERC. 2006 Lichen Monitoring on Boulders Isle of Portland SSSI: Cheyne Weare to East Weare. Edwards B. & Pearman D, 2004 Dorset Rare Plant Register Dorset Environmental Records Centre DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Structure and function (including its typical species)	**Regeneration potential**	Maintain and where necessary restore semi-natural vegetation on the cliff-top (within and/or beyond the site boundary as appropriate), and its connectivity with the lower cliff slopes.	This is important to ensure that there is a continuous supply of seed-rich semi-natural vegetation material from the clifftops to feed the sea-cliff system below. As the top of the cliff slumps and recedes as a result of natural processes, the vegetation dropping onto the lower slopes should provide suitable material for their re-colonisation with native plant species from adjacent semi-natural habitats above. The creation of an appropriate semi-natural habitat, without alien or exotic species, adjacent to the cliff zone can provide a buffer to the SAC feature.	DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Supporting processes (on which the feature relies)	**Physical features supporting vegetation: crevices, ledges, isolated stacks etc**	Maintain the associated physical components of the vegetated cliff feature (crevices, ledges, isolated stacks) with changes to them determined by natural processes only	The cliff structure and geomorphological processes are major influences on sea-cliff vegetation. The SAC is a stretch of uninterrupted 'Hard' cliffs with vertical or very steep faces of sedimentary Portland and Purbeck Limestone rock. Modification of geomorphological processes on or adjacent to the cliff system may be detrimental to the continuation of natural processes.	DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	**Hydrology/ drainage**	At a site, unit and/or catchment level (as necessary, maintain or where necessary restore natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for the Isle of Portland – Studland Cliffs SAC and sustaining the H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts. On these harder cliffs, hydrologically driven sliding and slumping are minor geomorphological drivers. The gradual erosion from moving water and the effects of freeze/thaw are significant mechanisms of cliff movement and fall. Erosion at the foot of the cliff by the sea is an additional major driver of cliff change.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Supporting processes (on which the feature relies)	**Maritime exposure including salt spray effects**	Maintain an appropriate degree of exposure to maritime effects, such as salt spray, both from regular inputs and storm events	Excessive exposure to salt spray can cause episodic die-back of sea cliff vegetation in some circumstances. Such die back can be a useful component in the cycle of succession in some locations, bringing about early successional niches where geomorphological processes are either hindered or slow (such as on hard cliff areas).	
Supporting processes (on which the feature relies)	**Water quality**	Where the feature is dependent on surface water and/or groundwater, maintain and restore water quality and quantity to a standard which provides the necessary conditions to support the feature	Elements of the St Albans Head to Durlston Head SAC features are dependent on wetland habitats, such as runnels and seepages, supported by surface and/or ground water. Maintaining the quality and quantity of water supply will be critical, especially at certain times of year. Impacts upon the vegetated sea cliff feature will arise from localised inputs from small streams and/or surface water conditions (run off from fields, roads, leaking septic tanks etc). Main rivers do not play a role. Consideration must be given to any proposal's likely impact on very local water quality and quantity. Considerations should include, but not be limited to, nutrient status, chemicals pollution, silt/sediment content, biological oxygen demand (BOD), and impacts upon water availability. Poor water quality and inadequate quantities of water can adversely affect the structure and function of this habitat type. Typically, meeting the surface water and groundwater environmental standards set out by the Water Framework	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Directive (WFD 2000/60/EC) will also be sufficient to support the achievement of SAC Conservation Objectives but in some cases more stringent standards may be needed. Further site-specific investigations may be required to establish appropriate water quality standards for the SAC.	
Supporting processes (on which the feature relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the St Albans Head to Durlston Head SAC should be assessed for their air quality impacts on the feature. Site specific critical loads and levels for features can be found here: http://www.apis.ac.uk/srcl/select-a-	Air Pollution Information System (www.apis.ac.uk). Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			feature?site=UK0019863&SiteType=SAC&submit=Next Note that as the Vegetated sea cliffs of the Atlantic and Baltic Coasts (H1230) comprises a variety of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature relies)	**Cliff morphology, slope and elevation**	Maintain the natural processes that determine cliff morphology, slope and elevation	These physical components greatly influence the structure of this habitat type. Allowing natural dynamic processes to operate is crucial to providing optimal conditions which will allow the long-term conservation of this habitat feature. Though the hard vertical cliffs of the St Albans Head to Durlston Head SAC erode very gradually, interruption of these processes, through partial stabilisation or slowing of cliff erosion and recession rates, with artificial management of cliff slope (through, for example, pinning, bolting, meshing, drainage etc) does not produce naturally-occurring conditions which is likely to lead to undesirable changes in characteristic sea cliff vegetation.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance from human activity**	Control and minimise human access to cliffs	In some locations the level of access to the cliffs for mountaineering and coasteering may have reached levels at which a negative impact on the SAC feature (and other non-SAC interests – breeding seabirds for example) may be occurring. Climbing activity can damage ledges and the vegetation growing on them, scuffing of rock faces can have a deleterious effect on lichens and bryophytes. The type and frequency of activity needs to be monitored and action taken to reduce pressure where it is having an adverse impact on a feature's constituent vegetation communities. Climbing and some more 'offbeat' cliff activities (camping on suspended ledges) not only has an impact on the cliff face, but also (and possibly more importantly) on the area of cliff top immediately adjacent to the cliff, where trampling and abrasion from ropes etc. is focussed.	

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Version Control Advice last updated: N/A			
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Additional attribute **Supporting Processes – Disturbance from human activity** has been added			

Table 3: Supplementary Advice for Qualifying Features: H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain and where necessary restore the total extent of the feature to the maximum extent possible this should be no less than 792 hectares.	There should be no interventions that result in measurable reduction (excluding any trivial loss) in the extent and area of this feature. It is likely that the full potential extent of the feature will need to be restored as well as further habitat landward of the current SAC boundary (see below). The baseline-value of extent given has been taken from the Natura 2000 – Standard Data Form and represents the estimated feature extent at designation. The extent data was gathered from site-based surveys. Area measurements given are approximate and accuracy depends on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. 792 ha is the figure given in the N2K Standard Data Sheet for this SAC The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. This feature, like most on the coast, is susceptible to natural dynamic processes, there will be acceptable variations in its extent through natural fluctuations, especially through natural geomorphological processes resulting in cliff failure and collapse. Given the linear nature of this feature and the often narrow extent between cliff edge and other land uses it will be highly desirable to seek creation of further extent of this feature outside the SAC boundary to provide both a continuation of the connectivity of the feature along the coast and to provide 'fall back' habitat for certain of the SAC features and the communities that they comprise.	DERC 1998. A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. NATURA 2000 – STANDARD DATA FORM Isle of Portland to Studland Cliffs SAC
Extent and distribution of the feature	**Spatial distribution of the feature**	Maintain and where necessary restore the distribution and configuration of the feature,	This feature forms by far the largest element of the entire SAC, some 227 ha of the total 283 ha (72% or so). This is due to suitable substrate occurring consistently along the entire length	DERC 1998. A National Vegetation Classification Survey of Portland to Studland Cliffs

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
	within the site	including where applicable its component vegetation types, across the site	- limestones with smaller areas of acid clay caps and drift in valleys, A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	cSAC. Survey by Bryan Edwards for English Nature. DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types CG1 *Festuca ovina - Carlina vulgaris* grassland CG3 *Bromus erectus* grassland CG4 *Brachypodium pinnatum* grassland	This habitat feature comprises a number of associated semi-natural calcareous vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining and/or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	Bryan Edwards, DERC 1998. A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey for English Nature. Rodwell, J. S. 1992 British Plant Communities Volume 3 – Grasslands and Montane Communities DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		CG5 *Bromus erectus – Brachypodium pinnatum* grassland		
Structure and function (including its typical species)	**Vegetation: proportion of herbs (including Carex spp)**	Maintain and/or restore the proportion of herbaceous species within the range 40%-90%	A high cover of characteristic herbs, including sedges (Carex species) is typical of the structure of this habitat type. The preferred and 'classic' mechanism by which this is achieved here is by extensive beef cattle, and sometimes, sheep grazing. Interventions or changes of use that may impinge upon or threaten the continuation of such management must be deterred. Conversely changes which will enhance the ability to graze and properly manage the constituent grasslands (as long as they do not have other negative impacts) should be encouraged.	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain and where necessary restore the abundance of the typical species listed below to enable each of them to be a viable component of the Annex 1 habitat • Constant and preferential plant species of CG1, CG3, CG4 and CG5 NVC communities which are the main component of the H6210 feature within the SAC • Early Spider Orchid *Ophrys sphegodes* • Early Gentian *Gentianella angelica* • Vascular plant assemblage	See generic text for this feature in Table 1.	DERC 1998. A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. Various surveys held by Natural England and the Dorset Environmental Records Centre (DERC) Edwards B. & Pearman D, 2004 Dorset Rare Plant Register Dorset Environmental Records Centre DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		• Key lepidoptera species including Lulworth Skipper *Thymelicus acteon* and Adonis Blue *Polyommatus bellargus* • Lichen and bryophyte assemblage		
Structure and function (including its typical species)	**Vegetation: undesirable species**	Reduce or eliminate the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread. European gorse (when becomes too dense/dominant); Holm Oak; Tor grass (*Brachypodium pinnatum*) *Buddleia davidii* *Cotoneaster* spp Pampas Grass	There will be a range of undesirable or uncharacteristic species which, if allowed to colonise and spread, are likely to have an adverse effect on the feature's structure and function, including its more desirable typical species. These may include invasive non-natives such as Cotoneaster spp, or coarse and aggressive native species which may uncharacteristically dominate the composition of the feature. Along the coast common or European gorse (*Ulex europaeus*) can be a major problem. It is a component of most of the coastal grasslands, especially where acidic 'clay with flints' or head deposits occur. If left unmanaged it can spread rapidly and take over entire parcels of land. Holm oak (*Quercus ilex*) is often a naturalised escapee of formal planting. In this SAC it is centred on the area around Durlston Castle and grounds and has encroached upon grassland areas. Management should seek to contain and in places push back Holm oak to encourage grassland regeneration. Tor grass is a complicated undesirable species as it also forms the key plant species in the life cycle of the rare and localised Lulworth Skipper (*Thymelicus action*). This species lays its eggs on, feed on and overwinters (as a caterpillar) within the dense tussocks of this grass. Its negative impacts are that it forms a dense tussocky mat of grass, spreading by aggressive rhizomes. It can smother other grasses and herbs leading to near monocultures. It is also only palatable to cattle early in the season.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) DWT, c.2015, Isle Of Portland: Management And Monitoring Plan 2015 - 2025

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Consistent, spring grazing by cattle seems to keep the species in check. There is ongoing research looking at reasons for its vigour and mechanisms to control it	
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain or where necessary restore the pattern of natural vegetation zonations/transitions between the various NVC calcareous grassland communities which form the feature.	The transitions/zonations between adjacent calcareous vegetation communities are, on this SAC, related to naturally-occurring changes in soil, aspect, slope and significantly the stress under which the community survives – this can be due to drought (thin soils) sea spray and wind (close to cliff edges and windy gullies etc). These 'ecotones' retain characteristics of each bordering community and add value in often containing species not found in the adjacent communities. They can also contain species found in other N2K features, in this case a transition between pioneer CG communities and certain species of the vegetated sea cliff feature, including certain lichens and bryophytes. Retaining such transitions provides further diversity to the habitat feature, and can support additional distinctive flora and fauna, particularly invertebrates.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature. This feature is generally characterised by thin, nutrient poor, highly porous soils. Some of the very best areas for key species (orchids, gentian etc) are at an early successional stage and comprise what are known as ‘skeletal’ soils having a low organic content and favouring annual or highly adapted species, especially where these occur in highly stressed clifftop locations. Threats to such soils are enrichment/eutrophication,	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			smothering under imported soils or waste etc. Additionally species such as common gorse can aggressively colonise such soils and relatively quickly significantly alter their nutrient status and chemistry (see above). While the overriding aim should be to retain the naturally occurring soils of this SAC through non-intervention, in some places it may be appropriate, after due consultation with Natural England, to restore the soil to an early state through mechanical intervention (turf stripping, soil stripping etc.).	
Structure and function (including its typical species)	**Supporting off-site habitat**	Maintain and where necessary restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the feature	The structure and function of the Semi-natural dry grasslands and scrubland facies: on calcareous substrates habitat, including its typical species is, strengthened by a network of adjacent or nearby semi-natural habitats (mostly of similar calcareous grassland) some of these are remnant grassland Sites of Nature Conservation Interest (SNCIs) and may be of comparable quality to the SAC feature. Others are more recent, often created or restored through successive agri-environment scheme interventions. The SAC feature relies on the continued presence of these areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. This supporting habitat may be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment. In this coastal setting, these adjacent habitats are also the future coastal grassland and will provide refuge to the feature as the cliffs recede beyond the current landward boundary of the SAC designation.	www.magic.gov.uk (Agri-environment scheme and priority habitat layers) Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Maintain and where necessary restore the overall extent, quality and function of any supporting features within the local landscape which provide a	There is a need at this site to maintain and restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. This need not only includes the connection of the coast into its backing ecological hinterland, but also the retention and, in places, need for enhancement of	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		critical functional connection with the site	the linear connectivity of the SAC itself where the area of semi-natural habitat is tightly 'squeezed' between cliff top and adjacent land use (this is down to a few tens of meters in places). These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain and where necessary restore the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change while retaining the same basic structure and ways of functioning. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that this site is considered to be vulnerable overall but are a lower priority for further assessment and action. Individual species may be more or less vulnerable than their supporting habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable Such environmental changes here may include changes in sea levels, storminess, precipitation and temperature all of which appear to already be increasing the rate at which the cliffs are	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England Available at http://publications.naturalengland.org.uk/publication/4954594591375360

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			eroding and cutting back into coastal habitat. This is already affecting the extent of some grassland and possibly the species feature (early gentian). Other impacts could include distribution, composition and functioning of this feature within the site. The vulnerability and response of features to such changes will vary, even within this single site. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.	
Supporting processes (on which the feature relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. Critical loads for this feature within the SAC are currently within	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk). Site specific critical loads and levels for features can be found here Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the St Albans Head to Durlston Head SAC should be assessed for their air quality impacts on the feature. Site specific critical loads and levels for features can be found here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019863&SiteType=SAC&submit=Next Note that as the H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites) comprises a variety of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance from human activity**	Control and minimise excessive human access to grasslands	In some locations the level of access along the clifftop grasslands by the public may have reached levels at which a negative impact on the SAC feature (and other non-SAC interests) may be occurring. The sheer volume of footfall in some locations, coupled with the limited 'depth' of the SAC (pinch points where break of cliff and landward boundary are as little as a couple of meters apart) can result in rapid destruction of sward to bare soil/chalk substrate in a matter of days. This is especially likely to occur when falls close sections of existing coast path/other access. The type and frequency of activity needs to be monitored and action taken to reduce pressure where it is having an adverse impact on a feature's constituent vegetation communities. Location of access points, signage, car parks capacity and charging and licencing of activity providers should all be considered as mechanisms which can create (or reduce) access pressure in specific locations.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain and where necessary resume the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain and/or restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. This is undertaken by a range of landowners, charities and other bodies. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI, management agreements and agri-environment scheme documents.	Various Higher Level Stewardship (HLS) Agreement documents, Countryside Higher Tier (CS HT) documents. Natural England 2014, *Site Improvement Plan Portland-Studland & St Albans-Durlston* Version 1.0 Views About Management (VAM) for component SSSI Various Higher Level Stewardship and Countryside Stewardship agreement documents.
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Additional attribute **Supporting processes – disturbance from human activity** has been added				

Table 4: Supplementary Advice for Qualifying Features: S1654. *Gentianella anglica*; early gentian

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance**	Maintain the abundance of the population at its current level, as indicated by the latest mean peak count or equivalent Avoid a deterioration in population. Where necessary, restore to a viable population size, Additionally, seek to maintain abundance across distribution of suitable host habitat.	The population of *G. anglica* on this SAC (and the contiguous St Alban's Head to Durlston Head SAC) is distributed in small populations along the coastal grasslands and, as such, is difficult to regularly count. It is known that counts do occur at certain locations, carried out by land owners but bringing these together to gain a detailed picture of the population is not easy. In 1997 approximately 11,000 plants were counted in 39 sub-populations in limestone grassland along 5km of the Purbeck coast between Seacombe and Durlston Head with outlying populations at Winspit and Swanage Townsend Reserve.(1) Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection.	**(1)** Wilson P.J. 1999 *The Distribution and Status of Gentianella anglica (Pugsley) E. Warb.* Plantlife Report no.119 Edwards B. 1997 *A Survey of Early Gentian (Gentianella anglica) in Dorset* Plantlife Rep 86 Edwards B. 1998 *A report on Gentianella anglica in Dorset (A supplement to the 1997 report)* **Plantlife** Rep 106

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population structure: presence of *Gentianella amarella, Gentianella x davidii* and 'intermediates'**	Maintain as appropriate, the presence of both *G. anglica* and *G. amarella*, and the putative hybrid between the two (*G. x davidii*)	Intermixed populations have been recorded from many sites, with the hybrid recorded especially from sites near edge of range of *G. anglica*. Phenological differences (flowering time) usually helpful in distinguishing between *G. anglica* and autumn gentian *G. amarella*. Note: there is still some uncertainty about the extent to which these two species hybridise, or indeed whether the two species are actually one. This hybridisation has been observed on the Isle of Portland - Studland Cliffs SAC, within which this SAC sits.	Edwards B. 1997 *A Survey of Early Gentian (Gentianella anglica) in Dorset* Plantlife Rep 86 Edwards B. 1998 *A report on Gentianella anglica in Dorset (A supplement to the 1997 report)* Plantlife Rep 106
Supporting habitat: extent and distribution	**Distribution of supporting habitat**	Maintain restore the distribution and continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site.	A contraction in the range, or geographic spread, of the feature and its supporting habitat across the site will reduce its overall area, the local diversity and variations in its structure and composition. It may also undermine its resilience to adapt to future environmental changes. Contraction may also reduce and break up the continuity of the supporting habitat within a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, and wind, that it receives compared to its interior. These conditions may not be suitable for this feature and this may affect its viability. The supporting habitat for this feature is currently well distributed along the coastal strip and colonies of *G. anglica* occur along its length. The maintenance of the areas of suitable habitat is clearly the foremost aim, but given the potential for this species' frequency within the SAC (substrate and NVC community distribution is wider than the feature's distribution). Other factors constrain the feature's utilisation of the supporting habitat, which need investigating.	DERC 1998. A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Maintain and where necessary restore the total extent of the habitats which support the feature dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) at no less than 792 hectares]	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate	DERC 1998. A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. NATURA 2000 – STANDARD

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. 792 ha is the figure given in the N2K Standard Data Sheet for this SAC. This will not, at any given time, mean that all this habitat feature is capable of supporting Early gentian. However, the cycles of bare ground creation and succession to mature grassland across the H6210 ensures the specific niches for the early gentian occur.	DATA FORM Isle of Portland to Studland Cliffs SAC
Supporting habitat: structure/ function	**Habitat structure and bare ground: regeneration/ colonisation niches**	Maintain and where necessary restore patches of bare ground and an open-textured sward to provide creating suitable regeneration/colonisation niches. Bare ground should be in range c 5-10%, but may be higher in some vegetation communities (especially CG1 and CG7).	Patches of suitable vegetation often occur in mosaics with less suitable areas, and generally associated with steeper slopes, more southerly aspects, thinner soils, heavier grazing, proximity to cliff edge/salt influence or trampling. All available evidence points to the need for plenty of bare ground in a short/tightly grazed open-textured sward. Many sites best described as 'sparsely vegetated'). It could be argued that both species occupy very similar niches within the intimate mosaic of microhabitat within a, at a large scale, stable mature grassland. At this SAC *G. anglica* has been seen growing in areas of bare chalk with very few other spp present in a very open exposed location (near Anvil Point LH) with virtually no soil.	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: structure/ function	**Soils, substrate and nutrient cycling**	Maintain and where suitable, restore the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, within typical values for the supporting habitat	Soil supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with the supporting habitat of this Annex II feature. This feature is generally characterised by thin, nutrient poor, highly porous soils. Some of the very best areas for *G. anglica* are at an early successional stage and comprise what are known as ‘skeletal’ soils having a low organic content and	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			favouring annual or highly adapted species, especially where these occur in highly stressed clifftop locations. There is a very strong correlation along the coast with the areas where chalk, Portland and Purbeck stones form the outcropping geology Threats to such soils are enrichment/eutrophication, smothering under imported soils or waste etc. Additionally species such as common gorse can aggressively colonise such soils and relatively quickly significantly alter their nutrient status and chemistry. While the overriding aim should be to retain the naturally occurring soils of this SAC through non-intervention, in some places it may be appropriate, after due consultation with Natural England, to restore the soil to an early state through mechanical intervention (turf stripping, soil stripping etc).	
Supporting habitat: structure/ function	**Substrate**	Maintain and where necessary restore a substrate of skeletal drought-prone relatively infertile soils overlying calcareous bedrock (chalk or limestone), occasionally overlying lime-rich sand on coastal sand dunes, with a generally SE, S or SW aspect.	See above for floristic indicators that may indicate changes in soil nutrient status (increase in fertility).	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: structure/ function	**Vegetation composition: negative indicators**	Control and where necessary, reduce the frequency/cover of the following undesirable species at or to acceptable levels and are not encouraged by changes in surface condition, soils, nutrient levels or changes to hydrology *Brachypodium pinnatum, Bromopsis erecta, Avenula pubescens, Arrhenatherum elatius, Dactylis glomerata, Ulex europaeus*	This feature can be adversely affected by changes to the grass: herb ratio (increased grassiness), often in tandem with sward becoming denser (less bare ground) or ranker ((thick layers of 'thatch etc generally indicating inadequate grazing and/or cutting). Cover of tall grasses, e.g. *Brachypodium pinnatum, Bromopsis erecta, Avenula pubescens, Arrhenatherum elatius, Dactylis glomerata*, should typically not exceed about 10% (except the first two may locally occur at higher cover in stands of CG4a and CG3a respectively). European gorse *Ulex europaeus* can, if left unchecked, rapidly	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report. Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			colonise calcareous grassland smothering existing vegetation. Its roots are able to concentrate nitrogen from the soil, leading to localised eutrophication and acidification. This can make re-colonisation after clearance of long standing growth more difficult. Other species likely to be favoured by increased soil fertility/agricultural improvement, e.g. *Lolium perenne, Holcus lanatus, Cynosurus cristatus, Trisetum flavescens, Trifolium repens*, should be rare or absent. Equally, 'agricultural weeds' such as *Cirsium arvense, Cirsium vulgare, Galium aparine, Plantago major, Rumex obtusifolius, Senecio jacobaea* and *Urtica dioica*, are likely to be indicators of bad management and loss/degradation of suitable habitat, so should be rare or absent.	
Supporting habitat: structure/ function	**Vegetation height**	Maintain and where necessary restore a sward typically in the range of 2-5cm, but may also occur in slightly taller swards (5-20cm) as long as these still have plenty of bare ground and an absence of 'grassy' dominants.	See below	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: structure/ function	**Vegetation structure and composition**	Maintain and restore the area of suitable supporting habitat which is short (2-5 cm), tightly-grazed and trampled calcicolous grassland with typically 5-10% bare ground which corresponds to the following NVC communities: CG1a, 1b, 2a, 2b, 3a, 4a, 7d. Most frequent in short species-rich CG2 and CG2b. In CG1 and CG7, bare ground may be 10-30%	Vegetation composition of this feature can be variable, depending on habitat, aspect, management regime and underlying geology/soils, but the frequent presence of the following species tend to be positive indicators of suitable Early Gentian habitat in its usual CG2 NVC community: *Poterium sanguisorba, Cirsium acaule, Thymus praecox, Polygala vulgaris, Carex flacca, Hippocrepis comosa, Blackstonia perfoliata, Linum catharticum, Leontodon hispidus, Pilosella officinarum, Ranunculus bulbosus*. Grasses such as *Avenula pratensis, A. pubescens, Brachypodium pinnatum, B. sylvaticum* and *Bromopsis erecta* may be frequent as an open grassy 'overstorey', but never abundant or dominant. Early gentain may often occur with autumn gentian *Gentianella amarella*, but the two species usually occupy different microsites and seasonal timings, although there may be	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			considerable overlap on some sites.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain and where necessary restore the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	See generic text for this attribute in Table 2 Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change while retaining the same basic structure and ways of functioning. Such environmental changes here may include changes in sea levels, storminess, precipitation and temperature all of which appear to already be increasing the rate at which the cliffs are eroding and cutting back into coastal habitat. This is already affecting the extent of some grassland and possibly the species feature (early gentian). Other impacts could include distribution, composition and functioning of this feature within the site. The vulnerability and response of features to such changes will vary, even within this single site. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis.	www.apis.ac.uk Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) Site specific APIS data for this SAC

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. The basic grasslands in which the feature is found can be quite resilient in the face of certain pollutants (acidification for example). Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the St Albans Head to Durlston Head SAC should be assessed for their air quality impacts on the feature. The current levels of airborne pollution and the critical loads/levels for the host habitats can be found on the Air Pollution Information System (APIS) here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019861&SiteType=SAC&submit=Next The S1654. *Gentianella anglica*; Early gentian feature is found within a series of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance from human activity**	Control and minimise excessive human access to grasslands	In some locations the level of access along the clifftop grasslands by the public may have reached levels at which a negative impact on the SAC feature (and other non-SAC interests) may be occurring. The sheer volume of footfall in some locations, coupled with the limited 'depth' of the SAC (pinch points where break of cliff and landward boundary are as little as a couple of meters apart) can result in rapid destruction of sward to bare soil/chalk substrate in a matter of days. This is especially likely to occur	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			when falls close sections of existing coast path/other access. The type and frequency of activity needs to be monitored and action taken to reduce pressure where it is having an adverse impact on a feature's constituent vegetation communities. Location of access points, signage, car parks capacity and charging and licencing of activity providers should all be considered as mechanisms which can create (or reduce) access pressure in specific locations.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Conservation measures**	Maintain and where necessary restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain and restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain and restore this feature at this site. Conservation grazing, using extensive cattle grazing is the prime mechanism by which this is achieved. Grazing is required to not only maintain a varied, but generally short, sward but also to have a mechanical input, creating an intimate mosaic of bare /disturbed ground within the grass matrix. This provides essential germination niches for *G. anglica* which is an annual. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	Natural England 2014, Site Improvement Plan Portland-Studland & St Albans-Durlston Version 1.0 Views About Management (VAM) for component SSSI, available online. Various Higher Level Stewardship and Countryside Stewardship agreement documents.
Supporting processes (on which the feature and/or its supporting habitat relies)	Grazing pressure	Maintain and, where necessary, restore a grazing regime to keep the sward short (preferably 2-5cm)	Swards usually require moderate to heavy grazing and/or trampling to keep them sufficiently short and open; but on some coastal sites, drought and exposure may be sufficient on their own to maintain suitable sward conditions. Grazing may be by (any combination of) rabbits, deer, sheep or cattle. Generally, rabbits and/or sheep preferred to cattle (see, e.g. Telfer 1994), although Wilson (2000) suggests for sites in Wilts that summer (April-October) cattle grazing at 1.5 animals/ha, plus less intensive grazing in the winter, is suitable for many sites, with sheep used in late summer to remove any	Wilson P.J. 1999 *The Distribution and Status of Gentianella anglica (Pugsley)* E. Warb. Plantlife Report no.119 Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			excess grass growth. In areas where *G. anglica* is present or is to be introduced, maintain an overview of the sward conditions rather than slavishly adhere to grazing calendars. Variations in temperature, rainfall, sunshine etc all combine to alter the rate of growth, grazing habits and bare ground. Grazing should be managed to ensure conditions are as good as management will allow.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Attribute relating to **Water quality / quantity** has been deleted as Early Gentian is not dependent on surface or ground water. Additional attribute **Supporting processes – disturbance from human activity** has been added				

ANNEX 25

Studland Cliffs SSSI Citation

SITE NOTIFIED TO THE SECRETARY OF STATE ON 26 NOVEMBER 1986

COUNTY: DORSET SITE NAME: STUDLAND CLIFFS

DISTRICT: PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: PURBECK DISTRICT COUNCIL, Dorset County Council

National Grid Reference: SZ 038828 to SZ 048813 Area: 18.3 (ha.) 45.2 (ac.)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 08 SW

Date Notified (Under 1949 Act): 1970 and 1954 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
Site formerly known as Studland Bay Cliffs SSSI. Includes part of previously scheduled Ballard Down and Cliffs SSSI.
Site is part of the Dorset Heritage Coast and lies within an Area of Outstanding Natural Beauty. Boundary amended by extension and deletion.

Description and Reasons for Notification:
An outstanding stratigraphic and structural site of national importance, the strike and dip cliff section displays unequalled exposures of mid-Campanian Chalk, especially important for palaeontological studies. To the south the Upper Chalk is separated from the Lower and Middle Chalk by the spectacular Ballard Down Fault.

This site is the best exposure, west of Alum Bay, to show the Chalk–Tertiary unconformity, and a relatively complete Palaeocene and lower Eocene succession. The bay provides important sedimentological data and enables palaeogeographic reconstruction of the western part of the Hampshire Basin during the deposition of the Reading Beds – 'Redend Sandstone' interval.

These coastal rock outcrops provide an outstanding cross section through the Purbeck Monocline, part of a belt of crustal flexures running through South Dorset and the Isle of Wight, one of the most important geological structures in southern England. The Ballard Down fault is exposed 300 metres north of Ballard point, cutting through the fold and juxtaposing nearly vertical Chalk to the south against nearly horizontal Chalk to the north. At Redend Point, horizontal Eocene sands overlying the Chalk are cut by sets of small faults which reflect compression associated with the formation of the Purbeck Monocline.

Ballard Down is a key site for coastal geomorphology. It includes a series of predominantly chalk cliffs, platforms and associated beaches, best known for the classic assemblage of stacks, arches and caves at Handfast Point. The site is also important for revealing not only the relationships between local bedrock structures and coastal form, but also the effects of

different wave dynamics on the north and south sides of the peninsula respectively. Ballard Down is the most sheltered of the major chalk cliff systems and so forms a key element of the suite of chalk cliff sites.

The site includes a strip of maritime, cliff-top grassland, dominated in places by Red Fescue *Festuca rubra*. There are many associated herbs including Kidney Vetch *Anthyllis vulneraria*, Wild Carrot *Daucus carota* and a good population of the local Wild Cabbage *Brassica oleracea*. Dense scrub covers the less steep cliffs in the north west of the site. The adjoining Studland Wood has an almost pure Hazel *Corylus avellana* canopy with occasional mature Field Maple *Acer campestre*, over a ground flora dominated by Ramsons *Allium ursinum* and Dogs Mercury *Mercurialis perennis*. Mature Spindle *Euonymus europaeus* and Dogwood *Cornus sanguinea* are frequent as fringing scrub. The wood has a rich invertebrate fauna with a number of uncommon species. These include the beetles *Grynobius excavatus*, *Ptinomorphus imperialis* and *Caulotrupodes aeneopiceus* in dead wood on the old Field Maple. The rare ant *Stenamma westwoodi* and the local Jet Ant *Lasius fuliginosus* also occur.

The cliffs are important for birds with several species nesting including one of three sites in Dorset for Cormorant *Phalocrocorax carbo* and an unusual cliff locality for House Martin *Delichon urbica*.

ANNEX 26

Purbeck Ridge (east) SSSI Citation

County: Dorset **Site Name: Purbeck Ridge (East)**

District: Purbeck

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981, as amended.

Local Planning Authority: Purbeck District Council, Dorset County Council

National Grid Reference: SY 959823 **Area:** 144.36 (ha)

Ordnance Survey Sheet 1:50,000: 195 **1:10,000:** 98SE, SZ08SE

Date Notified (Under 1949 Act): 1952 (part), 1954 (part), 1977

Dates Notified (Under 1981 Act): 1986 (part), 1999

Other Information:
The site is amended by extensions. The site contains three Geological Conservation Review sites. Part of the site lies within the Dorset Heritage Coast and Area of Outstanding Natural Beauty. The site adjoins Studland Cliffs SSSI.

Description and Reasons for Notification:
Purbeck Ridge lies in south Dorset and extends for 15 kilometres westwards from the steep chalk of Ballard Cliffs on the sea coast to Povington Hill and westwards to Bindon Hill and Lulworth Cove, the latter section lying within the South Dorset Coast SSSI. Purbeck Ridge (East) comprises the section of the Ridge extending eastwards from Corfe Castle to the coast at Ballard Down and Cliffs.

The Ridge rises abruptly from the Tertiary sands and clays of the Poole Basin at 50 metres to reach 199 metres at Godlingston Hill and comprises steeply inclined Upper Chalk with narrow outcrops of Upper and Lower Greensand and Gault clay at the foot of the south facing slopes. The low sea-cliffs from Swanage to Ballard Point expose Upper Wealden sands and clays which are overlain by Lower Greensand. Purbeck Ridge (East) supports extensive areas of high quality chalk downland with important invertebrate and lower plant communities, scrub and ancient broadleaf woodland. Acid grassland and chalk heath are present on localised drift, sands and clay. The site contains geological and geomorphological interest on the coast at Ballard Down, Punfield Cove and Swanage Cliffs.

Biological Interest:
Ancient broadleaf woodland is present on the north side of the Ridge at King's Wood which has a fine, natural high forest structure with old forest growth characteristics and a diverse flora. Several stands of small-leaved lime *Tilia cordata* are present and is of particular interest for its

restricted distribution in Dorset. On steep slopes, moist brown earth soils support coppice-with-standards and ash *Fraxinus excelsior*/oak *Quercus robur* high forest. The understorey contains maple *Acer campestre*, hazel *Corylus avellana* and occasionally spindle *Euonymus europaeus*. The ground flora is rich in species characteristic of ancient woods and diversity is provided by the varied soil conditions overlying the chalk and clay. The highest slopes support clay-with-flints with more free draining soils and oak is prominent over holly *Ilex aquifolium*, hawthorn *Crataegus monogyna* and hazel. Grasses and ferns are characteristic such as broad buckler fern *Dryopteris dilatata*, male fern *Dryopteris filix-mas* and meadow fescue *Festuca pratensis* with wood rush *Luzula sylvatica*, wood sorrel *Oxalis acetosella* and greater stitchwort *Stellaria holostea*. Pockets of deeper soil support an abundance of bluebell *Hyacinthoides non-scripta* and pignut *Conopodium majus*.

Dog's mercury *Mercurialis perennis* covers the steeper slopes with wood spurge *Euphorbia amygdaloides*, wood melick *Melica uniflora* and occasional great wood-rush *Luzula sylvatica*. Deeper, moist soils are dominated by ramsons *Allium ursinum* with occasional stinking iris *Iris foetidissima*. Hart's tongue fern *Phylitis scolopendrium* and soft shield fern *Polystichum setiferum* are abundant on thin soils and exposed rock. Climbing shrubs such as ivy *Hedera helix* and black bryony *Tamus communis* are frequent, and King's Wood has well-developed lianas of traveller's joy *Clematis vitalba*. The moist, humid conditions have allowed a luxuriant epiphytic community to develop with the ferns common polypody *Polypodium vulgare* and intermediate polypody *P. interjectum* locally abundantly on trees such as oak and maple.

Two distinct chalk grassland communities have developed in response to contrasting levels of grazing across the site together with localised areas of scrub, acid and neutral grassland. The richest downland is present where stock grazing has suppressed the growth of grasses to produce and maintain a short sward. This community is characterised by the high diversity and abundance of herbs such as wild thyme *Thymus polytrichus*, horseshoe vetch *Hippocrepis comosa*, salad burnet *Sanguisorba minor*, kidney vetch *Anthyllis vulneraria* and hoary plantain *Plantago media*. The endemic spring gentian *Gentianella anglica*[1] is present on Ballard Down whilst saw-wort *Serratula tinctoria* and yellow wort *Blackstonia perfoliata* are locally abundant. Grasses and sedges present in the short turf include tor grass *Brachypodium pinnatum*, quaking grass *Briza media*, sheep's fescue *Festuca ovina*, meadow oat-grass *Helictotrichon pratensis* and glaucous sedge *Carex flacca*. The Nationally Scarce nit-grass *Gastridium ventricosum* is present on Ballard Down and pale St. John's wort *Hypericum montanum* is present on the Ridge at only one of two sites in Dorset. Orchids such as autumn lady's tresses *Spiranthes spiralis*, pyramidal orchid *Anacamptis pyramidalis*, early purple orchid *Orchis mascula* are locally plentiful whilst bee orchid *Ophrys apifera* is occasional. Chalk heath is present on localised areas of acidic, sandy soils and contains bristle bent *Agrostis curtisii*, bell heather

Erica cinerea, heath bedstraw *Galium saxatile* and lichen *Cladonia portentosa*.

A taller, grassy sward is present where grazing levels are reduced and in hay meadows and this is characterised by the prominence of tor-grass, sheep's fescue and yellow oat-grass *Trisetum flavescens*. Typical and abundant herbs include lady's bedstraw *Galium verum*, carline thistle *Carlina vulgaris* and bird's-foot-trefoil *Lotus corniculatus*. Herbs with spreading rosettes that are able to persist in the overtopping sward include primrose *Primula vulgaris*, dwarf thistle *Cirsium acaule* and hoary plantain *Plantago media*.

European gorse *Ulex europaeus* is widespread and a diverse chalk scrub is locally dominant containing tree and shrubs such as ash, blackthorn *Prunus spinosa*, wild privet *Ligustrum vulgare*, wayfaring tree *Viburnum lantana* and clematis providing habitat for migrant and breeding birds such as stonechat and linnet.

The steep south-facing slopes of Ballard Cliff support a variety of coastal habitats such as ungrazed chalk grassland, chalk scree and seepages. Shallow soil on cliff ledges and crevices has abundant red fescue *Festuca rubra* and wild carrot *Daucus carota* with an assemblage of Nationally Scarce plants such as wild cabbage *Brassica oleracea*, Nottingham catchfly *Silene nutans*, golden samphire *Inula crithmoides* and white *horehound Marrubium vulgare*. The uncommon yellow-horned poppy *Glaucium flavum* is occasional.

Ballard Down and Godlingston Hill have well-developed terricolous and saxicolous lichen and bryophyte communities characteristic of exposed turf, hard chalk rock and flinty soils. The diverse lichen community has the Nationally Rare (Red Data Book) *Catillaria aphana* on chalk pebbles with a range of more widespread species on turf such as *Cladonia rangiformis*, *Lecania cyrtella* and *Collema tenax*. The range of habitats, notably the north facing grassland and disused chalk pits support the richest chalk grassland bryophyte flora in the county. The Nationally Rare (Red Data Book) *Weissia condensa* is present on short open turf together with the Nationally Scarce *Pleurochaete squarrosa*. Chalk pebbles in north facing disused chalk pits support bryophyte dominated communities containing the local leafy liverworts, *Frullania tamarisci*, *Scapania aspera* and *Porella arboris-vitae*.

Butterflies are well represented and abundant on the chalk grassland and scrub. Ungrazed tor grass supports strong populations of the Nationally Scarce Lulworth skipper *Thymelicus acteon* whilst the Nationally Scarce Adonis blue *Lysandra bellargus* is present on south-facing, closely grazed turf where its food plant horseshoe vetch is abundant. Local butterflies with a restricted distribution in Dorset include chalkhill blue *Lysandra coridon*, dingy skipper *Erynnis tages* and grayling *Hipparchia semele*. The Nationally Scarce grey bush-cricket *Platycleis albopunctata* is

present on Ballard Down close to the coast whilst the uncommon stripe-winged grasshopper *Stenobothrus lineatus* is present on well grazed, south facing downland. The invertebrate fauna in the woods is not well recorded but local species with a restricted distribution in Dorset indicative of ecological continuity are present such as the snail *Zenobiella subrufescens*, the ash-grey slug *Limax cinereoniger* and the beetle *Pediacus dermestoides*. The Nationally Scarce ladybird *Hyperaspis pseudopustulata* is present in King's Wood.

Ballard Cliff supports an assemblage of Nationally Rare invertebrates found in the chalk scree and seepages such as the case-bearing micro-moths *Coleophora ochrea* and *Eudarcia richardsoni*, the tortrix moth *Epiblema cnicicolana*, the cranefly *Limonia goritiensis*, the ground beetle *Dromius vectensis*. Nationally Scarce invertebrates that have been recorded include Lulworth skipper, the day flying moth Cistus forester *Adscita geryon*, the snail eating ground beetle *Lincinus punctatulus*, the large chrysalis snail *Abida secale* and the ground bug *Heterogaster artemisiae*.

Geological Interest:
Purbeck Ridge (East) incorporates three Geological Conservation Review sites which are of national importance for their geological and geomorphological features.

The low sea-cliffs from Swanage Bay to Ballard Point expose Upper Wealden sands and clays which are overlain by sediments of Aptian age (the Lower Greensand). The Wealden Beds are represented by the Wessex Formation which comprises a thick succession of alternating multicoloured marls, sands and interbedded shales. These were deposited in freshwater or periodic subaerial alluvial plain conditions. Sedimentary structures and coarse sandstones suggest more vigorous and intermittent braided rivers. About the middle of the formation is the Coarse Quartz Grit Member which comprises pebbles and sands of predominantly Cornubian origin (K-feldspar), tourmaline, Amorican staurolite, kyanite). The upper parts of the Wessex Formation have yielded the broken trunks of fossil trees, *Iguanodon* bones and cast of large *Unio* in ironstone concretions.

The overlying Wealden Shales (the Vectis Formation) were deposited in a shallow lagoonal environment and contain a fossil fauna and flora indicating a wider range of salinities than the Wessex Formation. The shales abound with ostracods *Cypridea* and intercalated limestones contain gastropods *Viviparus* and bivalves *Ostrea*. The Vectis Formation is only 35 metres thick at Swanage and continues the westerly thinning seen in the Isle of Wight. This attenuation is not fully understood and may result from a facies change, non-deposition, erosion or a combination of these factors.

Punfield Cove provides a complete section through the Lower Greensand and was originally proposed as the type locality for the 'Punfield Formation'. The base of the Lower Greensand is marked by a pebble bed which is overlain by a series of clays and ferruginous sandstones including a thin, but highly fossiliferous limestone termed the Punfield Marine Band Member. This limestone is palaeontologically of great significance – with a unique and palaeoecologically important mollusc and decapod fauna. Stratigraphically and palaeogeographically Punfield Cove is critical in demonstrating Lower Greensand thickness changes from the Isle of Wight westwards.

Ballard Down is a key site for coastal geomorphology. The section from Ballard Point southwards to Ballard Estate contains exposures of chalk and unconsolidated sands and gravels, each of which responds in a different manner to the erosion on a coast facing storms from a southerly direction. The steeply dipping chalk exceeds 100 metres in height before dropping away in Punfield Cove. Cliff falls in unconsolidated sands and clays are frequent and feed a shingle and cobble beach at the southern end of Swanage Bay.

[1] Species listed on Annex 2 of European Habitats and Species Directive.

ANNEX 27

Studland Cliffs SSSI Condition Assessment
(November 2022)

Report generated on: 04 Nov 2022

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment
Studland Cliffs SSSI - DORSET (PURBECK)								
SUPRALITTORAL ROCK	MATTHEW LOW	001	1006582	4.29	0.00	30/09/2011	Favourable	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	MATTHEW LOW	002	1006591	3.6038	0.00	22/07/2011	Favourable	
SUPRALITTORAL ROCK	MATTHEW LOW	003	1006596	13.218	0.00	22/01/2012	Favourable	

	Adverse Condition Reasons

ANNEX 28

Purbeck Ridge (east) SSSI Condition Assessment
(November 2022)

Report generated on: 04 Nov 2022

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment
Purbeck Ridge (East) SSSI - DORSET (PURBECK)								
SUPRALITTORAL ROCK	MATTHEW LOW	001	1021285	20.1421	0.00	24/11/2009	Favourable	Geological sections in coastal cliffs and vegetate sea cliffs in favourable condition, maintained by natural processes. Some natural erosion of soft cliffs has occurred, with slumping of clay and so rock onto beach in some areas. Coastal vegetati includes golden samphire, sea beet, rock samph and wild carrot, with reed and sallows in established damper ground. Open clay areas ha locally frequent coltsfoot. The habitat, including levels of bare ground, are favourable for invertebrates.
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	002	1021276	6.3851	0.00	06/09/2012	Favourable	
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	003	1021277	35.4084	0.00	06/09/2012	Unfavourable - Recovering	
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	004	1021279	12.0152	0.00	06/03/2015	Unfavourable - Recovering	HLS agreement negotiated and now live. All mechanisms in place to address unfavourable condition ie cattle grazing; scrub management.

	Adverse Condition Reasons
d ft on ire ve	

CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	005	1021280	6.9238	0.00	28/07/2009	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	006	1021281	0.9535	0.00	27/07/2007	Favourable

Calcareous CG4a grassland on SW-facing slope in favourable condition, with good grazing levels. Calcicoles include frequent horsehoe vetch, salad burnet, squinancywort, dwarf thistle, yellow-wort, eyebright and wild thyme, and occasional small scabious, common rockrose, quaking grass, fairy flax and burnet saxifrage. Autumn gentian and devil's-bit scabious are locally frequent in the northern part of the unit. The levels of bare ground and variety of habitat structure are favourable for invertebrates.	
Wessex Water field in favourable condition, managed by mowing annually in August and cuttings removed. Sward height 10-15 cms, acceptable after an exceptionally wet July. Over the whole field salad burnet, glaucous sedge, rough hawkbit, bird?s-foot trefoil, red clover and greater knapweed are frequent, with quaking grass, common knapweed, yellow rattle and field scabious occasional. On the drier upper slopes of field horseshoe vetch and black medick are frequent, with occasional marjoram, common rockrose, fairy flax, pyramidal orchid and hairy violet. The somewhat damper lower slopes have occasional meadowsweet and crosswort.	

CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	007	1021282	24.7374	0.00	28/07/2009	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	008	1021283	11.9148	0.00	02/04/2014	Unfavourable - Recovering
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	009	1021284	4.1094	0.00	29/11/2013	Unfavourable - Recovering

Large unit containing some high-quality CG4a calcareous grassland on slopes grazed by cattle and rabbits, with frequent horseshoe vetch, wild thyme, small scabious, dwarf thistle, mouse-ear hawkweed, squinancywort and bird's-foot trefoil, occasional carline thistle, common rockrose, harebell and common centaury, and rare autumn gentian, bastard toadflax, wild basil and restharrow. Ruderal species in the valley bottom include hound's-tongue, weld, cotton thistle and sharp-leaved fluellen, and provide good nectar sources for invertebrates and seeds for birds. Some clearance of gorse has occurred on the north-facing slope of the Giant's trencher. The levels of bare ground and variety of habitat structure are favourable for invertebrates.	
This unit shows some signs of recovery from restoration under the HLS agreement however there is still a considerable amount of scrub to be cleared and the grazing pressure needs to be increased. Areas restored have four positive indicators occasional; bird?s-foot trefoil, common rock-rose, cowslip and salad burnet with lady?s bedstraw, hairy violet and dwarf thistle among the other herbs seen. The unit fails on scrub cover, extent of feature, frequency of positive indicators and herb to grass ratio. Further scrub clearance is to be carried out shortly. Note that the lower slopes are wooded, scrub control to be focussed on gorse and bramble.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	MATTHEW LOW	010	1024729	20.6041	0.00	02/12/2013	Unfavourable - Recovering

ANNEX 29

Studland to Portland SAC Natura 2000 Standard Data Form

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0030382**

SITENAME **Studland to Portland**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0030382

1.3 Site name

Studland to Portland

1.4 First Compilation date	1.5 Update date
2012-08	2017-10

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee, Monkstone House, City Road, Peterborough, PE1 1JY

Email:

Date site proposed as SCI:	2012-08
Date site confirmed as SCI:	2013-11
Date site designated as SAC:	2017-09
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.168	50.555

2.2 Area [ha]:

33184.28

2.3 Marine area [%]

100.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKZZ	Extra-Regio

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1170			19353.07		G	A	C	A	A

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N01	100.0

Total Habitat Cover	100

Other Site Characteristics

General site characteristics: The Studland to Portland SAC lies off the south coast of the county of Dorset in England. The site comprises a mosaic of two areas containing Annex I reef habitat. The areas are described as (from east to west): Studland Bay to Ringstead Bay Reefs; Portland Reefs Studland Bay to Ringstead Bay Reefs. Numerous areas of reef (in many forms) exist within the Studland Bay to Ringstead Bay marea. The reefs exhibit a large amount of geological variety, ranging from exposed chalk bedrock east of Ringstead Bay, through to exposed shales and clays, limestone and cementstone ledges, and boulders around Kimmeridge to Durlston, and back to exposed chalk bedrock between Ballard Cliffs and Handfast Point in the east of the site. A number of features of particular interest are present within this area including: A series of limestone ledges (up to 15m across) protruding from a shelly gravel in Worbarrow Bay; St Albans ledge, which is a unique reef feature extending out over 10km offshore. The feature is subject to strong tidal action, which has scoured holes down to 60m in some areas; An area of large limestone blocks known as the `seabed caves` located east of St Albans ledge; Evans Rock, which is a gently sloping mound in the outer limits of Swanage Bay. The mound has a flat top covered with small, slab-like boulders and cobbles, separated by small areas of shelly sand. Portland Reefs The Portland Reefs area lies off the south, east and west coasts of Portland Bill and is characterised by flat bedrock, limestone ledges (Portland stone), large boulders and cobbles. Diver surveys in the western side of Portland Bill have recorded rugged limestone boulders providing deep gullies and overhangs. These occur where the coastal cliffs extend underwater and are clearly visible as 20m drop offs. Mytilus edulis beds are found to occur in very high densities on bedrock associated with strong currents off Portland Bill.

4.2 Quality and importance

Reefs for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	F02		I
H	G05		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

For further information on this site, including its features, conservation objectives, advice on operations and management, please see Natural England and JNCC's Conservation Advice on the Designated Sites System via the link below.

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0030382&SiteName=studland%

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

7. MAP OF THE SITES

Back to top

INSPIRE ID:

Map delivered as PDF in electronic format (optional)

☐ Yes ☒ No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 30

European Site Conservation Objectives for Studland to Portland SAC

European Site Conservation Objectives for Studland to Portland Special Area of Conservation Site code: UK0030382

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats**
- **The structure and function (including typical species) of qualifying natural habitats, and**
- **The supporting processes on which the qualifying natural habitats rely**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H1170. Reefs

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

This is a European Marine Site

This site is a part of the Studland to Portland European Marine Site (EMS).

These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 24 October 2018 to reflect the consolidation of the Habitats Regulations in 2017.

ANNEX 31

Solent to Dorset Coast SPA Citation and Natura 2000 Standard Data Form

Solent and Dorset Coast Site Citation

EC Directive 79/409 on the Conservation of Wild Birds

Special Protection Area (SPA)

Name: *Solent and Dorset Coast Special Protection Area*

Counties/Unitary Authorities:

The SPA lies entirely in UK territorial waters adjacent to the following counties / unitary authorities:

Dorset County Council, Purbeck District Council, Poole Borough Council, Christchurch Borough Council, Bournemouth Borough Council, New Forest District Council, Hampshire Country Council, Southampton City Council, Portsmouth City Council, Isle of Wight Council, Arun District Council, West Sussex Country Council, Gosport Borough Council, Fareham Borough Council, Havant Borough Council, Chichester District Council, Gosport Borough Council, Eastleigh Borough Council

Boundary of the SPA:

The landward boundary is located on the coasts of Dorset, Hampshire, Isle of Wight and West Sussex. The westernmost extremity of the boundary is at Worbarrow Bay in Dorset and the easternmost extremity of the boundary lies approximately 88km to the east at Bognor Regis in West Sussex. The westernmost extremity is determined by the modelled usage of Sandwich terns foraging from the Poole Harbour SPA, whereas the easternmost extremity is determined by the modelled usage of Sandwich terns foraging from Chichester & Langstone Harbours SPA.

The SPA wholly occupies The Solent with its seaward extent boundary beyond The Solent consisting, for simplicity, of angled straight lines. The seaward boundary consists broadly of three arcs running west to east. The furthermost extremes of these arcs lie at approximately 5km, 12km and 12km from the nearest points of the mainland shore and are determined by the modelled usage of Sandwich terns foraging from Poole Harbour SPA, Solent and Southampton Water SPA and Chichester & Langstone Harbour SPA.

Size of SPA:

The SPA covers an area of 88,980.55 ha.

Site description:

The Solent and Dorset Coast SPA is located along the coasts of Dorset, Hampshire, Isle of Wight and West Sussex and adjacent areas offshore. It overlaps, abuts and is close to many designated areas, summarised below. At its western point, South Dorset Coast SSSI, Townsend SSSI, Purbeck Ridge (West & East) SSSI, Studland Cliffs SSSI, Studland & Godlingson SSSI, Poole Bay Cliffs SSSI and Boscombe & Southbourne Overcliff LNR, Bournemouth fall just outside the SPA boundary and have no tern interest. A cluster of adjacent, overlapping and underpinning designations exist at Christchurch Harbour, Hengistbury Head and adjacent undeveloped land, which is surrounded by the Bournemouth and Christchurch sprawling conurbation on one side and open sea on the other. These designations include Dorset Heathlands SPA, Dorset Heaths SAC, Christchurch Harbour SSSI, Hengistbury Head LNR and Stanpit Marsh LNR, and are fed by the narrow Avon Valley (Bickton to Christchurch) Ramsar and SSSI, and River Avon System AONB and SSSI. The SPA boundary extends to Mean High Water and so is underpinned by Christchurch Harbour SSSI. Its citation describes, “The site comprises the drowned estuary of the rivers Stour and Avon and the peninsula of Hengistbury Head. The varied habitats include saltmarsh, wet meadows, drier grassland, heath, sand dune, woodland and scrub and the site is of great ornithological interest.” Terns are not mentioned on the citation but, “Sandwich, common and little terns all occur in the harbour and have tried to nest in the past but they face a lot of pressure from predators, disturbance and tides and sadly have not been successful.” (Chichester Harbour Ornithological Group, 2007). Along 9km of coastline, from Christchurch in Dorset to Milford on Sea in Hampshire, the cliffs and intertidal zone are designated Highcliffe to Milford Cliffs gSSSI, which underpin the SPA.

Along the northwest coast of The Solent, the Solent and Southampton Water SPA and Ramsar overlaps with Solent Maritime SAC and these are underpinned by the Hurst Castle and Lymington River Estuary SSSI. East from River Lymington, the intertidal saltmarsh is also designated Boldre Foreshore LNR. A series of intertidal SSSIs underpin the SPA and eastward are the North Solent SSSI (where also North Solent NNR), Dibden Bay SSSI, Hythe to Calshot Marshes SSSI, then east from Southampton is the Lee-on-Solent to Itchen Estuary SSSI (where also Hook and Warsash LNR), Titchfield Haven SSSI (also NNR and LNR) and Browndown SSSI near Gosport, Hampshire. Portsmouth Harbour SPA is underpinned by Portsmouth Harbour SSSI, where since the SPA will overlap this SPA, will itself become underpinned by this SSSI. Both estuaries of the Chichester and Langstone Harbours SPA are separately underpinned by SSSIs and Chichester Harbour is an AONB. Within or partly within this SPA’s boundary are Farlington Marshes LNR, West Hayling LNR, Hayling Billy LNR, Gutler Point LNR, The Kench, Hayling Island LNR, Sandy Point LNR, Earnes Farm LNR, Nutborne Marshes LNR, Pilsey Island LNR, The Solent Maritime SAC overlaps this SPA and further extends nearly 2km out from the south coast of Hayling Island.

Since the southwest headland and offshore sandbank of Hayling Island are designated Sinah Common SSSI and only abuts with the Solent Maritime SAC, the situation is thus

created wherein the intertidal part of this SSSI up to Mean High Water underpins the SPA, but not the SAC.

In West Sussex, the shoreline for approximately 8.2km from near West Wittering, southeast to Selsey is designated the Bracklesham Bay SSSI. Pagham Harbour SPA is underpinned by Pagham Harbour SSSI and abutting this along the intertidal zone for approximately 4km adjacent to Bognor Regis is the Bognor Reef SSSI. On the Isle of Wight, almost the entire coastal cliff-line and intertidal zone along the southwest side is designated SSSI, including Compton Chine to Steephill Cove SSSI, Compton Down SSSI and Headon Warren and West High Down SSSI, which occupies The Needles and west headland; all fall also within the Isle of Wight AONB. Colwell Bay SSSI occupies 1.7km of the northwest coastline. At Yarmouth is the Yar Estuary SSSI; either side and including Newtown is the Bouldnor and Hamstead Cliffs SSSI, Newtown Harbour SSSI (and NNR) and Thorness Bay SSSI. The entire northeast Isle of Wight coastline, around Foreland (east headland of Isle of Wight) and to Yaverland, near Sandown along the southeast coastline is all SSSI. Clockwise these are King's Quay Shore SSSI, Ryde Sands and Wootton Creek SSSI, Brading Marshes to St Helen's Ledges SSSI, Whitecliff Bay and Bembridge Ledges SSSI and Bembridge Down SSSI. Solent and Southampton Water SPA and Solent Maritime SAC also occupy intertidal and sub-tidal areas of the Isle of Wight. The South Wight Maritime SAC is relatively large, extending up to 4km out from the southwest coastline and out over 8km from the southeast coastline. Below Mean Low Water, these SACs are not underpinned by SSSIs. There are two Marine Conservation Zones that wholly lie within the SPA (The Needles MCZ; Yarmouth to Cowes MCZ) and one which partially lies within the site (Bembridge MCZ)

Qualifying species:

The site qualifies under **Article 4** of the Birds Directive (2009/147/EC) for the following reasons (summarised in Table 1):

- The site regularly supports more than 1% of the Great Britain breeding populations of three species listed in Annex I of the Birds Directive. Therefore, the site qualifies for SPA Classification in accordance with the UK SPA selection guidelines (stage 1.1).

Table 1 Summary of qualifying ornithological interest in Solent and Dorset Coast SPA

Species[1]	**Season**	**Count[2,3] (period)**	**% of GB breeding population[4]**
Sandwich tern *Sterna sandvicensis*	Breeding	441 pairs (882 breeding adults)[5] (2008 - 2014)	4.01%

Common tern *Sterna hirundo*	Breeding	492 pairs (984 breeding adults) (2009 - 2014)	4.77%
Little tern *Sternula albifrons*	Breeding	63 pairs (126 breeding adults) (2009 - 2014)	3.31%

[1] Species of terns that depend on the Solent and Dorset Coast SPA area of sea for foraging that derive from breeding colonies at the following existing SPAs: Poole Harbour SPA, Solent and Southampton Water SPA and Chichester & Langstone Harbours SPA.
[2] The SPA population is derived from the sum of the most recent populations of each species within the existing SPAs identified above. These totals exclude: i) numbers of any terns that may undertake foraging within Solent and Dorset Coast SPA, but derive from breeding colonies that are situated outside of existing SPAs; ii) numbers of any terns at existing SPAs which are not qualifying features of these sites and not currently present in numbers exceeding SPA selection criteria thresholds , iii) numbers of terns at existing SPAs which, although qualifying features of those sites, were not present at classification in numbers exceeding SPA selection criteria thresholds and/or are no longer present in such numbers, iv) numbers of terns at existing SPAs which, although qualifying features of those sites and present at classification in numbers exceeding SPA selection criteria thresholds are no longer present in such numbers at those particular sites and when summed across all source SPAs that might contribute to the numbers supported by the SPA.
[3] Sources of count data and recent mean figures for each contributing SPA are detailed elsewhere in this Department Brief.
[4] GB breeding populations taken to be that within Great Britain as presented in Musgrove *et al.* (2013).
[5] Pairs multiplied by 2 to arrive at breeding adult numbers; this rule applies to all species listed in the table

Principal bird data sources:

JNCC Seabird Monitoring Project and site managers from the National Trust, RSPB and Hampshire Country Council

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9020330**
SITENAME	**Solent and Dorset Coast**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
A	UK9020330

1.3 Site name

Solent and Dorset Coast

1.4 First Compilation date	1.5 Update date
2020-12	-

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	2020-01
National legal reference of SPA designation	Regulations 15 and 17-19 of The Conservation of Habitats and Species Regulations 2017 (https://www.legislation.gov.uk/uksi/2017/1012/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude
-1.006389

Latitude
50.737222

2.2 Area [ha]:

88980.55

2.3 Marine area [%]

99.87

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ3	Hampshire and Isle of Wight
UKJ2	Surrey, East and West Sussex
UKZZ	Extra-Regio
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A195	Sterna albifrons			r	63	63	p		G	C	C		
B	A193	Sterna hirundo			r	492	492	p		G	C	C		
B	A191	Sterna sandvicensis			r	441	441	p		G	C	C		

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N03	0.01
N23	0.01
N02	0.02
N01	99.94
N05	0.02
Total Habitat Cover	100

Other Site Characteristics

4 Marine Geomorphology: Estuary, Intertidal sediments (including sandflat/mudflat), Subtidal sediments (including sandbank/mudbank).

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: Sterna sandvicensis - 4.01% of the GB breeding population (5 year mean 2010-2014, 441 pairs). Sterna hirundo - 4.77% of the GB breeding population (5 year mean 2009-2014, 492 pairs). Sterna albifrons - 3.31% of the GB breeding population (5 year mean 2009-2014, 63 pairs).

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
L	G04		i
L	C02		i
L	D03		i
L	E01	X	o
M	F02		i
H	G01		i
L	C03		i
L	E03	X	b

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/6490068894089216

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	IFCAs
Address:	
Email:	

Organisation:	Local Authorities
Address:	
Email:	

Organisation:	MMO
Address:	
Email:	

Organisation:	Natural England
Address:	
Email:	

Organisation:	Ports
Address:	
Email:	

Organisation:	Crown Estate
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

7. MAP OF THE SITES

Back to top

INSPIRE ID:

Map delivered as PDF in electronic format (optional)

- [ ] Yes
- [X] No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 32

European Site Conservation Objectives for Solent to Dorset Coast SPA

European Site Conservation Objectives for Solent & Dorset Coast Special Protection Area

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

Qualifying Features

A191 *Sterna sandvicensis*; Sandwich tern (Breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sternula albifrons*; Little tern (Breeding)

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

This is a European Marine Site

This site is a part of the Solent & Dorset Coast European Marine Site (EMS). These conservation objectives should be used in conjunction with the Conservation Advice which would be subsequently provided for the EMS.

In the interim, Natural England's conservation advice for this potential European Marine Site, if requested, will be based on these Objectives.

Publication date: 27 February 2020 (version 3). This document updates and replaces an earlier version dated 27 February 2019 following the classification of the SPA by Government on 16 January 2020.

ANNEX 33

Poole Harbour SPA Citation and Natura 2000
Standard Data Form

EC Directive 2009/147/EC on the Conservation of Wild Birds

Special Protection Area (SPA)

Name: Poole Harbour SPA

Counties/Unitary Authorities: Dorset County Council, Poole Borough Unitary Authority, Purbeck District Council

Boundary of the SPA:

The landward boundary of the SPA extends to Mean High Water (MHW) in many places but above MHW in areas supporting important wet grassland and saltmarsh habitats. To the north, it includes Holes Bay and Lytchett Bay. North of Lytchett Bay it incorporates the lower reaches of the Sherford River and an area of former freshwater wet grassland at French's Farm. To the west of the harbour, it encompasses the lower reaches of the River Frome as far as Wareham, including areas of wet grassland and saltmarsh either side of the river channels. To the south it includes a number of bays: Arne Bay, Middlebere and Wych Lake, Ower Bay, Newton Bay and Brand's Bay, where it incorporates saltmarsh above MHW and adjoins the Dorset Heathlands SPA. To the built up area in the east and north-east, the boundary generally follows the MHW mark.

The seaward boundary of the SPA extends to the harbour mouth, where it abuts the Solent & Dorset Coast pSPA. It incorporates all the intertidal and subtidal areas below Mean Low Water (MLW), including Little Sea, which is entirely surrounded by the Dorset Heathlands SPA.

Size of SPA: The SPA covers an area of 4157 ha.

Site description:

Poole Harbour SPA is located on the coast of East Dorset and is bounded by the conurbation of Poole on its northern and eastern shores, and by the Isle of Purbeck on its western and southern shores. Poole Harbour is a large natural harbour comprising of extensive tidal mudflats and saltmarshes together with associated reedbeds, freshwater marshes and wet grasslands. It also includes seagrass beds located towards the north east of the harbour and subtidal channels in which 68 seaweed species, 159 invertebrate species and 32 fish species have been recorded. The site is underpinned by parts of the following Sites of Special Scientific Interest (SSSI): Poole Harbour; Arne; Wareham Meadows; The Moors, Holton & Sandford Heaths; and Studland & Godlingston Heaths. It also overlaps with Poole Harbour Ramsar site.

Qualifying species:

The site qualifies under **Article 4** of the Birds Directive (2009/147/EC) for the following reasons (summarised in Table 1):

- The site regularly supports more than 1% of the Great Britain populations of five species listed in Annex I of the EC Birds Directive. Therefore the site qualifies for SPA Classification in accordance with the UK SPA selection guidelines (stage 1.1).
- The site regularly supports more than 1% of the biogeographic population of two regularly occurring migratory species not listed in Annex I of the EC Birds Directive. Therefore the site qualifies for SPA Classification in accordance with the UK SPA selection guidelines (stage 1.2).

Table 1 Summary of qualifying ornithological interest species in Poole Harbour SPA

Feature	Count (period)	% of subspecies or population	Interest type
Common tern *Sterna hirundo*	178 pairs[1] (356 breeding adults) 2010-2014	1.8 % of GB population[2]	Annex 1
Sandwich tern *Sterna sandvicensis*	181 pairs[1] (362 breeding adults) 2010-2014	1.6 % of GB population[2]	Annex 1
Mediterranean gull *Larus melanocephalus*	64 pairs[3] (128 breeding adults) 2015	10% of GB population[2]	Annex 1
Little egret *Egretta garzetta*	114 individuals[4] 2009/10-2013/14	2.5 % of GB population[5]	Annex 1
Eurasian spoonbill *Platalea leucorodia*	20 individuals [4] 2009/10-2013/14	100% of the GB population[5,7]	Annex 1
Pied Avocet *Recurvirostra avosetta*	459 individuals[6] 1992/93 – 1996/97	36.1% of GB population[6]	Annex 1
Shelduck *Tadorna tadorna*	3,569 individuals[6] 1992/93 – 1996/97	1.2 % of biogeographic population[6]	Regularly occurring migrant
Icelandic-race black-tailed godwit *Limosa limosa islandica*	1,576 individuals[6] 1992/93 – 1996/97	2.3 % of biogeographic population[6]	Regularly occurring migrant

[1] Data from: Seabird Monitoring Programme (SMP)
[2] GB breeding populations derived from Musgrove *et al*. (2013)
[3] Data from: David Chown (pers. comm.).
[4] Data from: Wetlands Bird Survey database Holt *et al*. (2015)
[5] GB non-breeding populations derived from Musgrove *et al.* (2013)
[6] Data from: Poole Harbour SPA citation (March 2000)
[7] GB non-breeding population (20 individuals) derived from Musgrove *et al.* (2013). This source has been used for consistency with that used for all other species, but given the recent growth of the GB population since 2004/05 – 2008/09, this estimate of 100% within Poole is clearly incorrect. Holt *et al* (2015) give a maximum number of individuals counted in GB of 44. The Poole Harbour peak mean count of 20 equates to 45% of that figure.

Assemblage qualification:

The site qualifies under **Article 4** of the Birds Directive (2009/147/EC) as it used regularly by over 20,000 waterfowl (waterfowl as defined by the Ramsar Convention) or 20,000 seabirds in any season (Table 2).

Table 2 Summary of qualifying ornithological interest assemblage in Poole Harbour SPA

Feature	Count (period)
Overwintering waterbird Assemblage	25,176 individuals[1] 1993/94-1996/7 for all species except new feature of little egret and Eurasian spoonbill for which five-year peak means from 2009/10 – 2013/14 (114 and 20 respectively) added to original overwintering assemblage total, minus little egret four-year peak mean (48) for 1993/94-1996/7 and spoonbill four-year peak mean (1) 1993/94-1996/7

[1] Derived by addition of the most recent five-year peak mean counts for the new features of little egret and Eurasian spoonbill (from WeBS database Holt *et al.* 2015) to the assemblage figure of 25,091 individuals used in the original Poole Harbour SPA citation in 2000 and based on count data collected between 1993/94 and 1996/97.

During the non-breeding season the area supports 25,176 individual waders and waterfowl including (in addition to the species which qualify as features in their own right (Table 1)): dunlin *Calidris alpina*, great cormorant *Phalacracorax carbo*, dark-bellied brent goose *Branta bernicla bernicla*, teal *Anas crecca,* goldeneye *Bucephala clangula*, red-breasted merganser *Mergus serrator*, curlew *Numenius arquata,* spotted redshank *Tringa erythropus*, greenshank *Tringa nebularia*, redshank *Tringa totanus*, pochard *Aythya farina* and black-headed gull *Chroicocephalus ridibundus,* all of which are present in nationally important numbers.

Principal bird data sources:

Breeding bird features: tern colony counts from JNCC Seabird Monitoring Programme contributed by colony managers: Dorset Wildlife Trust (Brownsea Island) and incidental counts of breeding gulls on saltmarsh islands in the Wareham Channel (David Chown, *in litt.*).

Non-breeding birds: Wetlands Bird Survey (WeBS) database (Holt *et al.* 2015) for most recent years' data, and original Poole Harbour SPA citation for historical figures, i.e. WeBS data 1992/93-1996/97.

References

Holt, C.A., Austin, G.E., Calbrade, N.A., Mellan, H.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. and Musgrove, A.J. (2015) Waterbirds in the UK 2013/14: The Wetland Bird Survey. BTO/RSPB/JNCC. Thetford. http://www.bto.org/volunteer-surveys/webs/publications/webs-annual-report.

Musgrove, A., Aebischer, N., Eaton, M., Hearn, R., Newson, S., Noble, D., Parsons, M., Risely, K. and Stroud, D. (2013) Population estimates of birds in Great Britain and the United Kingdom. *British Birds*, 106: 64-100.

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK9010111**

SITENAME **Poole Harbour**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
A	UK9010111

1.3 Site name

Poole Harbour

1.4 First Compilation date	1.5 Update date
1999-03	2017-11

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1999-03
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.004	50.699

2.2 Area [ha]:

4157.52

2.3 Marine area [%]

44.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo
B	A026	Egretta garzetta			w	114	114	i		G	B		B	
B	A176	Larus melanocephalus			r	64	64	p		G	B		B	
B	A616	Limosa limosa islandica			w	1576	1576	i		G	B		C	
B	A607	Platalea leucorodia leucorodia			w	20	20	i		G	A		B	
B	A132	Recurvirostra avosetta			w	459	459	i		G	A		C	
B	A193	Sterna hirundo			r	178	178	p		G	C		C	
B	A191	Sterna sandvicensis			r	181	181	p		G	C		C	
B	A048	Tadorna tadorna			w	3569	3569	i		G	C		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles

- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	WATR	Waterbird assemblage			25176	25176	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N06	2.6
N07	0.4
N01	44.0
N10	6.0
N02	35.0
N03	12.0
Total Habitat Cover	100

Other Site Characteristics

1. Terrestrial Soil & Geology: Acidic, Clay, Mud, Peat, Sand, Sedimentary. 2. Terrestrial Geomorphology & Landscape: Lowland, Coastal, Valley. 3. Marine: Geomorphology: Estuary, Intertidal sediments (including sandflat/mudflat), Subtidal sediments (including sandbank/mudbank).

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: Larus melanocephalus - 10% of the GB breeding population (2015, 64 pairs). Sterna hirundo - 1.8% of the GB breeding population (5 year mean 2010-2014, 178 pairs). Sterna sandvicencis - 1.6% of the GB breeding population (5 year mean 2010-2014, 181 pairs). Over winter, the area regularly supports: Recurvirostra avosetta - 36.1% of the GB population (5 year peak mean 1992/93-1996/97, 459 individuals). Egretta garzetta - 2.5% of the GB population (5 year peak mean 2009/10-2013/14, 114 individuals). Platalea leucorodia - 100% of the GB population (5 year peak mean 2009/10-2013/14, 20 individuals). ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Tadorna tadorna - 1.2% of the biogeographic population (NW Europe) (5 year peak mean 1992/93-1996/97, 3,569 individuals). Limosa limosa islandica - 2.3% of the biogeographic population (Iceland) (5 year peak mean 1992/93-1996/97, 1,576 individuals). An internationally important assemblage of birds In the non-breeding season the area regularly supports: 25,176 individuals (4 year peak mean 1993/94-1996/97). Including: Egretta garzetta, Platalea leucorodia, Recurvirostra avosetta, Limosa limosa islandica, Branta bernicla bernicla, Phalacrocorax carbo, Numenius arquata, Calidris alpina, Bucephala clangula, Aythya ferina, Mergus serrator, Tringa totanus, Tringa erythropus, Tringa nebularia, Tadorna tadorna, Anas crecca and Chroicocephalus ridibundus.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	A04		b
H	H02	N	b
L	C02		i
M	F02		i
H	H01	N	b
M	E01	X	o
H	H04	N	b
L	G05		i
H	E03	X	b
L	D03		i
H	G01		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	D05		I
H	A03		b
H	G03		b

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/publication/3152751?category=3212324

http://publications.naturalengland.org.uk/publication/6625771074355200?category=5374002071601152

http://publications.naturalengland.org.uk/publication/6713862766198784

http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

5.1 Designation types at national and regional level:

Back to top

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	15.0	UK04	100.0		

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England, Southern Inshore Fisheries and Conservation Authority, Environment Agency, Poole Harbour Commissioners.
Address:	
Email:	

Organisation:	Borough of Poole, Purbeck District Council, Wessex Water, The Crown Estate, Dorset County Council.
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

[X] Yes — Name: Poole Harbour Aquatic Management Plan
Link: http://www.pooleharbouraqmp.co.uk/

[ ] No, but in preparation

[ ] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

7. MAP OF THE SITES

Back to top

INSPIRE ID:

Map delivered as PDF in electronic format (optional)

[ ] Yes [X] No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 34

European Site Conservation Objectives for Poole Harbour SPA

European Site Conservation Objectives for Poole Harbour Special Protection Area Site Code: UK9010111

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying Conservation Advice document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features

A026 *Egretta garzetta*; Little egret (Non-breeding)
A034 *Platalea leucorodia*; Eurasian spoonbill (Non-breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A176 *Larus melanocephalus*; Mediterranean gull (Breeding)
A191 *Sterna sandvicensis*; Sandwich tern (Breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
Waterbird assemblage

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

This is a European Marine Site

This SPA is a part of the Poole Harbour European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Publication date: 21 February 2019 (version 5). This document updates and replaces an earlier version dated 20 December 2017 to reflect the consolidation of the Habitats Regulations in 2017.

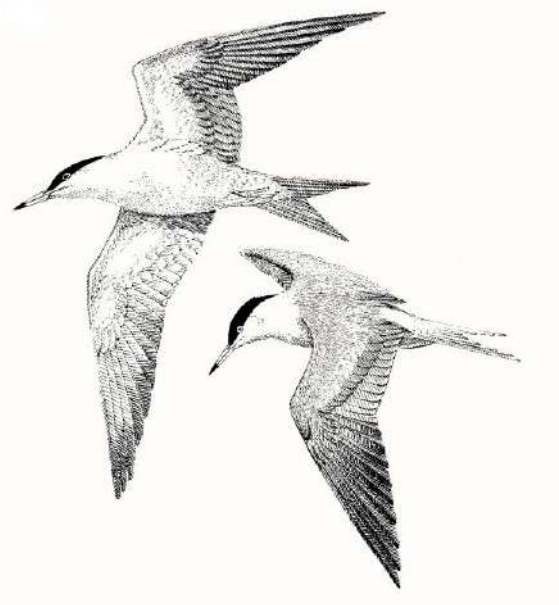
ANNEX 35

European Site Conservation Objectives:
Conservation Advice for Poole Harbour SPA

ENGLISH NATURE

Poole Harbour
European marine site

English Nature's advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994



Issued 10 November 2000

English Nature's advice for Poole Harbour European marine site given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994

Preface

This document provides English Nature's advice to other relevant authorities as to (a) the conservation objectives and (b) any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for the Poole Harbour European marine site. This advice is being prepared to fulfill our obligations under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994.

The **Poole Harbour** Special Protection Area is a European marine site. European marine sites are defined in the Conservation (Natural Habitats &c.) Regulations 1994 as any part of a European site covered (continuously or intermittently) by tidal waters or any part of the sea in or adjacent to Great Britain up to the seaward limit of territorial waters. European sites include Special Areas of Conservation (designated under the Habitats Directive, which support certain natural habitats and species of European importance), and Special Protection Areas (designated under the Birds Directive which support significant numbers of internationally important wild birds). In many instances these designations may coincide and our advice is being prepared to cover both the SAC and SPA interests where this occurs.

This 'Regulation 33 package' is designed to help relevant and competent authorities, who have responsibilities to implement the Habitats Directive, to:

- understand the international nature conservation importance of the site, underlying physical processes and the ecological requirements of the habitats and species involved;
- advise relevant authorities as to the conservation objectives for the site and operations which may cause deterioration or disturbance
- set the standards against which the condition of the site's interest features can be determined and undertake compliance monitoring to establish whether they are in favourable condition; and
- develop, if deemed necessary, a management scheme to ensure that the features of the site are maintained.

In addition, the Regulation 33 package will provide a basis to inform the scope and nature of 'appropriate assessment' required in relation to plans and projects (Regulations 48 & 50 and by English Nature under Regulation 20). English Nature will keep this advice under review and may update it every six years or sooner, depending on the changing circumstances of the European marine site. In addition, we will provide more detailed advice to competent and relevant authorities to assess the implications of any given plan or project under the Regulations, where appropriate, at the time a plan or project is being considered. If as a result of the UK SPA Network Review (led by JNCC) interest features are added to this European marine site or the site boundaries change, English Nature will amend this advice, as appropriate.

Tim Bines
General Manager
English Nature
10 November 2000

English Nature's advice for Poole Harbour European marine site given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994

Contents

List of Figures and Tables

Acknowledgements

English nature would like to acknowledge the assistance from the following people who have provided advice at various times to help prepare parts of this package

R N Appleton	Poole Harbour Commissioners
Richard Archer	RSPB
Fiona Bowles	Wessex Water
Dr Ken Collins	University of Southampton
David Collins	Environment Advisor, FCDE
Howard Davidson	EA South Wessex Area Manager
Richard Harrington	Marine Conservation Society
Dr Annabel King	Purbeck Estates Ecologist, National Trust
Bridget Loveday	Dorset Joint Marine Committee / Dorset Wildlife Trust
Michael Meekums	Marine Environment Branch, MAFF
David Ralph	Borough of Poole

English Nature's advice for Poole Harbour European marine site given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994

1. Introduction

1.1 Natura 2000

The European Union Habitats[1] and Birds[2] Directives are international obligations which set out a number of actions to be taken for nature conservation. The Habitats Directive aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements, and sets out measures to maintain or restore, natural habitats and species of European Union interest at favourable conservation status[3]. The Birds Directive protects all wild birds and their habitats within the European Union, and there are special measures for migratory birds and those that are considered rare or vulnerable.

The Habitats and Birds Directives include requirements for the designation of conservation areas. In the case of the Habitats Directive these are Special Areas of Conservation (SACs) which support certain natural habitats or species, and in the Birds Directive, Special Protection Areas (SPAs) which support wild birds of European Union interest. These sites will form a network of conservation areas across the EU to be known as "Natura 2000". Where SACs or SPAs consist of areas continuously or intermittently covered by tidal waters or any part of the sea in or adjacent to Great Britain up to the limit of territorial waters, they are referred to as European marine sites.

Further guidance on European marine sites is contained in the Department of the Environment Transport and Regions/Welsh Office document: *European marine sites in England & Wales: A guide to the Conservation (Natural Habitats &c.) Regulations 1994 and to the preparation and application of management schemes.*

1.2 English Nature's role

The Conservation (Natural Habitats &c.) Regulations 1994 translate the Habitats Directive into law in Great Britain. It gives English Nature a statutory responsibility to advise relevant authorities as to the conservation objectives for European marine sites in England and to advise relevant authorities as to any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the sites have been designated. This information will be a key component of any of the management schemes which may be developed for these sites.

This document is English Nature's advice for the Poole Harbour European marine site issued in fulfilment of Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations

---

1 Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

2 Council Directive 79/409/EEC on the conservation of wild birds

3 A habitat or species is defined as being at favourable conservation status when its natural range and the areas it covers within that range are stable or increasing and the specific structure and functions which are necessary for its long term maintenance exist and are likely to continue to exist for the foreseeable future.

1994 (the 'Regulation 33 package'). Copies of key references quoted in this document are held at the English Nature Dorset office.

In addition to providing such advice, the Regulation 33 package informs the scope and nature of 'appropriate assessment' which the Directive requires to be undertaken for plans and projects (Regulations 48 & 50 and by English Nature under Regulation 20. English Nature may also provide more detailed advice to competent and relevant authorities to assess the implications of any such plans or projects.

1.3 The role of relevant authorities

The Conservation (Natural Habitats &c.) Regulations 1994 require all competent authorities to exercise their functions so as to secure compliance with the Habitats Directive. This European marine site does not have a significant subtidal component, and is managed through existing SSSI mechanisms under the Wildlife and Countryside Act 1981, as amended 1985. However, relevant authorities may, if deemed necessary, draw up a management scheme under Regulation 34 for the European marine site component of the Poole Harbour SPA. If such a management scheme is developed, it would provide the framework through which relevant authorities exercise their functions so as to secure compliance with the Habitats Directive and must be based on the advice in this package. Irrespective of this decision, relevant authorities must, within their areas of jurisdiction, have regard to both direct and indirect effects on an interest feature of the site as well as cumulative effects. This may include consideration of features and issues outside the boundary of the European marine site and above the highest astronomical tide.

Relevant authorities should ensure that all plans for the area integrate with any management scheme for the European marine site. Such plans may include shoreline management plans, CHaMPs (Coastal Habitat Management Plans), local Environment Agency plans, SSSI management plans, local BAP plans and sustainable development strategies for estuaries. This must occur to ensure that there is only a single management scheme through which all relevant authorities exercise their duties under the Conservation (Natural Habitats &c.) Regulations 1994.

Relevant authorities also need to have regard to changing circumstances of the SPA and may therefore need to modify the way in which they exercise their functions so as to maintain the favourable condition of interest features concerned in the long term. There is no requirement for relevant authorities to take any actions outside their statutory functions.

Under certain circumstances, where another relevant authority is unable to act for legal reasons, or where there is no other relevant authority, English Nature is empowered to use its bylaw-making powers for Marine Nature Reserves (MNR) for use in European marine sites.

1.4 Activity outside the control of relevant authorities

Nothing within this Regulation 33 package will require relevant authorities to undertake any actions or ameliorate changes in the condition of interest features if it is shown that the changes result wholly from natural causes[4]. This also applies if the changes, although causing

[4] Determination of what constitutes natural change will be based on the best available information and scientific opinion at the time.

deterioration or disturbance to the interest features, are the result of human or natural events outside their control. Having issued Regulation 33 advice for European marine sites, English Nature will work with relevant authorities and others to agree, within a defined time frame, a protocol for evaluating all observed changes to baselines and to develop an understanding of natural change and provide further guidance as appropriate and possible.

On the Poole Harbour European marine site a Steering Group has already been set up and should be used to alert all relevant authorities to such issues so that they may be assessed and any appropriate measures taken. This does not, however, preclude relevant authorities from taking action to prevent deterioration to the interest features, for example by introducing or promoting codes of practice through the Steering Group.

1.5 Responsibilities under other conservation designations

In addition to its SPA status, parts of Poole Harbour are also designated and subject to agreements under other conservation legislation (eg. SSSIs notified under the Wildlife and Countryside Act 1981 as amended 1985). The obligations of relevant authorities and other organisations under such designations are not affected by the advice contained in this document.

1.6 Role of conservation objectives

Section 4 of this document sets out the conservation objectives for the Poole Harbour European marine site. They are the starting point from which management schemes and monitoring programmes maybe developed as they provide the basis for determining what is currently or may cause a significant effect, and for informing on the scope of appropriate assessments of plans or projects. The conservation objectives set out what needs to be achieved and thus deliver the aims of the Habitats Directive.

1.7 Role of advice on operations

The advice on operations set out in Section 6 provides the basis for discussion about the nature and extent of the operations taking place within or close to the site and which may have an impact on its interest features. It is given on the basis of the working assumption that sites were in favourable condition at the time they were identified. In the 2000 - 2006 reporting period an assessment of the condition of the site will be made to support this assumption, and assure that favourable condition is being maintained. The advice should also be used to identify the extent to which existing measures of control, management and use are, or can be made, consistent with the conservation objectives and thereby focus the attention of relevant authorities and surveillance to areas that may need management measures.

This operations advice may need to be supplemented through further discussions with any management and advisory groups for the European marine site.

2. Qualifying species within the SPA under the EU Birds Directives

The boundary of the Poole Harbour Special Protection Area (SPA) is shown in Figure 1.

The Poole Harbour SPA qualifies under Article 4.1 of the EU Birds Directive by supporting:

- Internationally important populations of regularly occurring Annex 1 species.

It also qualifies under Article 4.2 of the EU Birds Directive in that it supports:

- Internationally important populations of regularly occurring migratory species; and
- An internationally important assemblage of waterfowl.

Poole Harbour was classified as an SPA on 31 March 1999 and it is that citation on which this advice is based. Poole Harbour was also listed on [31 March 1999] as a Ramsar site under the Ramsar convention for its internationally important wetland status.

3. SPA interest features

The Poole Harbour SPA includes both marine areas (ie. land covered continuously or intermittently by tidal waters) and land which is not subject to tidal influence. The marine part of the SPA is termed a European marine site. The extent of the Poole Harbour European marine site is illustrated in Figure 2. The seaward boundary of the European marine site is concurrent with that of the SPA. The landward boundary of the European marine site is the upper boundary of the SPA, or where that extends above land covered continuously or intermittently by tidal waters it is at the limit of the marine habitats.

Where SPA qualifying species occur within the European marine site they are referred to as interest features. Sub-features (habitats) have also been identified to highlight the ecologically important components of the European marine site for each interest feature. The interest features and sub-features for the Poole Harbour European marine site are described below and the sub-features are mapped at Figure 2 to show their distribution and extent.

3.1 Background and context

A major aim of the Birds Directive is to take special measures to conserve the habitats of qualifying birds in order to ensure their survival and reproduction within the European Union. A key mechanism in achieving this is the classification by Member States of the most suitable sites as SPAs.

English Nature's conservation objectives at a site level focus on maintaining the condition of the habitats used by the qualifying species. Habitat condition will be delivered through appropriate site management including the avoidance of damaging disturbance. In reporting on Favourable Conservation Status, account will need to be taken both of habitat condition and the status of the birds on the SPA.

Accordingly, English Nature will use annual counts, in the context of five year peak means for qualifying species, together with available information on population and distribution trends, to assess whether an SPA is continuing to make an appropriate contribution to the Favourable Conservation Status of the species. Count information will be assessed in combination with information on habitat condition, at the appropriate time within the reporting cycle, in order to report to the European Commission

English Nature's advice focuses on the qualifying species for which the SPA was originally classified despite the fact that numbers and species composition may have changed on this site since that time. Such population and species composition changes are being documented through the UK SPA Network Review, led by JNCC, which will provide advice to Ministers on any changes required in SPA citations. Depending on the review and decisions from DETR, English Nature may reissue this advice.

In addition to focusing on avoiding deterioration to the habitats of the qualifying species, the Habitats Directive also requires that actions are taken to avoid significant disturbance to the species for which the site was designated. Such disturbance may include alterations in population trends and/or distribution patterns. Avoiding disturbance to species requirements is mentioned in the favourable condition table underpinning the conservation objectives for the SPA. In this context, five year peak mean information on populations will be used as the basis for assessing whether disturbance is damaging.

Attention is, however, also directed to the inclusion of disturbance in the advice on operations provided in section 6. Where disturbance is highlighted in such advice, relevant authorities need to avoid damaging disturbance to qualifying species when exercising their functions under the Directive.

3.2 Reductions in organic inputs

Under the Urban Waste Water Treatment (UWWT) Directive all coastal discharges above a certain volume must have secondary treatment installed by the end of 2000. Secondary treatment of sewage will significantly reduce organic loading and to a lesser extent reduce concentrations of dissolved nutrients. The effects of these reductions on coastal features and the birds they support are difficult to predict. On the one hand, it might be expected that there would be a redistribution of feeding birds or a reduction in the overall capacity of a coastal area to support bird populations. On the other hand, where bird populations are currently adversely affected by eutrophication, cleaner discharges may contribute to improving site condition.

English Nature supports the cleaning up of coastal discharges. On balance, the overall ecological benefits of cleaner discharges are likely, in general, to outweigh any subsequent local decline in bird numbers, although there is presently insufficient knowledge to accurately predict the effects in general or for individual SPA sites. Consequently, English Nature, with input from the Countryside Council for Wales and the Environment Agency, is commissioning a related research project to study the relationship between birds and organic nutrient levels, the overall effects on the ecosystem and thereby the effects of the clean-up programme under the UWWT and Bathing Water Directives.

Under the Habitats Regulations, if significant effects are likely from such activities, the competent authority (in this case the Environment Agency) will be required to undertake an appropriate assessment to determine whether there is an adverse effect on site integrity.

3.3 General description

In recognition that bird populations may change as a reflection of national or international trends or events, this advice on the bird interests of the European marine site focuses on the condition of the habitats necessary to support the bird populations. Sub-features are identified which describe the key habitats within the European marine site necessary to support the birds that qualify within the SPA. Detailed information and targets for habitat condition are listed in the favourable condition table in Section 5. Bird usage of the site varies seasonally, with different areas being favoured over others at certain times of the year. However, annual counts for qualifying species will be used by English Nature, in the context of five year peak means, together with available information on UK population and distribution trends, to assess whether this SPA is continuing to make an appropriate contribution to the Favourable Conservation Status of the species across Europe.

Bird communities are highly mobile and exhibit patterns of activity related to tidal water movements and many other factors. Different bird species exploit different parts of a marine area and different prey species. Changes in the habitat may therefore affect them differently. The important bird populations at this site require a functional embayment which is capable of supporting intertidal habitat for feeding and roosting. The most important factors related to this are:

- Current extent and distribution of suitable feeding and roosting habitat (eg saltmarsh, mudflats);
- Sufficient prey availability (eg small fish, crustaceans and worms);
- Minimal levels of disturbance;
- Water quality necessary to maintain intertidal plant and animal communities; and
- Water quantity and salinity gradients necessary to maintain saltmarsh conditions suitable for bird feeding and roosting.

The Poole Harbour European Marine Site contains a number of natural lagoons which are of particular importance for waterfowl populations. During the tidal cycle, the convoluted boundary between areas of saltmarsh, intertidal sediment communities and shallow inshore waters in these lagoons, exposes a relatively large stretch of suitable feeding habitat within a comparatively small area.

These natural lagoons should not be confused with the artificial walled lagoon on Brownsea Island. The waters within this lagoon are still under tidal influence and are therefore inside the European marine site boundary. However, maximum water levels are artificially controlled so that the shingle islands in the lagoon provide safe nesting sites above highest astronomical tide for breeding seabirds and therefore these islands are not included as a sub-feature within this package.

3.4 Internationally important populations of the regularly occurring Annex 1 species

The species listed in Annex 1 of the Birds Directive are the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. Species listed on Annex 1 are in danger of extinction, rare or vulnerable. Annex 1 species that regularly occur at levels over 1% of the national population meet the SPA qualifying criteria. Poole Harbour supports internationally important populations of avocet *Recurvirostra avosetta,* Mediterranean gull *Larus melanocephalus* and common tern *Sterna hirundo,* all species listed on Annex 1 that meet the qualifying criteria. Unlike the common tern, which only significantly exploits one feeding habitat, Mediterranean gulls feed on a number of prey species found within a range of intertidal and non-intertidal habitats. During the breeding season, Mediterranean gulls will generally increase their dependence upon freshwater habitats, however it is the combination of a range of habitats that are important in maintaining the favourable condition of the small breeding population of this Annex 1 species. Taking this into account and adopting a precautionary approach, all appropriate intertidal habitats need to be identified as sub-features, regardless of the extent to which each sub-feature might be exploited in isolation. Relevant authorities need also to have regard to adjacent European interests (ie those occurring above the highest astronomical tide), as they might be affected by activities taking place within, or adjacent to the European marine site. Objectives to maintain this aspect of bird interest in favourable condition are found within English Nature's conservation objectives for the relevant SSSI within the SPA boundary and will be dealt with through procedures outlined in the Conservation (Natural Habitats &c.) Regulations 1994.

Other Annex 1 species that regularly occur in the harbour include golden plover *Pluvialis apricaria,* sandwich tern *Sterna sandvicensis*, bewick's swan *Cygnus columbianus bewickii*, black-throated diver *Gavia arctica,* red-throated diver *G. stellata,* great northern diver *G.*

immer, slavonian grebe *Podiceps auritus*, marsh harrier *Circus aeruginosus*, hen harrier *C. cyaneus*, short-eared owl *Asio flammeus*, peregrine *Falco peregrinus*, kingfisher *Alcedo atthis* and ruff *Philomachus pugnax*.

3.4.1 Key sub-features

Shallow Inshore Waters inc. Lagoons - Shallow tidal waters provide key feeding habitat for the Annex 1 species common tern. avocet, and Mediterranean gull. Brownsea Island lagoon is an essential feeding area for wintering avocet. It also provides key nesting islands for common tern, however these are above highest astronomical tide and therefore not within the European marine site boundary. Shallow inshore waters are of importance for feeding common terns and to a lesser extent, for the qualifying population of breeding Mediterranean gulls which will also occasionally feed in these areas.

Intertidal Sediment Communities - Mudflats and sandflats support rich populations of intertidal invertebrate species, which in turn provide a food source for wintering avocets and breeding Mediterranean gull. Although avocets occasionally swim, they generally feed whilst wading on the intertidal sediments in areas of very shallow water. These habitats also provide important roosting areas for both species.

Saltmarsh Communities - This habitat is of importance for providing roosting, feeding and nesting habitat. Upper saltmarsh is of importance as nesting habitat for both common tern and Mediterranean gull, whilst saltmarsh habitats, and in particular the associated creeks are also used as a feeding area by Mediterranean gull. Saltmarsh provides ideal highwater roosts for all of the annex 1 species.

3.5 Internationally important assemblage of waterfowl including internationally important populations of regularly occurring migratory bird species

Britain's wildfowl belong to the north-west European population and the waders to the East Atlantic flyway population. Migratory species of these biogeographic populations that regularly occur at levels of 1% or more of the total biogeographical population meet the SPA criteria and qualify in their own right. Poole Harbour is also one of the most important estuaries in the UK for wintering waterfowl, and in addition to its internationally important populations, Poole harbour qualifies for its wintering waterfowl assemblage, regularly supporting over 20,000 birds (Cranswick and others 1999). The wintering waterfowl assemblage includes all the internationally important regularly occurring migratory or Annex 1 wintering species as well as species present in nationally important numbers or species whose populations exceed 2000 individuals.

Poole Harbour supports internationally important numbers of regularly occurring migratory black-tailed godwit *Limosa limosa* and shelduck *Tadorna tadorna*. Nationally important populations include dunlin *Calidris maritima*, cormorant *Phalacrocorax carbo*, dark-bellied brent geese *Branta bernicla bernicla*, teal *Anus crecca*, goldeneye *Bucephala clangula*, red-breasted merganser *Mergus serrator*, curlew, spotted redshank *Tringa erythropus*, greenshank *T. nebularia*, redshank *T. totanus*, pochard *Aythya ferina* and black-headed gull *Larus ridibundus*. During severe winter weather Poole Harbour assumes even greater national and international importance as waterfowl are attracted by the mild conditions and the abundant food resource.

3.5.1 Key sub-features

Shallow Inshore Waters inc. Lagoons - Shallow tidal waters provide key feeding and roosting habitat for the internationally important populations of wintering shelduck. Shallow tidal waters also provide key feeding habitat for nationally important populations of goldeneye, red-breasted merganser and cormorant, which feed on fish and small molluscs.

Intertidal Sediment Communities Mudflats and sandflats support rich populations of intertidal invertebrate species, which in turn provide a food source for the internationally important populations of black-tailed godwit and shelduck. Nationally important populations including dunlin, teal, curlew, spotted redshank, greenshank, redshank and black-headed gull also feed on these rich populations of intertidal invertebrate species. Nationally important populations of dark-bellied brent geese feed on *Zostera* and *Enteromorpha* that grow on the intertidal sediment communities. These habitats provide important roosting areas for all of theses species.

Saltmarsh Communities - Upper and lower saltmarsh provide important feeding areas for the internationally important assemblage of waterfowl and its qualifying species. Upper saltmarsh in particular also makes ideal highwater roost sites. Dark-bellied brent geese and teal feed on saltmarsh plants and their seeds.

Reedbeds - These provide feeding and roosting areas for a proportion of the internationally important assemblage of waterfowl. They are of particular importance for teal and pochard. Reed beds also play a key role in providing shelter for adjacent sub features.

4. Conservation objectives for SPA interest features

Under Regulation 33(2)(a) of The Conservation (Natural Habitats &c.) Regulations 1994, English Nature has a duty to advise other relevant authorities as to the conservation objectives for the European site. The conservation objectives for the Poole Harbour European marine site interest features are provided below and should be read in the context of other advice given in this package, particularly:

- the attached maps showing the extent of the sub-features;
- summary information on the interest of each of the features; and
- the favourable condition table, providing information on how to recognise favourable condition for the feature and which will act as a basis for the development of a monitoring programme.

4.1 The conservation objective for the internationally important populations of the regularly occurring Annex 1 bird species

Subject to natural change, maintain in favourable condition[5] the habitats for the **internationally important populations of the regularly occurring Annex 1 bird species**, under the Birds Directive, in particular:

- **Shallow inshore waters**
- **Intertidal sediment communities**
- **Saltmarsh**

Numbers of bird species using these habitats are given in Table 1

4.2 The conservation objective for the internationally important populations of regularly occurring migratory bird species

Subject to natural change, maintain in favourable condition[5] the habitats for the **internationally important populations of regularly occurring migratory bird species**, under the Birds Directive, in particular:

- **Shallow inshore waters**
- **Intertidal sediment communities**
- **Saltmarsh**
- **Reedbed**

Numbers of bird species using these habitats are given in Table 1

[5] For a detailed definition of how to recognise favourable condition see Table 2 (Section 5)

4.3 The conservation objective for the internationally important assemblage of waterfowl

Subject to natural change, maintain in favourable condition [5] the habitats for the **internationally important assemblage of waterfowl** under the Birds Directive, in particular:

- **Shallow inshore waters**
- **Intertidal sediment communities**
- **Saltmarsh**
- **Reedbed**

Numbers of bird species using these habitats are given in Table 1

Note: These SPA conservation objectives focus on habitat condition in recognition that bird populations may change as a reflection of national or international trends or events. Annual counts for qualifying species will be used by English Nature, in the context of five year peak means, together with available information on UK population and distribution trends, to assess whether this SPA is continuing to make an appropriate contribution to the Favourable Conservation Status of the species across Europe.

Table 1 Information on populations of bird species qualifying under the Birds Directive using the Poole Harbour European marine site at the time the SPA was classified.

Internationally important populations of regularly occurring Annex 1 species.

Species	Population (5 yr peak mean)*		
Avocet (*Recurvirostra avosetta*)	459 birds	36.1 %Great Britain	(1992/93 - 1996/97)
Mediterranean gull (*Larus melanocephalus*)	5 pairs	22.7-38.5%Great Britain	(1993 - 1997)
Common tern (*Sterna hirundo*)	155 pairs	1.3% Great Britain	(1993 - 1997)

Internationally important populations of regularly occurring migratory bird species.[6]

Species	Population (5 yr peak mean for 1992/93 - 1996/97)*		
Shelduck (*Tadorna tadorna*)	3,569 birds	1.2% North West Europe	
Black-tailed godwit (*Limosa limosa*)	1,576 birds	2.3% Iceland	

An internationally important assemblage of waterfowl.

Importance	Population (5 yr peak mean for 1992/94 - 1996/97)*
Poole Harbour supports large populations of wintering waterfowl.	23,498 individual birds - (based on no data for wildfowl in 1992/93)

* SPA citation (March 1999) held on Register of European marine sites for Great Britain.

Nationally important bird populations within internationally important assemblages of water fowl

Species	Importance
Dunlin *Calidris alpina*	Nationally important population
Cormorant *Phalacrocorax carbo*	Nationally important population
Dark-bellied brent geese *Branta bernicla bernicla*	Nationally important population
Teal *Anas crecca*	Nationally important population
Goldeneye *Bucephala clangula*	Nationally important population
Red-breasted merganser *Mergus serrator*	Nationally important population
Curlew *Numenius arquata*	Nationally important population
Spotted redshank *Tringa erythropus*	Nationally important population
Greenshank *Tringa nebularia*	Nationally important population
Redshank *Tringa totanus*	Nationally important population
Black-headed gull *Larus ridibundus*	Nationally important population

6 Poole Harbour is regularly used by 1% or more of the biogeographical population of a regularly occurring species (other than those listed on annex 1) in any season (Cranswick *et al.*, 1995).

5. Favourable condition table

The favourable condition table is supplied as an integral part of English Nature's Regulation 33 advice package. It is intended to supplement the conservation objectives only in relation to management of activities and requirements on monitoring the condition of the site and its features. The table **does not by itself** provide a comprehensive basis on which to assess plans and projects as required under Regulations 20 and 48-50, but it does provide a basis to inform the scope and nature of any 'appropriate assessment' that may be needed. It should be noted that appropriate assessments are, by contrast, a separate activity to condition monitoring requiring consideration of issues specific to individual plans or projects. English Nature will provide more detailed advice to competent and relevant authorities to assess the implications of any given plan or project under the Regulations, where appropriate, at the time a plan or project is being considered.

The favourable condition table is the principle source of information that English Nature will use to assess the condition of an interest feature and as such comprises indicators of condition. On many terrestrial European sites, we know sufficient about the preferred or target condition of qualifying habitats to be able to define measures and associated targets for all attributes to be assessed in condition monitoring. Assessments as to whether individual interest features are in favourable condition will be made against these targets. In European marine sites we know less about habitat condition and find it difficult to specify favourable condition. Individual sites within a single marine habitat category are also all very different, further hampering the identification of generic indicators of condition. Accordingly, in the absence of such information, condition of interest features in European marine sites will be assessed against targets based on the existing conditions, which may need to be established through baseline surveys in many cases.

The assumption that existing interest features on European marine sites are in favourable condition will be tested in the 2000 - 2006 reporting period and the results subsequently fed back into our advice and site management. Where there is more than one year's observations on the condition of marine habitats, all available information will need to be used to set the site within long-term trends in order to form a view on favourable condition. Where it may become clear that certain attributes are a cause for concern, and if detailed studies prove this correct, restorative management actions will need to be taken to return the interest feature from unfavourable to favourable condition. It is the intention of English Nature to provide quantification of targets in the favourable condition table during the 2000 - 2006 reporting period.

This advice also provides the basis for discussions with management and advisory groups, and as such the attributes and associated measures and targets may be modified over time. The aim is to produce a single agreed set of attributes that will then be monitored in order to report on the condition of features. Monitoring of the attributes may be of fairly coarse methodology, underpinned by more rigorous methods on specific areas within the site. To meet UK agreed common standards, English Nature will be committed to reporting on each of the attributes subsequently listed in the final version of the table, although the information to be used may be collected by other organisations through agreements.

The table will be an important, but not the only, driver of the site monitoring programme. Other data, such as results from compliance monitoring and appropriate assessments, will also have an important role in assessing condition. The monitoring programme will be

developed as part of the management scheme process through discussion with the relevant authorities and other interested parties. English Nature will be responsible for collating the information required to assess condition and will form a judgement on the condition of each feature within the site, taking into account all available information and using the favourable condition table as a guide.

Box 1	**Glossary of terms used in the favourable condition table**
Interest feature	The habitat or species for which the site has been selected.
Sub-feature	An ecologically important sub-division of the interest feature.
Attribute	Selected characteristic of an interest feature/sub-feature which provides an indication of the condition of the feature to which it applies.
Measure	What will be measured in terms of the units of measurement, arithmetic nature and frequency at which the measurement is taken. This measure will be attained using a range of methods from broad scale to more specific across the site.
Target	This defines the desired condition of an attribute, taking into account fluctuations due to natural change. Changes that are significantly different from the target will serve as a trigger mechanism through which some further investigation or remedial action is taken.
Comments	The rationale for selection of the attribute.

Table 2 Favourable Condition Table for Poole Harbour European marine site

Numbers of bird species using these habitats are given in Table 1

NB - Many of the attributes will be able to be monitored at the same time or during the same survey. The frequency of sampling for many attributes may need to be greater during the first reporting cycle in order to characterise the site and establish the baseline.

Feature	Sub - Feature	Attribute	Measure	Target	Comments
Internationally important populations of regularly occurring Annex 1 bird species (eg avocet, Mediterranean gull, common tern)	All Sub-features	Disturbance in feeding, nesting and roosting areas.	Reduction or displacement of wintering and breeding birds	No significant reduction in numbers or displacement of wintering and breeding birds attributable to disturbance from an established baseline, subject to natural change.	Significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure as well as a reduced breeding success. Five year peak mean information on populations will be used as the basis for assessing whether disturbance is damaging.
		Absence of obstructions to view lines	Openness of terrain unrestricted by obstructions	No increase in obstructions to existing bird view lines.	Avocet, common tern and Mediterranean gull require unrestricted views to allow early detection of predators when feeding and roosting.
	Shallow inshore waters	Extent and distribution of habitat	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	The shallow coastal waters of the Harbour are important for feeding common tern. The shallow stable water of the Brownsea Island lagoon are important for feeding avocet.
		Food availability	Presence and abundance of fish and intertidal invertebrates. Measured periodically (frequency to be determined)	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Marine insects, crustaceans, molluscs, fish and worms are important for avocet. Sandeel and sprat (5-8cm), crustacean and annelids are important for common tern Crustaceans, annelids, gobies and molluscs are important for Mediterranean gull.

Feature	Sub - Feature	Attribute	Measure	Target	Comments
Internationally important populations of regularly occurring Annex 1 bird species (eg avocet, Mediterranean gull, common tern)	Intertidal sediment communities	Extent and distribution of habitat	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Intertidal sediments and their communities provide both habitat and feeding areas for the Annex 1 bird populations.
		Food availability	Presence and abundance of fish and intertidal invertebrates. Measured periodically (frequency to be determined)	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Marine insects, crustaceans, molluscs, fish and worms are important for avocet. Crustaceans, annelids, gobies and molluscs are important for Mediterranean gull.
	Saltmarsh	Extent and distribution of habitat	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Saltmarsh and their communities provide both feeding and roosting areas for the Annex 1 bird populations.
		Food availability	Presence and abundance of fish and intertidal invertebrates. Measured periodically (frequency to be determined)	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Crustaceans, annelids, gobies and molluscs are important for Mediterranean gull.
		Vegetation Characteristics	Open, short vegetation or bare ground predominating (roosting).	Vegetation height throughout areas used for roosting should not deviate significantly from an established baseline, subject to natural change.	Vegetation of <10cm is required throughout areas used by roosting terns, gulls and avocet.

Feature	Sub - Feature	Attribute	Measure	Target	Comments
Internationally important assemblage including internationally important populations of migratory species	All Sub-features	Disturbance in feeding and roosting areas.	Reduction or displacement of wintering birds measured using 5 year peak mean information on populations.	No significant reduction in numbers or displacement of wintering birds from an established baseline, subject to natural change.	Significant disturbance attributable to human activities can result in reduced food intake and / or increased energy expenditure. Five year peak mean information on populations will be used as the basis for assessing whether disturbance is damaging.
	Shallow inshore waters inc. lagoons	Extent and distribution of habitat	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Tidal waters and lagoons provide roosting and feeding areas for waterfowl
		Food availability	Presence and abundance of marine fish and invertebrates. Measured periodically (frequency to be determined).	Presence and abundance of food species should not deviate significantly from an established baseline, subject to natural change.	*Mytilus, Cardium, Littorina, Hydrobia* and *Carcinus* are important for goldeneye. Marine fish <11cm, shrimps and *Nereis* are important for red-breasted merganser.
	Intertidal sediment communities	Extent and distribution of habitat	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Intertidal sediments and their communities provide both roosting and feeding areas for the migratory species of birds.

Feature	Sub - Feature	Attribute	Measure	Target	Comments
		Food availability	Presence and abundance of intertidal invertebrates and small fish. Measured periodically (frequency to be determined)	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	*Nereis, Hydrobia* and *Corophium* for shelduck *Macoma, Cardium* and *Nereis* for black-tailed godwit. *Nereis, Macoma, Hydrobia, Crangon* and *Carcinus* for dunlin. *Carcinus* and *Nereis* for curlew. *Nereis, Gammarus, Crangon, Hydrobia, Littorina* and small fish for greenshank. *Hydrobia, Macoma Corophium* and *Nereis* for redshank. *Gammarus, Nereis* and *Macoma* for spotted redshank. *Nereis, Arenicola* and *Hydrobia* for black-headed gull. *Hydrobia* for teal.
Internationally important assemblage including internationally important populations of migratory species	Intertidal sediment communities	Food availability	Presence and abundance of eelgrass and/or green algae. Measured periodically (frequency to be determined)	Presence and abundance of food species should not deviate significantly from an established baseline, subject to natural change.	*Zostera* and *Enteromorpha* are important for dark-bellied brent geese.
		Absence of obstructions to viewlines	Openness of terrain unrestricted by obstructions	No increase in obstructions to existing viewlines.	Waders require unrestricted views >200m and brent geese >500m, to allow early detection of predators when feeding and roosting.
	Saltmarsh	Extent and distribution of habitat	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Waterfowl feed and roost within the saltmarsh areas of the Poole Harbour SPA.

Feature	Sub - Feature	Attribute	Measure	Target	Comments
		Food availability	Presence and abundance of crustaceans, annelids, fish and molluscs. Measured periodically (frequency to be determined)	Presence and abundance of food species should not deviate significantly from an established baseline, subject to natural change.	*Nereis, Hydrobia* and *Corophium* for shelduck *Macoma, Cardium* and *Nereis* for black-tailed godwit. *Nereis, Macoma, Hydrobia, Crangon* and *Carcinus* for dunlin. *Carcinus* and *Nereis* for curlew. *Nereis, Gammarus, Crangon, Hydrobia, Littorina* and small fish for greenshank. *Hydrobia, Macoma Corophium* and *Nereis* for redshank. *Gammarus, Nereis* and *Macoma* for spotted redshank. *Nereis, Arenicola* and *Hydrobia* for black-headed gull. *Hydrobia* for teal.
Internationally important assemblage including internationally important populations of migratory species	Saltmarsh	Food availability	Presence and abundance of soft leaved and seed bearing plants. Measured periodically (frequency to be determined).	Presence and abundance of food species should not deviate significantly from an established baseline, subject to natural change.	*Salicornia* and *Atriple* are for teal. *Spegularia, Puccinellia, Triglochin, Aster trifolium, Plantago* and *Salicornia* spp. are important for dark-bellied brent goose.
		Vegetation Characteristics	Open, short vegetation or bare ground predominating (roosting).	Vegetation height throughout areas used for roosting should not deviate significantly from an established baseline, subject to natural change.	Vegetation of <10cm is required throughout areas used by roosting waders.
		Absence of obstructions to viewlines	Openness of terrain unrestricted by obstructions	No increase in bird obstructions to existing viewlines.	Waders require unrestricted views >200m and brent geese >500m, to allow early detection of predators when feeding and roosting.

Feature	Sub - Feature	Attribute	Measure	Target	Comments
	Reedbed	Extent and distribution of habitat.	Area (ha), measured once per reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Waterfowl feed and roost within the reedbed areas of the Poole Harbour SPA.
		Food availability	Abundance of crustaceans, annelids, fish, molluscs and suitable vegetation. Measured periodically (frequency to be determined).	Frequency and abundance of food species during the winter period should not deviate significantly from an established baseline, subject to natural change.	*Hydrobia* for teal. *Nereis*, *Hydrobia* and *Corophium* for shelduck.

6. Advice on operations

English Nature has a duty under Regulation 33(2)(b) of The Conservation (Natural Habitats &c.) Regulations 1994 to advise other relevant authorities as to any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species, for which the site has been designated. Information on how English Nature has developed this advice is given in section 6.2, and on how it may be reviewed and updated in the future, in Section 6.4.

The advice is provided in summary form in Table 3 and Section 6.5 and with more detail in Table 4 and Section 6.8, including advice in relation to specific interest features and their sub-features.

6.1 Purpose of advice

The aim of this advice is to enable all relevant authorities to direct and prioritise their work on the management of activities that pose the greatest potential threat to the favourable condition of interest features on the Poole Harbour European marine site. The advice is linked to the conservation objectives for interest features and will help provide the basis for detailed discussions within the management group to formulate and agree a management scheme to agreed timescales for the site. The advice given here will inform on, but is without prejudice to, any advice given under Regulation 48 or Regulation 50 on operations that qualify as plans or projects within the meaning of Article 6 of the Habitats Directive.

6.2 Methods for assessment

To develop this advice on operations English Nature has used a three step process involving:

- an assessment of the **sensitivity** of the interest features or their component sub-features to operations;

- an assessment of the **exposure** of each interest feature or their component sub-features to operations; and

- a final assessment of **current vulnerability** of interest features or their component sub-features to operations.

This three step process builds up a level of information necessary to manage activities in and around the European marine site in an effective manner. Through a consistent approach, this process enables English Nature to both explain the reasoning behind our advice and identify to competent and relevant authorities those operations which pose the most current threats to the favourable condition of the interest features on the European marine site.

All the scores of relative sensitivity, exposure and vulnerability are derived using best available scientific information and informed scientific interpretation and judgement. The process uses sufficiently coarse categorisation to minimise uncertainty in information, reflecting the current state of our knowledge and understanding of the marine environment. Information has been gathered from a range of sources including reports such as ABP Research (1999).

6.2.1 Sensitivity assessment

The sensitivity assessment used is an assessment of the relative sensitivity of the interest features or the component sub-features of the Poole Harbour European marine site to the effects of broad categories of human activities. In relation to this assessment, sensitivity has been defined as the intolerance of a habitat, community or individual (or individual colony) of a species to damage, or death, from an external factor (Hiscock, 1996). The sensitivity has been assessed in relation to the use of habitats by birds. As an example, wintering birds are highly sensitive to loss of their roosting or feeding grounds.

The sensitivity assessments of the interest features or their component sub-features of the Poole Harbour European marine site are based upon a series of scientific review documents. These include reports produced for the UK Marine SAC LIFE project (Davison & Hughes 1998; Elliott and others 1998), the Countryside Council for Wales Science Report (Holt and others 1995) and the Marine Habitats Reviews (Jones and others 2000.).

The sensitivity assessments are based on current information but may develop with improvements in scientific knowledge and understanding. In particular, English Nature and Scottish Natural Heritage have commissioned the Marine Biological Association of the UK, through its Marine *Life* Information Network (MarLIN) to provide detailed sensitivity information to underpin this advice, over the next three years, and available to all over the World Wide Web (www.marlin.ac.uk).

6.2.2 Exposure assessment

This has been undertaken for the Poole Harbour European marine site by assessing the relative exposure of the interest features or their component sub-features to the effects of broad categories of human activities currently occurring on the site. The exposure has been assessed in relation to the use of habitats by birds. As an example, wintering birds' feeding and roosting grounds may be considered highly exposed to toxic contamination from synthetic compounds due to the locations and intensity of discharges into an area.

6.2.3 Vulnerability assessment

The third step in the process is to determine the vulnerability of interest features or their component sub-features to operations. This is an integration of sensitivity and exposure. Only if a feature is both sensitive and exposed to a human activity will it be considered vulnerable. In this context therefore, 'vulnerability' has been defined as the exposure of a habitat, community or individual (or individual colony) of a species to an external factor to which it is sensitive (Hiscock, 1996). The process of deriving and scoring relative vulnerability is provided in Appendix I.

6.3 Format of advice

The advice is provided within six broad categories of operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species. This approach therefore:

- enables links to be made between human activities and the ecological requirements of the habitats or species, as required under Article 6 of the Habitats Directive;

- provides a consistent framework to enable relevant authorities in England to assess the effects of activities and identify priorities for management within their areas of responsibility; and

- is appropriately robust to take into account the development of novel activities or operations which may cause deterioration or disturbance to the interest features of the site and should have sufficient stability to need only infrequent review and updating by English Nature.

Sensitivity and vulnerability have been assessed in relation to the use of habitats by birds.

These broad categories provide a clear framework against which relevant authorities can assess activities under their responsibility. The more detailed information in Table 4 provides relevant authorities with a context against which to consider an assessment of 'significant effect' or any plans or projects which may affect the site and a basis to inform on the scope and nature of appropriate assessments required in relation to plans and projects. It is important to note that this advice is only a starting point for assessing impacts. It does not remove the need for the relevant authorities to consult English Nature formally over individual plans and projects where required to do so under the Regulations.

6.4 Update and review of advice

Information as to the operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species, for which the site has been designated, is provided in light of what English Nature knows about current activities and patterns of usage at the Poole Harbour European marine site. English Nature expects that the information on current activities and patterns of usage (which was used to derive table 4) will be supplemented as part of the process of developing the management of the site, and through further discussion with the relevant authorities. The option of zoning this information may be appropriate. As such, it is important that future consideration of this advice by relevant authorities and others takes account of changes in the usage patterns that have occurred at the site, over the intervening period, since the advice was issued. In contrast, the information provided in this advice on the sensitivity of interest features or sub-features (Table 5) is relatively stable and will only change as a result of an improvement in our scientific knowledge, which will be a relatively long term process. Advice for sites will be kept under review and may be periodically updated through discussion with relevant authorities and others to reflect significant changes in our understanding of sensitivity together with the potential effects of plans and projects on the marine environment.

6.5 Summary of advice on operations

6.5.1 Internationally important populations of regularly occurring Annex 1 species

In pursuit of the conservation objective for "habitats supporting internationally important populations of regularly occurring Annex 1 species" (Section 4.1), the relevant and competent authorities for Poole Harbour European marine site are advised to manage human activities within their remit such that they do not result in deterioration or disturbance to habitats or species for which the site has been selected, through any of the following:

- Removal and/or smothering of intertidal habitats

- Physical damage from siltation and/or abrasion
- Noise or visual disturbance
- Increased synthetic and/or non-synthetic toxic contamination
- Changes in nutrient and or organic loading
- Changes in turbidity and/or salinity
- Biological disturbance through the selective extraction of species

6.5.2 Internationally important populations of regularly occurring migratory species and waterfowl assemblage

In pursuit of the conservation objective for "habitats supporting the internationally important populations of regularly occurring migratory species and waterfowl assemblage" (Section 4.2 and 4.3), the relevant and competent authorities for Poole Harbour European marine site are advised to manage human activities within their remit such that they do not result in deterioration or disturbance to habitats or species for which the site has been selected, through any of the following:

- Removal and/or smothering of intertidal habitats
- Physical damage from siltation and/or abrasion
- Noise or visual disturbance
- Increased synthetic and/or non-synthetic toxic contamination
- Changes in nutrient and or organic loading
- Changes in turbidity and/or salinity
- Biological disturbance through the selective extraction of species

Reference to the non-tidal waters within the Poole Harbour have been included in this advice on operations. This is because this habitat is directly adjacent to the European marine site and critical for the survival and continued presence of the Annex 1 species within the European marine site.

6.6 Plans and Projects

Under Regulation 48(1), an appropriate assessment must be undertaken in respect of any plan or project which:

a. either alone or in combination with other plans or projects is likely to have a ***significant effect*** on a European Site; and
b. is not directly connected with or necessary to the management of the site for nature conservation.

This legal requirement applies to all European sites. Regulation 48 is also applied, as a matter of Government policy, to potential SPAs and listed Ramsar sites.

English Nature's 'Habitats regulations guidance note 1: The Appropriate Assessment (Regulation 48)', is at Appendix II for further information.

Tables 3 and 4 provide relevant authorities with a guide against which to initiate an assessment of the 'significance' of any plans or projects (and ongoing operations or activities) proposed for the site although this will only be the starting point for assessing

impacts and does not remove the need for relevant authorities to formally consult English Nature over individual plans and projects where required under the Regulations.

6.7 Review of consents

Regulation 50 of The Conservation (Natural Habitats, &c.) Regulations 1994 requires a competent authority to undertake a review of any existing consent or permission to which Regulation 48(1) would apply if were being reconsidered as of the date on which the site became a European site. Where a review is required under these provisions it must be carried out as soon as reasonably practicable. This will have implications for discharge and other consents, which will need to be reviewed in light of these objectives and may mean that lower targets for background levels of contaminants etc. will need to be set.

Table 3 Summary of operations which may cause deterioration or disturbance to the Poole Harbour European marine site interest features at current levels of use[7]

The advice below is not a list of prohibitions but rather a checklist for operations for discussion with the management group, which may need to be subject to some form of management measure(s) or further measures where actions are already in force. Examples of activities under relevant authority jurisdiction are also provided. Operations marked with a √ indicate those features that are considered to be highly or moderately vulnerable to the effects of the operations.

Standard list of categories of operation which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 birds	Internationally important populations of regularly occurring migratory species	Internationally important assemblage of waterfowl >20 000
Physical loss			
Removal (eg harvesting, coastal development)	√	√	√
Smothering (eg by artificial structures, disposal of dredge spoil)	√	√	√
Physical damage			
Siltation (eg run-off, channel dredging, outfalls)	√	√	√
Abrasion (eg boating, anchoring, trampling)	√	√	√
Selective extraction (eg aggregate dredging, entanglement)			
Non-physical disturbance			
Noise (eg boat activity)	√	√	√
Visual (eg recreational activity)	√	√	√
Toxic contamination			
Introduction of synthetic compounds (eg pesticides, TBT, PCBs)	√	√	√
Introduction of non-synthetic compounds (eg heavy metals, hydrocarbons)	√	√	√
Introduction of radionuclides			
Non-toxic contamination			
Changes in nutrient loading (eg agricultural run-off, outfalls)	√	√	√
Changes in organic loading (eg mariculture, outfalls)	√	√	√
Changes in thermal regime (eg power stations)			
Changes in turbidity (eg run-off, dredging)	√	√	√
Changes in salinity (eg water abstraction, outfalls)	√	√	√
Biological disturbance			
Introduction of microbial pathogens			
Introduction of non-native species & translocation			

Standard list of categories of operation which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 birds	Internationally important populations of regularly occurring migratory species	Internationally important assemblage of waterfowl >20 000
Selective extraction of species (eg bait digging, wildfowling, commercial & recreational fishing)	√	√	√

[7]This advice has been developed using best available scientific information and informed scientific interpretation and judgement (as at July 2000). This process has used a coarse grading of relative sensitivity, exposure and vulnerability of each interest feature to different categories of operation based on the current state of our knowledge and understanding of the marine environment. This is shown in the sensitivity and vulnerability matrices at Table 4. The advice is indicative only, and is given to guide relevant authorities and others on particular operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the site has been designated. The advice, therefore, is not a list of prohibitions but rather a check list for operations which may need to be subject to some form of management measure(s) or further measures where actions are already in force.

The precise impact of any category of operation occurring on the site will be dependant upon the nature, scale, location and timing of events. More detailed advice is available from English Nature to assist relevant authorities in assessing actual impacts and cumulative effects. Assessment of this information should be undertaken in the development of management of the site through wider consultation.

In accordance with Government policy guidance, the advice on operations is feature and site specific, and provided in the light of current activities and patterns of usage at the site as at [July 2000]. As such, it is important that future consideration of this advice by relevant authorities, and others, takes account of changes in usage patterns that have occurred at the site over the intervening period. Advice for sites will be kept under review and may be periodically updated through discussions with relevant authorities, and others, to reflect significant changes in our understanding of sensitivity together with the potential effects of plans or projects on the marine environment. The provision of the statutory advice given here, on operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species, for which the site has been designated, under Regulation 33(2), is provided without prejudice to specific advice given under Regulation 48(3) or Regulation 50 on individual operations that qualify as plans or projects within the meaning of Article 6 of the Habitats Directive.

6.8 Interest feature and sub-feature specific advice on operations

This section provides information to help relate general advice to each of the specific interest features of the Poole Harbour European marine site.

This advice relates to the vulnerability of the interest features and sub-features of the Poole Harbour European marine site as summarised in Table 3 and set out in more detail in Table 5. An explanation of the sensitivity of the interest features or sub-features follows with an explanation of their exposure and therefore their vulnerability to damage or disturbance from the listed categories of operations. This enables links between the categories of operation and the ecological requirements of the European marine site's interest features, as set out in Section 3, to be made.

6.8.1 Internationally important assemblage including internationally important populations of regularly occurring Annex 1 species and migratory species

i) Physical Loss

- The physical loss of areas of intertidal habitats may be caused directly through change of land use or indirectly as a consequence of changes to sedimentation processes (eg coastal defences) as well as via the effects of smothering by artificial structures (eg jetties) or the disposal of spoils. Activities or developments resulting in physical loss of the intertidal sub features are likely to reduce the availability of food and roosting habitat and thus be detrimental to the favourable condition of the SPA interest features including all qualifying Annex 1 and migratory species.

ii) Physical Damage

- The habitats of Poole Harbour both within the SPA and adjacent to it contribute to the "health" of the internationally important wildfowl populations including all qualifying species and their associated food supplies. Therefore, any operations or activities that would adversely affect these habitats may be detrimental to the species.

- Siltation caused by activities such as dredging and agricultural run off can cause localised increases in the levels of suspended sediments. The main environmental effects are those associated with increased turbidity levels. This can reduce the visibility of prey species to common tern.

- Abrasion caused by the wash of boats may be contributing to an increased rate of loss of saltmarsh habitats within the harbour. Although at present there is no evidence to show that this is occurring or likely to occur within this site, this is an area which requires further assessment and the sub-feature has been assigned a moderate vulnerability score.

- Both seabirds and wildfowl have the potential to become entangled in litter or fishing gear. However, current levels of use do not appear to present a threat at this site.

iii) Non-physical Disturbance

- Seabird colonies and overwintering waterfowl are disturbed by sudden movements of objects and increases in noise disturbance over or adjacent to feeding and roosting areas. This can have the effect of displacing birds thus reducing their feeding efficiency while increasing their energy requirements. This factor is a particular concern during prolonged periods of cold weather. During the breeding season disturbance to nesting common terns and Mediterranean gulls increases the risk of eggs, or chicks to be abandoned and/or increases the risk of predation.

  Areas subject to persistent noise and visual disturbance and particularly disturbance associated with the presence of people, severely reduces the roosting, feeding and nesting opportunities in parts of the Harbour. The major issues contributing to the high vulnerability of the birds to this category of operation appear to be the use of recreational craft and in particular jet skis, bait digging, wildfowling and wider access to the foreshore. The combined impact of these activities needs further investigation.

  The habitats within Blue Lagoon, which is located in the north eastern part of the site, are subject to relatively high levels of disturbance and as such are likely to be particularly vulnerable to operations and activities that in combination may lead to further increase in the overall disturbance levels. The Poole Harbour Aquatic Management Plan and Poole Harbour Management Policy both aim to limit activities likely to cause disturbance in sensitive areas within the SPA as well as the adjacent inshore waters. Although the zonation of activities adopted in these management plans is useful, effective enforcement remains an outstanding issue.

iv) Toxic contamination

- Seabirds and wildfowl are subject to the accumulation of toxins through the food chain or through direct contact with toxic substances when feeding. Their ability to feed can also be affected by changes in the palatability and / or the abundance of prey items caused by toxic contamination. There is no evidence to show that this is occurring or likely to occur within this site, however, this is an area which requires further assessment.

  The internationally important bird communities are sensitive to the impacts of acute pollution events, such as oil spills, due to their toxicity and smothering effects. These events can not only kill significant numbers of birds but may also cause serious long term reductions in food availability. Recovery from such incidents can often take years depending on recruitment rates and the dispersal of the toxic substance. Poole Harbour already has an oil spill contingency plan in place called "Poolspill". This will need to be kept under review and updated as appropriate.

  Birds can also be exposed to another source of toxic contamination through the re-mobilisation of contaminants such as TBT in the mudflats / sandflats. There is no evidence to show that this is occurring or likely to occur within this site, however, activities such as bait digging and dredgings may contribute to this category of operation and will need further investigation.

v) Non-toxic contamination

- Changes in organic or nutrient loading may have an impact on the availability of food for birds. Increases in nutrient inputs may lead to an increase the abundance of prey items however there may also be an associated increase in the growth of algal mats on the intertidal area. Such algal blooms can reduce the surrounding water quality by causing the removal of oxygen as the bloom decomposes or occasionally by the release of toxins. Such a deterioration in water quality may impact on marine communities causing a reduction in food availability. Algal blooms can also cause a reduction in water clarity, thereby reducing the visibility of prey items for common terns and avocets in particular.

  The parts of Poole Harbour that experience relatively low levels of flushing are particularly susceptible to the problems associated with eutrophication, these include Blue Lagoon, Holes Bay and Lychett Bay.

- Increases in turbidity levels caused by increases in suspended sediments brought about by activities such as dredging and disposal may under certain conditions have adverse effects on benthic communities that in turn may reduce food availability. For example, reduced light caused by increased levels of turbidity can reduce the productivity and extent of *Zostera* beds a food source for elements of Poole Harbour's internationally important waterfowl assemblage. In addition, increased turbidity levels will reduce visibility thus reducing the efficiency of active forging. The Annex 1 species common tern, Mediterranean gull and avocet may all be affected in this way.

- Salinity changes caused by outfalls within the harbour may have localised impacts on the benthic communities of intertidal habitats particularly in the parts of Poole Harbour that experience relatively low levels of flushing, these include Blue Lagoon, Holes Bay and Lychett Bay. Although at present there is no evidence to show that this is occurring to any significant extent within the site this is an area which requires further assessment.

v) Biological disturbance

- Over exploitation of the fisheries which support breeding common terns as well as elements of the internationally important waterfowl population within the European marine site and adjacent waters could adversely affect the favourable condition of the site. However, little information exists on this issue which requires further investigation.

- Bait digging can result in the selective extraction of species from the intertidal area. This may result in a localised reduction of food availability for feeding birds. The quantitative impacts of bait collection are unclear at present.

Table 4. Assessment of the relative exposure of interest features and sub-features of Poole Harbour European Marine site to different categories of operations based on current level of activities (July 2000)

Key: High= High exposure (3) Med =Moderate exposure (2) Low= Low exposure (1) None= (0)

Categories of operation which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 species		
	Shallow inshore waters inc. lagoons	Intertidal sediment communities	Saltmarsh communities
Physical loss			
Removal (eg harvesting, land claim)	Med	Med	Med
Smothering (eg by artificial structures, disposal of dredge spoil)	Med	Med	Med
Physical damage			
Siltation (eg run-off, dredging, outfalls)	High	High	Med
Abrasion (eg boating, anchoring, trampling).	None	Med	Med
Selective extraction (eg aggregate dredging, entanglement).	Low	Low	Low
Non-physical disturbance			
Noise (eg boat activity)	High	High	High
Visual (eg recreational activity)	High	High	High
Toxic contamination			
Introduction of synthetic compounds (eg Pesticides, antifoulants, PCBs)	Med	Med	Med
Introduction of non-synthetic compounds (eg heavy metals, hydrocarbons)	Med	Med	Med
Introduction of radionuclides	None	None	None
Non-toxic contamination			
Changes in nutrient loading (eg agricultural run-off, outfalls)	High	Med	Med
Changes in organic loading (eg mariculture, outfalls)	High	Med	Med
Changes in thermal regime (eg outfalls, power stations)	None	None	None
Changes in turbidity (eg run-off, dredging)	Med	Med	Low
Changes in salinity (eg water abstraction, outfalls)	Med	Med	Low

Categories of operation which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 species		
	Shallow inshore waters inc. lagoons	**Intertidal sediment communities**	**Saltmarsh communities**
Biological disturbance			
Introduction of microbial pathogens	Low	Low	Low
Introduction of non-native species & translocation	Low	Low	Low
Selective extraction of species (eg bait digging, wildfowling, commercial & recreational fishing)	Med	High	Med

Categories of operation which may cause deterioration or disturbance	Internationally important migratory species and waterfowl assemblage			
	Shallow inshore waters inc. lagoons	Intertidal sediment communities	Saltmarsh communities	Reedbed
Physical loss				
Removal (eg harvesting, land claim)	Med	Med	Med	Low
Smothering (eg by artificial structures, disposal of dredge spoil)	Med	Med	Med	Med
Physical damage				
Siltation (eg run-off, dredging, outfalls)	High	High	Med	Low
Abrasion (eg boating, anchoring, trampling).	None	Med	Med	Med
Selective extraction (eg aggregate dredging, entanglement).	Low	Low	Low	Low
Non-physical disturbance				
Noise (eg boat activity)	High	High	High	Low
Visual (eg recreational activity)	High	High	High	Low
Toxic contamination				
Introduction of synthetic compounds (eg Pesticides, antifoulants, PCBs)	Med	Med	Med	Med
Introduction of non-synthetic compounds (eg heavy metals, hydrocarbons)	Med	Med	Med	Med
Introduction of radionuclides	None	None	None	None
Non-toxic contamination				
Changes in nutrient loading (eg agricultural run-off, outfalls)	High	Med	Med	Med
Changes in organic loading (eg mariculture, outfalls)	High	Med	Med	Med
Changes in thermal regime (eg outfalls, power stations)	None	None	None	None
Changes in turbidity (eg run-off, dredging)	Med	Med	Low	Low
Changes in salinity (eg water abstraction, outfalls)	Med	Med	Low	Low
Biological disturbance				
Introduction of microbial pathogens	Low	Low	Low	Low
Introduction of non-native species & translocation	Low	Low	Low	Low
Selective extraction of species (eg bait digging, wildfowling, commercial & recreational fishing)	Med	High	Med	Low

Table 5. Assessment of the relative vulnerability of interest features and sub-features of Poole Harbour European Marine site to different categories of operations. Categories of operations to which the features or sub-features of the site are highly or moderately vulnerable are indicated by shading. Table also incorporates relative sensitivity scores used in part to derive vulnerability.[8]

Key

	High vulnerability	••••	High sensitivity
	Moderate vulnerability	•••	Moderate sensitivity
		••	Low sensitivity
		•	No detectable sensitivity

Categories of operations which may cause deterioration or disturbance	**Internationally important populations of regularly occurring Annex 1 species**			**Internationally important migratory species and waterfowl assemblage**			
	Shallow inshore waters inc. lagoons	**Intertidal sediment communities**	**Saltmarsh**	**Shallow inshore waters inc. lagoons**	**Intertidal sediment communities**	**Saltmarsh**	**Reedbed**
Physical Loss							
Removal (eg harvesting, land claim, coastal defence)	••••	••••	••••	••••	••••	••••	••••
Smothering (eg artificial structures, disposal of dredge spoil)	•••	•••	•••	•••	•••	•••	•••
Physical Damage							
Siltation (eg run-off, channel dredging, outfalls)	••	••	••	••	••	••	•••
Abrasion (eg boating, anchoring, trampling)	••	••	•••	••	••	•••	•••
Selective extraction (eg aggregate dredging, entanglement)	•••	•••	••	•••	•••	••	••
Non-physical disturbance							
Noise (eg boat activity)	••••	••••	••••	••••	••••	••••	•••
Visual presence (eg recreational activity)	••••	••••	••••	••••	••••	••••	•••

Categories of operations which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 species			Internationally important migratory species and waterfowl assemblage			
	Shallow inshore waters inc. lagoons	Intertidal sediment communities	Saltmarsh	Shallow inshore waters inc. lagoons	Intertidal sediment communities	Saltmarsh	Reedbed
Toxic contamination							
Introduction of synthetic compounds (eg pesticides, TBT, PCBs)	•••	•••	•••	•••	•••	•••	•••
Introduction of non-synthetic compounds (eg heavy metals, hydrocarbons)	•••	•••	•••	•••	•••	•••	•••
Introduction of radionuclides	••	••	••	••	••	••	••
Non-toxic contamination							
Changes in nutrient loading (eg agricultural run-off, outfalls)	••••	•••	••	••••	•••	••	••
Changes in organic loading (eg mariculture, outfalls)	••••	•••	••	••••	•••	••	••
Changes in thermal regime (eg outfalls, power stations)	•••	••	•	•••	••	•	•
Changes in turbidity (eg run-off, dredging)	•••	••	••	•••	••	••	••
Changes in salinity (eg water abstraction, outfalls)	•••	•••	••	•••	•••	••	••
Biological disturbance							
Introduction of microbial pathogens	••	••	••	••	••	••	••
Introduction of non-native species & translocation	••	•••	•••	••	•••	•••	••
Selective extraction of species (eg bait digging, wildfowling, commercial & recreational fishing)	••••	•••	•••	••••	•••	•••	•••

[8] English Nature's advice on operations is derived from an assessment combining relative sensitivity of the features or sub-features with information on human usage of the site (as at July 2000), to identify relative vulnerability to categories of operations. In accordance with Government policy guidance this advice is provided in the light of current activities and patterns of usage at the site. It is important therefore that future consideration of this advice by relevant authorities, and others, takes account of changes in the usage patterns at the site. In contract the sensitivity of interest features, or sub-features, is relatively stable with alterations reflecting improvement in our scientific knowledge and understanding. To this end, information on sensitivity has been included in this table to assist the management and advisory groups with the future management of the site.

7. Bibliography

ABP RESEARCH & CONSULTANCY LTD. 1999. *Natura 2000*: Good practice guidelines for ports and harbours operating within or near UK European marine sites. UK Marine SACs Project.

ANON. 1994. *The Conservation (Natural Habitats, &c.) Regulations*. Statutory Instrument No. 2716.

ANON. 1995. *Biodiversity: The UK Steering Group Report. Vol 1: Meeting the Rio Challenge. Vol 2: Action Plans.* London: HMSO

ANON. 1998. *Poole Harbour Management Policies*. Poole Harbour Steering Group

ANON. 1999. *Natura 2000: A review of the effects of fishing within UK European marine sites.* UK Marine SACS Project.

BROWN, A.E., BURN, A.J., HOPKINS, J.J., & WRAY, S.F. 1997. The Habitats Directive: selection of Special Areas of Conservation in the UK. *JNCC Report*, No. 270

BURGESS, N.D., & HIRONS, G.J.M. 1992. Creation and management of artificial nesting sites for wetland birds. *Journal of Environmental Management*, 34(4)**,** 285-295.

COLE, S.,CODLING, I.D., PARR, W., & ZABEL, T. 1999. *Natura 2000: Guidelines for managing water quality impacts within UK European marine sites.* UK Marine SACS Project.

CRAMP, S., BOURNE, W.R.P., & SAUNDERS, D. 1974. *The seabirds of Britain and Ireland*.

CRANSWICK ,P., POLLITT, M., MUSGROVE, A., & HUGHES B. 1999. *The Wetland Bird Survey 1997-98 Wildlife and Wader Counts*. British Trust for Ornithology, WWT, RSPB & JNCC.

DAVISON, D.M, & HUGHES, D.J. 1998. *Zostera Biotopes (volume I). An overview of dynamics and sensitivity characteristics for conservation management of marine SACs*. Scottish Association for Marine Science (UK Marine SACS Project).

DAVISON, N.C., & ROTHWELL, P.I. 1993. *Human disturbance to waterfowl on estuaries: conservation and coastal management implications and current knowledge.* Wader Study Group Bull.

DETR & THE WELSH OFFICE. 1998. *European marine sites in England and Wales. A guide to the Conservation (Natural Habitats &c) Regulations 1994 and to the preparation and application of management schemes*. London

ELLIOTT, M., and others. 1998. *Intertidal sand and mud flats and subtidal mobile sandbanks (volume II). An overview of dynamics and sensitivity characteristics for*

conservation management of marine SACs. Scottish Association for Marine Science (UK Marine SACS Project).

ENGLISH NATURE. 1998. *Advice on European marine sites: some common questions answered.* Peterborough.

ENGLISH NATURE. *Site Objective Statements and citation sheets for SSSIs, Dorset: English Nature*. Unpublished.

EN, SNH, EHS(DOE(NI)), CCW, JNCC & SAMS. 1998. *Natura 2000: European marine sites: Guidance relating to statutory conservation objectives and operations which may cause deterioration or disturbance.* Peterborough.

ENO, C. 1991. *Marine Conservation Handbook*. Peterborough: English Nature.

EU COMMISSION. 1996. *Interpretation Manual of European Union Habitats*

FAIRGRIEVE, R.E. 1994. *Poole Harbour Aquatic Management Plan*. Poole Harbour Steerimg Group.

FOWLER, S.E. 1999. *Guidelines for managing the collection of bait and other shoreline animals within UK European marine sites.* English Nature UK Marine SACS Project.

HISCOCK, K., and others. 1996. *Marine Nature Conservation Review: rationale and methods.* Peterborough: Joint Nature Conservation Committee.

HOLT, T.J., and others. 1995. The sensitivity of marine communities to man-induced change - a scoping report. *CCW Contract Science Report*, No. 65.

JONES, L.A., HISCOCK, K., & CONNOR, D.W. 2000. *Marine Habitat Reviews. A summary of ecological requirements and sensitivity characteristics for the conservation and management of marine SACs*. Peterborough: Joint Nature Conservation Committee.

SEAWARD, D.R. 1985. Survey of coastal saline lagoons. Dorset and south Devon. *Nature Conservancy Council CST Report*, No. 570

SNH, EN, EHS(DOE(NI)), CCW & JNCC. 1997. *Natura 2000: European marine sites: an introduction to management.* Perth.

Appendix I Matrix of relative vulnerability

Appendix II English Nature's 'Habitat regulation guidance note 1: The Appropriate Assessment (Regulation 48)'

ENGLISH NATURE

Habitats regulations guidance note

HRGN 1

Issued by Greg Smith, Environmental Impacts Team, English Nature. Tel: 01733 455210

The Appropriate Assessment (Regulation 48) The Conservation (Natural Habitats &c) Regulations, 1994

Introduction

1. This Guidance Note has been prepared to assist competent authorities and English Nature staff when undertaking the ***"appropriate assessment"*** required by Regulation 48 of the *Habitats Regulations 1994* implementing Article 6(3) of the *Habitats Directive* (92/43/EEC). Only the Courts can provide authoritative interpretation of the Regulations, but these notes have been developed in the light of practical experience and a close examination of the Regulations, the Habitats Directive and central government guidance, particularly in PPG 9.

When Does An 'Appropriate Assessment' Need To Be Undertaken?

Types of Proposal

2. Under Regulation 48(1), an appropriate assessment needs to be undertaken in respect of any plan or project which:

a. either alone or in combination with other plans or projects would be likely to have a ***significant effect*** on a European Site, and
b. is not directly connected with the management of the site for nature conservation.

3. Appropriate assessment is required by law for all European Sites (Regulation 48). A European Site is any classified SPA and any SAC from the point where the Commission and the Government agree the site as a Site of Community Importance. Appropriate assessment is also required, as a matter of Government policy, for potential SPAs, candidate SACs and listed Ramsar Sites for the purpose of considering development proposals affecting them. (PPG 9 paras 13 and C7).

Timing of the Assessment

4. An appropriate assessment needs to be undertaken in respect of a plan or project described above **before** any ***"competent authority"***:

a. decides to undertake the plan or project, in cases where no consent, permission or other authorisation is required. (Reg. 48(1));
b. decides to give any consent, permission or other authorisation for the plan or project. (Regs. 48(1) *et al*);
c. reviews the decision to undertake a plan or project or reviews consents, permissions or other authorisations for plans or projects that are incomplete. (Regs. 50(2) *et al* - see also English Nature Habitats Regulations Guidance Note No. 2);
d. decides whether to approve an application for development that would otherwise be permitted development. (Reg. 62(6)).

Significant Effects

5. The plan or project does not have to be located within the designated area. Significant effects may occur even if the plan or project is some distance away and even outside any consultation area defined by English Nature (PPG 9 paras 30-32). The effects may be direct or indirect, temporary or permanent, beneficial or harmful to the site, or a combination of these.

6. The initial determination of likely significance is intended to ensure that all relevant plans and projects likely to have a material effect on these internationally important sites are subject to an appropriate assessment. In all but the most clear cut cases, competent authorities are likely to need advice. English Nature will advise, on request, as to whether any particular plan or project may be likely to have a significant effect on any of these sites. If the decision as to whether or not the development would have a significant effect on the designated site is inconclusive, on the information available, the competent authority should make a fuller assessment; in doing so they may ask the developer or other parties for more information. (PPG 9 para C10).

Who Undertakes the Appropriate Assessment?

7. The appropriate assessment must be undertaken by the *competent authority*, as defined in Regulation 6(1) of the Habitats Regulations, which includes any Minister, Government Department, public or statutory undertaker, public body of any description or person holding a public office. The developer or proposer of the plan or project is required to provide relevant information. English Nature must be consulted, during the course of the assessment, but it is the

duty of the competent authority to undertake the assessment itself.

8. Most competent authorities will not have the technical expertise "in house" to assess the effects of the plan or project on the international nature conservation interests. Most will need to rely heavily on the advice, guidance and recommendations of English Nature, at each stage, including the scope and content of the assessment, the site's conservation objectives, the information required from the developer or proposer and the effects on the integrity of the site, all of which are discussed below. The appropriate assessment, in many cases, is likely to be an iterative process. In the simplest cases a general statement in a single consultation response from English Nature may suffice to enable the competent authority to complete the assessment. However, in most cases, it is envisaged that a more detailed response from, and dialogue with, English Nature is likely to be necessary.

What is an 'Appropriate Assessment'

9. It is a self contained step in a wider decision making process, required by the Habitats Regulations and described more fully in PPG 9, Annex C. Its conclusions must be based only on the scientific considerations under steps laid out in the Habitats Regulations. The assessment should not be influenced by wider planning or other considerations.

10. The Regulations do not specify how the assessment should be undertaken but describe it simply as "an appropriate assessment". This is taken to mean that the assessment must be appropriate to its purpose under the Regulations (and also the Directive, which originated the use of the term). Its purpose is to assess the implications of the proposal in respect of the site's "***conservation objectives***". The conclusions of the assessment should enable the competent authority to ascertain whether the proposal would adversely affect the integrity of the site.

Scope and Content

11. PPG 9 indicates that the scope and content of an appropriate assessment will depend on the location, size and significance of the proposed plan or project (PPG 9 box C10). The PPG indicates that English Nature will advise on a case-by-case basis. According to the nature conservation interests of the site, English Nature will identify particular aspects that the appropriate assessment should address. Examples given are hydrology, disturbance and land-take, but there are clearly many other potential matters that may need to be addressed in particular cases.

12. Procedures under the Habitats Regulations should be confined to the effects on the internationally important habitats or species for which the site is or will be internationally designated or classified, including any indirect effects on these interests, for example, via their supporting ecosystems and natural processes. Notwithstanding a favourable assessment in respect of the plan or project's effects on the international nature conservation interests for which the site was classified or designated, decisions to undertake or give consent to the plan or project may need to take account of other international, national, regional or local nature conservation interests in the light of other policy and legislative provisions. (PPG 9 paras 4, 18 and 27).

Environmental Assessment

13. The appropriate assessment is not the same as an environmental assessment under the provisions of the various *Environmental Assessment (EA) Regulations* (1988-95), in compliance with the Directive 85/337/EEC. In many cases, plans or projects that will be subject to an appropriate assessment will need an Environmental Statement (ES) to be prepared under the EA Regulations. (PPG 9 paras 38 and 39).

14. The ES will address all significant environmental effects. It will be appropriate to use the information assembled for the ES when carrying out the appropriate assessment under the Habitats Regulations. In view of this it would be helpful if the relevant ES clearly identified, under a specific subject heading, the likely significant effects on the internationally important habitats and/or species.

How is an Appropriate Assessment Undertaken?

Key Steps

15. Having established that an appropriate assessment is required, the following conclusions may be drawn (from the foregoing considerations and Government guidance) in respect of how it should be undertaken.

The Key Steps in an Appropriate Assessment

The competent authority:

I
Must consult English Nature

II
May consult the general public

III
Should clearly identify and understand the site's conservation objectives having regard to the advice of English Nature

IV
Should require the applicant to provide such information as may reasonably be required for the purposes of the assessment

V
Should identify the effects of the proposal on the habitats and species of international importance and how those effects are likely to affect the site's conservation objectives

VI
Should decide whether the plan or project, as proposed, would adversely affect the integrity of the site in the light of the conservation objectives

VII
Should consider the manner in which the plan or project is proposed to be carried out, whether it could be modified, or whether conditions or restrictions could be imposed, so as to avoid adverse effects on the integrity of the site

VIII
Should conclude whether the proposal, as modified by conditions or restrictions, would adversely affect the integrity of the site

IX
Should record the Assessment and notify English Nature of the conclusions

The Key Steps Explained

These key steps are explained in more detail below.

I. Consulting English Nature

16. Under Regulation 48(3) the competent authority must consult English Nature and must have regard to any representations made by English Nature. It may be inferred from PPG 9 (box C10 and para C9) that the competent authority would be expected to follow the advice of English Nature and normally to decide the case "*in accordance with the recommendations of English Nature*". If it does not do so, the competent authority should be prepared to explain its reasons. In cases where it proposes to agree to a plan or project notwithstanding a negative assessment, the competent authority is required to notify the Secretary of State in advance of any decision.

II. Consulting the General Public

17. Under Regulation 48(4) the competent authority may (if it considers it appropriate) take the opinion of the general public, on the implications of the proposal for the site's conservation objectives, using whatever steps they consider necessary. This may usefully include taking the opinion of others with relevant knowledge or expertise.

III. The Site's Conservation Objectives

18. The Regulations do not define what is meant by the site's conservation objectives but PPG 9 box C10 describes them as:

> "*the objectives.... / the reasons for which the site was classified or designated*"

English Nature will be able to give a clear statement of the site's conservation objectives in the light of its European Site Register entry (compiled by Government under Regulation 11), its citation, its reasons for recommendation, English Nature's knowledge of the site, national and international objectives for the international nature conservation interests (such as may be contained in the UK Biodiversity Action Plan) and any Management Plan or Management Statement for the site in so far as they relate to the interests for which the site was selected.

19. The site may also host habitats and/or species of Community interest (see Article 1 of the Habitats Directive) which are not mentioned in the European Site Register, the citation or the reasons for recommendation because they were not, at the time, a reason for classification or designation. Such features are not relevant to the appropriate assessment itself. Nevertheless their presence may be material to the decision as to whether or not to undertake or to consent to the plan or project.

IV. Requiring Further Information

20. The competent authority, taking the advice of English Nature where necessary, should require the applicant to provide such information as the competent authority may reasonably require for the purposes of making the assessment (Reg.48(2)). The information required may relate to any environmental information, or information about the proposal, relevant to the assessment and may include:

i. information already available, or
ii. new information from surveys that may need to be carried out, or
iii. data analysis, predictions, comparisons or assessments of a technical nature.

V. Identifying the Effects

21. Having regard to English Nature's advice and other consultation responses and, where relevant, taking account of the ES or any other information supplied by the developer/proposer, or otherwise available, the competent authority should identify what the effects of the proposal are likely to be. The effects considered should be those of the plan or project, either alone or in combination with other plans or projects, on the habitats and species of international importance and how those effects are likely to affect the site's conservation objectives. This will involve considering, for example, the nature, scale, geographic extent, timing, duration and magnitude of direct and indirect effects; considering the degree of certainty in the prediction of effects; considering all mitigating measures already contained in the proposal and the extent to which these measures are likely to avoid, reduce or ameliorate adverse effects on the international nature conservation interests. It is the residual effects, after mitigation, that are considered at this stage.

VI. Integrity of the Site

22. Having regard to English Nature's advice, other consultation responses and any other information available, the competent authority should decide whether the plan or project, as proposed, would adversely affect the integrity of the site, in the light of its conservation objectives. That is, whether the plan or project would adversely affect the "*coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified*" (PPG 9 box C10). An adverse effect on integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation.

23. The form of words used in Regulation 48(5) implies that a precautionary approach should be taken in considering effects on integrity, in line with the Government's principles for sustainable development (see *Sustainable Development: the UK strategy* page 33). Regulation 48(5) says that (subject to Regulation 49) projects may only proceed if the competent authority has ascertained that it **will not adversely affect** the integrity of the European site.

VII. Considering How To Avoid Adverse Effects

24. If the proposal would adversely affect the integrity of the site then, having regard to English Nature's advice, the competent authority should consider the manner in which it is proposed to be carried out and whether the plan or project could be modified, or whether conditions or restrictions could be imposed, so as to avoid the adverse effects. This may include, for example, changes to the siting, layout, timing or use of the proposal and the use of obligations or legal agreements. (Reg. 48(6)).

25. Compensatory measures that may be offered in the proposal at this stage, seeking to redress but not remove residual harm to the international interests (such as the provision of land for habitat creation purposes), should not be considered in the appropriate assessment, but may be considered later in the decision making process. (See Reg. 53).

VIII. Conclusion on Effects In The Light of Conditions and Restrictions

26. The competent authority should reassess the conclusions in the light of any such modifications, conditions or restrictions that may be agreed or imposed.

IX. Recording the Assessment

27. It would be advisable for this conclusion, and the reasons for it, to be recorded. English Nature should be notified of the conclusion of the appropriate assessment and the authority's decision as to the effects on the integrity of the site, before the authority undertakes the plan or project or issues any permission, consent or other authorisation (PPG 9 para 30).

28. The subsequent courses of action open to a competent authority are set out in Regulations 48(5) - (7), 49 and 54(3). The Regulations prohibit a competent authority from undertaking or giving consent to any plan or project unless the appropriate assessment concluded that it would not have an adverse effect on the integrity of the site, or specific criteria are met and the Secretary of State has been informed.

Good Practice Outline of an Appropriate Assessment Record

29. A suggested model or good practice outline record of an appropriate assessment is set out below. It may be contained in, for example, a planning officer's committee report or the minutes of a competent authority's decision. In other cases it may be a file note, clearly recording compliance with the Regulations. The record may take many different forms because each assessment needs to be appropriate to the type, scale, location and significance of the proposal and to the relevant nature conservation interests. It is provided here as a guide to assist competent authorities and English Nature staff, not as an authoritative legal formula. Any record made of an appropriate assessment should be copied to English Nature and to any other parties who were consulted on the assessment.

Title of Plan or Project/Application
Location of Plan or Project/Application
[With location plan attached showing relationship to the international designation]
International Nature Conservation Site
Nature/Description of Plan or Project/Application
[Including brief description of manner in which plan or project is proposed to be carried out]
Date Appropriate Assessment Recorded

This is a record of the appropriate assessment, required by Regulation 48 of the Habitats Regulations 1994, undertaken by [name of competent authority] in respect of the above plan/project, in accordance with the Habitats Directive (Council Directive 92/43/EEC). Having considered that the plan or project would be likely to have a significant effect on the [name of international site] and that the plan or project was not directly connected with or necessary to the management of the site, an appropriate assessment has been undertaken of the implications of the proposal in view of the site's conservation objectives.

*English Nature was consulted under Regulation 48(3) on [date] and their representations, to which this authority has had regard, are attached at Annex 1. The conclusions of this appropriate assessment * are/are not in accordance with the advice and recommendations of English Nature.*

**The applicant was required to submit further information reasonably necessary for this assessment on [date] under Reg.48(2) * and replied with the information on [date]/but did not supply the information.*

** The opinion of the general public was taken under Reg. 48(4) by way of *public advertisement/further consultation etc and the views expressed (attached at Annex 2) have been taken into account.*

The site's conservation objectives have been taken into account, including consideration of the citation for the site and information supplied by English Nature (see Annex 1). The likely effects of the proposal on the international nature conservation interests for which the site was designated may be summarised as:
[List of Effects]

The assessment has concluded that:
a) the plan or project **as proposed would not adversely affect the integrity of the site,*
or
b) the plan or project **as proposed would adversely affect the integrity of the site.*
[If (b):]
The imposition of conditions or restrictions on the way the proposal is to be carried out has been considered and it is ascertained that:
**a) conditions or restrictions cannot overcome the adverse effects on the integrity of the site.*
or
**b) the following conditions and/or restrictions would avoid adverse effects on the integrity of the site. [list conditions/restrictions]*

Signed ..... Date ..... (delete as appropriate)*
Annexes to also include relevant correspondence, minutes or meetings with English Nature, the applicant etc.

Appendix III List of Relevant Authorities

Borough of Poole Council

Dorset County Council

English Nature

Environment Agency

Poole Harbour Commissioners

Purbeck District Council

Southern Sea Fisheries

Wessex Water

ANNEX 36

Ramsar Information Sheet (RIS) for Poole Harbour Ramsar Site

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 31 March 1999

3. Country:

UK (England)

4. Name of the Ramsar site:

Poole Harbour

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

50 40 52 N 02 01 34 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Poole

Poole Harbour lies on the south coast of England between the town of Poole and the Isle of Purbeck.

Administrative region: Dorset

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 2439.2

Min. -2
Max. 5
Mean 0

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Poole Harbour is a bar-built estuary covering an area of nearly 4000 hectares. The Harbour occupies a shallow depression in the acidic, tertiary deposits towards the south-western extremity of the Hampshire Basin and has been formed over the last 5000 years by a rise in sea level. The unusual micro-tidal regime means that a significant body of water is retained throughout the tidal cycle. The site therefore exhibits many of the characteristics of a lagoon. There are extensive intertidal mudflats supporting internationally important numbers of waterfowl in winter. These are fringed on the landward side by saltmarshes or reedbeds. The river valleys of the lower Frome and Piddle support grazing marsh which is also important for wintering waterfowl. Much of the catchment along the western and southern shores comprises the internationally important Dorset heathlands and there are unusual transitions from saltmarsh to valley mire. The Harbour is separated from Poole Bay by the internationally important Studland dunes and the site includes Littlesea, a large dune slack lake also important for wintering wildfowl.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2, 3, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The site is the best and largest example of a bar-built estuary with lagoonal characteristics (a natural harbour) in Britain.

Ramsar criterion 2

The site supports two species of nationally rare plant and one nationally rare alga. There are at least three British Red data book invertebrate species.

Ramsar criterion 3

The site includes examples of natural habitat types of community interest - Mediterranean and thermo Atlantic halophilous scrubs, in this case dominated by *Suaeda vera*, as well as calcareous fens with *Cladium mariscus*. Transitions from saltmarsh through to peatland mires are of exceptional conservation importance as few such examples remain in Britain.

The site supports nationally important populations of breeding waterfowl including Common tern, *Sterna hirundo* and Mediterranean gull *Larus melanocephalus*. Over winter the site also supports a nationally important population of Avocet *Recurvirostra avosetta*.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
24709 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):
Species with peak counts in winter:

Common shelduck , *Tadorna tadorna*, NW Europe	2120 individuals, representing an average of 2.7% of the GB population (5 year peak mean 1998/9-2002/3)
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	1724 individuals, representing an average of 4.9% of the population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.
Species with peak counts in winter:

Pied avocet , *Recurvirostra avosetta*, Europe/Northwest Africa	1260 individuals, representing an average of 1.7% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
See Sections 21/22 for details of noteworthy species
Details of bird species occuring at levels of National importance are given in Section 22

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, sand, mud, clay, peat, sedimentary
Geomorphology and landscape	lowland, island, coastal, valley, floodplain, subtidal sediments (including sandbank/mudbank), intertidal sediments (including sandflat/mudflat), estuary, lagoon, cliffs
Nutrient status	no information
pH	circumneutral
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Everton, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/everton.html) Max. daily temperature: 14.0° C Min. daily temperature: 7.0° C Days of air frost: 32.5 Rainfall: 763.7 mm Hrs. of sunshine: 1750.7

General description of the Physical Features:

Poole Harbour is a bar-built estuary of nearly 4,000 ha, occupying a shallow depression towards the south-western extremity of the Hampshire Basin. The unusual micro-tidal regime means that a significant body of water is retained throughout the tidal cycle. The Harbour therefore exhibits many of the characteristics of a lagoon. There are extensive intertidal mudflats and, away from the north shore that has become urbanised through the growth of the town of Poole, there are fringes of saltmarsh and reedbed.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Poole Harbour is a bar-built estuary of nearly 4,000 ha, occupying a shallow depression towards the south-western extremity of the Hampshire Basin. The unusual micro-tidal regime means that a significant body of water is retained throughout the tidal cycle. The Harbour therefore exhibits many of the characteristics of a lagoon. There are extensive intertidal mudflats and, away from the north shore that has become urbanised through the growth of the town of Poole, there are fringes of saltmarsh and reedbed.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Maintenance of water quality (removal of nutrients)

19. Wetland types:

Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	55
Tp	Freshwater marshes / pools: permanent	23
H	Salt marshes	21
4	Seasonally flooded agricultural land	0.5
U	Peatlands (including peat bogs swamps, fens)	0.5

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Subtidal sediments are mainly fine muds and sands with hard substrate occurring locally in the vicinity of the channels which link the series of basins which make up the Harbour. Associated with the subtidal sands of the central Harbour are species rich communities dominated by beds of the tube-worm *Sabella pavonina*. Intertidal areas are again largely fine grain muds although coarser sediments occur in the north-east of the Harbour. Much of the middle and lower saltmarsh is dominated by common cordgrass *Spartina anglica*. Some retreat of the extent of this plant is now occurring in the Harbour. Smaller areas of more species rich upper saltmarsh also occur including areas dominated by sea-blite *Suaeda vera*. Both tidal, brackish reedbed and fresh water reedbed occur around the fringes of the Harbour. Brackish grazing marshes dominated by creeping bent *Agrostis stolonifera* occur at Keysworth and in the lower Frome and Piddle valleys there is freshwater grazing marsh. The marshes north of the River Piddle have particularly complex vegetation being influenced both by the nutrient-poor acidic water originating in the valley mire at Morden and the nutrient-rich water of the River Piddle. Low sandy cliffs and slopes occur at the edge of Poole Harbour, and the heathland beyond is included in the Dorset Heathland Ramsar site. The large mesotrophic dune slack lake called Littlesea, on the Studland peninsula, is included in both the heathland Ramsar site and Poole Harbour Ramsar site for different interests.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Scorzonera humilis, Potamogeton acutifolius, Alopecurus bulbosus, Oenanthe silaifolia, Myosurus minimus, Suaeda vera, Zostera angustifolia, Zostera noltei, Isoetes echinospora and *Elatine hexandra*

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Mediterranean gull , *Larus melanocephalus*, Europe	5 apparently occupied nests, representing an average of 4.6% of the GB population (Seabird 2000 Census)
Black-headed gull , *Larus ridibundus*, N & C Europe	1700 apparently occupied nests, representing an average of 1.3% of the GB population (Seabird 2000 Census)
Common tern , *Sterna hirundo hirundo*, N & E Europe	191 apparently occupied nests, representing an average of 1.8% of the GB population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	402 individuals, representing an average of 1.7% of the GB population (5 year peak mean 1998/9-2002/3)
Little egret , *Egretta garzetta*, West Mediterranean	91 individuals, representing an average of 5.5% of the GB population (5 year peak mean 1998/9-2002/3)
Spotted redshank , *Tringa erythropus*, Europe/W Africa	5 individuals, representing an average of 3.6% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	31 individuals, representing an average of 5.1% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Black-necked grebe , *Podiceps nigricollis nigricollis*, Europe, N Africa	3 individuals, representing an average of 2.5% of the GB population (5 year peak mean 1998/9-2002/3)
Dark-bellied brent goose, *Branta bernicla bernicla*,	1453 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	308 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Red-breasted merganser , *Mergus serrator*, NW & C Europe	401 individuals, representing an average of 4% of the GB population (5 year peak mean 1998/9-2002/3)
Water rail , *Rallus aquaticus*, Europe	12 individuals, representing an average of 2.6% of the GB population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	6323 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian curlew , *Numenius arquata arquata*, N. a. arquata Europe (breeding)	1570 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site.

Invertebrates.

Saldula setulosa, Piesma quadratum and *Limonia bezzii*.
The nationally rare sponge *Suberites massa* also occurs.

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Aquatic vegetation (e.g. reeds, willows, seaweed)
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Tourism
Traditional cultural
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site

Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Collection of non-timber natural products: (unspecified)	+	
Commercial forestry		+
Fishing: commercial	+	
Fishing: recreational/sport	+	
Marine/saltwater aquaculture	+	
Gathering of shellfish	+	+
Bait collection	+	+
Grazing (unspecified)	+	
Permanent pastoral agriculture	+	
Hunting: recreational/sport	+	
Sewage treatment/disposal	+	+
Harbour/port	+	
Oil/gas exploration	+	+
Oil/gas production		+
Transport route	+	+
Urban development		+
Military activities	+	+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Eutrophication	2	Nutrient enrichment is an issue, compounded by the site's physical characteristic of poor flushing. This is evident from the extensive algal mats covering intertidal mudflats during the summer months.		+	+
Introduction/invasion of non-native animal species	1		+	+	+

For category 2 factors only.
What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Eutrophication - There are planned investigations and improvements to the largest point-source discharge at the

wastewater treatment works under the Asset Management Plan AMP4 programme. Under the Urban Waste Water Treatment Directive, nitrate-stripping will be installed there. The planning application for this will be submitted in Autumn 2005.
Environment Agency Review of Consents procedure to be completed by 31 March 2006. This is reviewing the possible adverse effects of existing consents with a view to modify/revoke.

Is the site subject to adverse ecological change? YES

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+
National Nature Reserve (NNR)	+	+
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	+
Site management statement/plan implemented	+	
Special Area of Conservation (SAC)	+	
Management plan in preparation	+	

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Invertebrates (marine): surveys of subtidal ecology have been carried by P. Dyrynda, beginning in the 1980s.
Bait harvesting: Report into impact of bait havesting (1995) followed by report into bait-dragging (1996).
Miscellaneous.
Langston *et al*. (2003) is being used to inform the scope of the Review of Consents.
Poole Harbour Study Group was established to investigate various issues, particularly those which may arise as a result of the Asset Management Plan. To date the group has undertaken and published various studies including Thomas *et al*. (2004).

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are a number of facilities for bird watching with permanent bird hides and other visitor facilities at Arne, Studland, Brownsea Island and Upton Country Park. Conservation education is also taken forward at these sites through guided walks and school visits.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Infrastructure developments:

There are a number of marinas and boat havens along the northern shore of the Harbour. There are also some 2000 swinging moorings within the site. Most of the north shore of the site is urbanised and there is a caravan site adjacent to the Harbour at Rockley Sands.

Terrestrial and intertidal based recreation:

The site is not heavily used for bathing and beach recreation. There are numerous accesses for bird watching along the northern shore. Public access on the quiet southern shore is limited to Studland National Nature Reserve and a controlled access at Arne RSPB Reserve. There is also easy public access along the River Frome at Wareham allowing good viewing of birds on the grazing marsh.

Bait collection and fishing:

At a few places along the shoreline where there is good access the site is well used for bait-digging and angling. The eastern part of the site is a bass nursery area.

Water-based recreation:

Poole Harbour is heavily used for water sports recreation with sailing and other boating the most frequent activities. Water skiing, jet skiing, wind surfing, canoeing and angling also occur and are most frequent during the summer. The Zoning plan is attempting to address conflicts between users and other interests and has directed certain uses to areas where impacts on nature conservation are thought to be minimal.

A 'Navigate with nature' project, funded by the Department of the Environment, promoted best practice amongst Harbour users to reduce water pollution and disturbance to wildlife.

Wildfowling:

All wildfowling on the intertidal areas is under the control of the Dorset Wildfowling Association. Private estates also shoot on their own land - i.e. on saltmarsh above high water - but much of the shoreline above MHW is controlled by conservation organisations.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Aspinall, S & Tasker, ML (1990) *Coastal birds of east Dorset*. Nature Conservancy Council, Peterborough (Seabirds at Sea Team)

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP & Davidson, NC (eds.) (1998) *Coasts and seas of the United Kingdom. Region 9 Southern England: Hayling Island to Lyme Regis*. Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

Bird, ECF & Ranwell, DS (1964) Spartina saltmarshes in sourthern England. 4. The physiography of Poole Harbour, Dorset. Journal of Ecology, 52, 355-366

BP Petroleum Development Ltd & Heriot-Watt University (1986) Biological and chemical intertidal survey of Poole Harbour, June 1985 : final report.

Bristow, CR, Freshney, EC & Penn, IE (eds.) (1991) Geology of the country around Bournemouth. HMSO, London

Buck, AL (ed.) (1997) *An inventory of UK estuaries. Volume 6. Southern England*. Joint Nature Conservation Committee, Peterborough

Cook, K (2001) *Poole Harbour reedbed survey*. Poole Harbour Study Group, Arne

Council of Europe (1984) *Purbeck Heritage Coast, United Kingdom*. Council of Europe, Strasbourg (European Diploma Series, No. 21)

Covey, R (1998) Chapter 7. Eastern Channel (Folkestone to Durlston Head) (MNCR Sector 7). In: *Benthic marine ecosystems of Great Britain and the north-east Atlantic*, ed. by K. Hiscock, 199-218. Joint Nature Conservation Committee, Peterborough. (Coasts and Seas of the United Kingdom. MNCR series)

Cox, JHS (1996) Progress report of botanical monitoring : Keysworth grazing marshes, Poole Harbour SSSI, Dorset 1993-1995. English Nature internal report

Cranswick, PA, Waters, RJ, Musgrove, AJ & Pollitt, MS (1997) *The Wetland Bird Survey 1995–96: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge

Davidson, NC, Laffoley, D d'A, Doody, JP, Way, LS, Gordon, J, Key, R, Pienkowski, MW, Mitchell, R & Duff, KL (1991) *Nature conservation and estuaries in Great Britain*. Nature Conservancy Council, Peterborough

Department of Transport & Bristol Ecological Consultants Ltd (1991) Poole Harbour Crossing: NVC survey of saltmarsh in Holes Bay

Doody, P & Dennis, E (1984) *Poole Harbour – Dorset. An appraisal of ecological research*. Nature Conservancy Council, Huntingdon (Internal Report No. NC 220b)

Doody, JP, Johnston, C & Smith, B (1993) *Directory of the North Sea coastal margin*. Joint Nature Conservation Committee, Peterborough

Dyrynda, P & Lewis, K (1994) Sedimentary shores within Poole Harbour : bair harvesting and other human impacts. Report to English Nature

Dyrynda, P (1991) Benthic habitats and species of conservation interest within Poole Harbour (Southern England). Nature Conservancy Council

Dyrynda, PEJ (1987) Poole Harbour subtidal survey IV. Baseline assessment. Peterborough : Nature Conservancy Council. CSD Report , No 615

Edwards, B (2004) *The vegetation of Poole Harbour*. Poole Harbour Study Group, Arne

Gibbons, B (1996) Reserve focus – Brownsea Island, Poole Harbour. *British Wildlife*, **7**(6), 381-383

Haskins, L (1978) *The vegetational history of south-east Dorset*. Unpublished Ph.D. thesis, University of Southampton

Howard, S & Moore, J (1988) Surveys of harbours, rias and estuaries in southern Britain. Poole Harbour. Peterborough: Nature Conservancy Council. CSD Report. No 896

Howard, S & Moore, J (1989) Surveys of harbours, rias and estuaries in southern Britain : Poole Harbour. Volume I. Report. Field Studies Council. Oil Pollution Research Unit

Jensen, AC, Humphreys, J, Caldow, RWG, Grisley, C & Dyrynda, PEJ (2004) Naturalization of the Manila clam (*Tapes philippinarum*), an alien species, and establishment of a clam fishery within Poole Harbour, Dorset. *Journal of the Marine Biological Association*, **84**(5), 1069-1073

Langston, WJ, Chesman, BS, Burt, GR, Hawkins, SJ, Readman, J & Worsfield, P (2003) *Characterisation of the South West European Marine Sites: Poole Harbour Special Protection Area*. Marine Biological Association of the United Kingdom, Plymouth (Occasional publication, No. 12) www.mba.ac.uk/nmbl/publications/occasionalpub12.htm

McLeod, CR, Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ & Way, SF (eds.) (2004) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/SACselection

Morrison, SJ (2004) *Wader and waterfowl roost survey of Poole Harbour*. Poole Harbour Study Group, Arne

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

Pickering, H & others (1993) Poole Harbour aquatic management plan. Portsmouth University. Centre for Coastal Zone Management & Poole Harbour Management Core Group

Pickess, B & Underhill-Day, J (2003) *Important birds of Poole Harbour*. Poole Harbour Study Group, Arne

Poole Harbour Commissioners (1987) Poole Harbour Management Policies. (Revised 1991 and 1998)

Price, R & Pickess, B (1966) A preliminary survey of the reedbeds around Poole Harbour, Dorset. RSPB report

Radley, GP (1990) Sand dune survey of Great Britain. Site report No. 84. Studland.

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Saunders, C (1997) Navigate with nature: producer responsibility by another name. Journal UK CEED Bulletin, 49, 21-23

Sheader, M & Sheader, A (1990 Lagoon survey of the South Coast, Dorset Harbour to Eastbourne, 1989. Final report. Southampton University.

Shirt, DB (ed.) (1987) *British Red Data Books: 2. Insects*. Nature Conservancy Council, Peterborough

Slack, C (1991) Breeding gull and tern survey, Poole Harbour, 1991) Royal Society for the Protection of Birds (RSPB) report

Stewart, A, Pearman, DA & Preston, CD (eds.) (1994) *Scarce plants in Britain*. Joint Nature Conservation Committee, Peterborough

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content. Volume 3: Site accounts*. Joint Nature Conservation Committee, Peterborough www.jncc.gov.uk/UKSPA/default.htm

Thomas NS, Caldow RWG, McGrorty S, Durell, SEA le V dit, West, AD & Stillman, RA (2004) *Bird invertebrate prey availability in Poole Harbour*. Poole Harbour Study Group, Arne

Wiggington, M (1999) *British Red Data Books. 1. Vascular plants*. 3rd edn. Joint Nature Conservation Committee, Peterborough

---

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

ANNEX 37

St Albans Head to Durlston Head SAC Citation and
Natura 2000 Standard Data Form

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name: St Albans Head to Durlston Head

Unitary Authority/County: Dorset

SAC status: Designated on 1 April 2005

Grid reference: SZ006770

SAC EU code: UK0019863

Area (ha): 287.22

Component SSSI: South Dorset Coast SSSI, Townsend SSSI

Site description:

This site, with Isle of Portland to Studland Cliffs SAC, forms a single unit of cliffed coastline some 40 km in length that combines internationally important geological interest with a rich range of wildlife habitats. At this site the cliffs are formed of hard Jurassic limestones. These support species-rich calcareous grasslands with species that are scarce in the UK, such as wild cabbage *Brassica oleracea* var. *oleracea*, Nottingham catchfly *Silene nutans* and long-standing populations of early gentian *Gentianella anglica* numbering several thousands of plants. The maritime vegetation of the cliff faces and former quarried ledges includes species such as golden-samphire *Inula crithmoides*, rock samphire *Crithmum maritimum* and sea spleenwort *Asplenium marinum*.

The extensive species-rich examples of tor-grass *Brachypodium pinnatum* calcareous grassland are also important for the largest UK population of early spider-orchid *Ophrys sphegodes*. This species has declined very dramatically in the UK since the 1950s, in both population size and range.

Townsend supports calcareous grassland and scrub. This area and much of the cliff coast was formerly quarried for Purbeck stone and the underground galleries and associated quarry entrances provide important winter roosting sites for bats, including the rare greater horseshoe bat *Rhinolophus ferrum-equinum*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites). (Dry grasslands and scrublands on chalk or limestone, including important orchid sites)*
- Vegetated sea cliffs of the Atlantic and Baltic coasts

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Early gentian *Gentianella anglica*
- Greater horseshoe bat *Rhinolophus ferrumequinum*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0019863
Date of registration: 14 June 2005

Signed: Trevor Salmon

On behalf of the Secretary of State for Environment, Food and Rural Affairs

STANDARD DATA FORM for sites within the ‘UK national site network of European sites’

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the SPA homepage and SAC homepage on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

https://jncc.gov.uk/

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0019863**

SITENAME **St Albans Head to Durlston Head**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0019863

1.3 Site name

St Albans Head to Durlston Head

1.4 First Compilation date	1.5 Update date
1996-01	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

Date site proposed as SCI:	1996-01
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-1.991111111	50.59222222

2.2 Area [ha]:

283.4

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1230			28.34	0	M	A	C	A	A
6210	X		226.72	0	M	A	C	A	A

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site				Site assessment	
		Scientific								

G	Code	Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Gl
P	1654	Gentianella anglica			p	10000	10000	i		M	A	A	C	A
M	1304	Rhinolophus ferrumequinum			p	20	20	i		G	C	B	B	C

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N05	5.0
N23	3.0
N08	20.0
N09	72.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: limestone,nutrient-poor,sedimentary,basic 2 Terrestrial: Geomorphology and landscape: coastal,crags/ledges,slope 4 Marine: Geomorphology: cliffs

4.2 Quality and importance

Vegetated sea cliffs of the Atlantic and Baltic coasts for which this is considered to be one of the best areas in the United Kingdom. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) for which this is considered to be one of the best areas in the United Kingdom. which is considered to be the priority sub-type: ?important orchid sites?. Gentianella anglica for which this is considered to be one of the best areas in the United Kingdom. Rhinolophus ferrumequinum for which the area is considered to support a significant presence.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	G01		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	B02		I
H	A04		I

H	A04		I
H	K02		I
H	A01		I
H	I01		B

H	A02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [X] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the official European Union guidelines for the Standard Data Form (also referencing the relevant page number).

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Habitat representativity (abbreviated to 'Representativity' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent representatively	57
B	Good representatively	57
C	Significant representatively	57
D	Non-significant presence representatively	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK04	Site of Special Scientific Interest (GB)	67
UK05	Marine Conservation Zone	67
UK06	Nature Conservation Marine Protected Area	67
UK86	Special Area (Channel Islands)	67
UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

ANNEX 38

European Site Conservation Objectives for St Albans Head to Durlston Head SAC

European Site Conservation Objectives for St Albans Head to Durlston Head Special Area of Conservation Site Code: UK0019863

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats and habitats of qualifying species**
- **The structure and function (including typical species) of qualifying natural habitats**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia)* (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)*

S1304*. Rhinolophus ferrumequinum*; Greater horseshoe bat

S1654*. Gentianella anglica*; Early gentian

* denotes a priority natural habitat or species (supporting explanatory text on following page)

*** Priority natural habitats or species**

Some of the natural habitats and species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Habitats Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

ANNEX 39

European Site Conservation Objectives:
Supplementary Advice for St Albans Head to
Durlston Head SAC

European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

St Albans Head to Durlston Head Special Area of Conservation (SAC)
Site Code: UK0019863

M. Low (Natural England) 2016.

Date of Publication: 23 January 2019

About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to St Albans Head to Durlston Head SAC.

This advice should therefore be read together with the SAC Conservation Objectives available here.

Where this site overlaps with other European Sites, you should also refer to the separate European Site Conservation Objectives and Supplementary Advice (where available) provided for those sites.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England when developing, proposing or assessing an activity, plan or project that may affect this site'

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	St Albans Head to Durlston Head Special Area of Conservation (SAC)
Location	Dorset
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	287.22 ha
Designation Changes	Not applicable
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	South Dorset Coast SSSI Townsend SSSI
Relationship with other European or International Site designations	Isle of Portland to Studland Cliffs SAC is situated adjacent to this SAC at its eastern and western ends.

Site background and geography

This site runs contiguously with the Isle of Portland to Studland Cliffs SAC, and together they form a single unit of principally hard cliffed coastline some 40 km in length that combines internationally important geological interest with a rich range of wildlife habitats. At this site the cliffs are formed of hard Jurassic limestones. The species-rich calcareous grasslands found along this coast support communities of species that have become scarce in the UK. Of particular note are the long-standing populations of early gentian *Gentianella anglica* numbering several thousands of plants. These are found in extensive species-rich examples of tor-grass *Brachypodium pinnatum* calcareous grassland which are equally important for the largest UK population of early spider-orchid *Ophrys sphegodes*. This species has declined very dramatically in the UK since the 1950s, in both population size and range. Townsend, a small satellite site, supports both these species within a matrix of calcareous grassland and scrub.

South Purbeck has a very long history of quarrying. Both Purbeck and Portland Stone were quarried from beneath the surface in galleried tunnels called quarrs. The landscape around much of this SAC was dominated by the entrances to the tunnels as well as the extensive areas of spoil which surrounded each quarry entrance. The industry ceased in the 1960s (switching to open cast quarrying) but the surviving underground galleries and associated quarry entrances now provide important winter roosting sites for bats, including the rare greater horseshoe bat *Rhinolophus ferrum-equinum.*

The maritime vegetation of the cliff faces and former quarried ledges includes species such as golden-samphire *Inula crithmoides*, rock samphire *Crithmum maritimum* and sea spleenwort *Asplenium marinum*.

The SAC lies within the Dorset AONB, Purbeck Heritage Coast and the Jurassic Coast World Heritage Site. Geologically the underlying rocks of the WHS are from the Triassic, Jurassic and Cretaceous Periods. This geology, the geomorphological process that act upon it and the fossils it yields are recognised as being of outstanding universal value under the UNESCO World Heritage Site designation.

This SAC is entirely within National Character Area 136 South Purbeck.

This SAC is covered by the Durlston Head to Rame Head Shoreline Management Plan (SMP, Version 2, June 2011), a document which assesses coastal processes and change and makes recommendations for future action, broken down into small coastal 'Policy Units'. This SAC is covered by Policy Unit 5g01 Durlston Head to St Alban's Head.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

- ***H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts***

St Albans Head to Durlston Head, with Isle of Portland to Studland Cliffs, form a single unit of cliffed coastline some 40 km in length. The cliffs are formed of hard limestones, with chalk at the eastern end, interspersed with slumped sections of soft cliff of sand and clays. The cliffs support species-rich calcareous grassland with species that are rare in the UK, such as wild cabbage *Brassica oleracea* var. *oleracea*, early spider-orchid *Ophrys sphegodes* and Nottingham catchfly *Silene nutans*.

- ***H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites)***

This site hosts the priority habitat type "orchid rich sites". This site contains extensive species-rich examples of CG4 *Brachypodium pinnatum* calcareous grassland. The site holds the largest UK population of early spider-orchid *Ophrys sphegodes*. This species has declined very dramatically in the UK since the 1950s, in both population size and range

Qualifying Species:

- ***S1654. Gentianella anglica; Early gentian***

Gentianella anglica is endemic to the UK. Early gentian *Gentianella anglica* is an annual plant, occurring in calcareous grassland, mainly on steep, south-facing slopes. It grows on bare ground or in thin turf that is kept open by a combination of rabbit or sheep-grazing and trampling by livestock on thin droughted soils. In dense turf it becomes shaded out and unable to compete with other more vigorous species. It is found on a variety of substrates and in different habitats, but is particularly frequent in coastal grasslands. At most of its localities the vegetation is referable to 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*).

There has been a marked decline in *G. anglica* since 1970, largely because of the ploughing of old chalk grassland and the abandonment of grazing on some of the remaining grasslands. The species is very much associated with a short grazed sward.

This site on the Dorset coast, together with Isle of Portland to Studland Cliffs SAC, supports important long-standing populations the species.

- ***S1304. Rhinolophus ferrumequinum; Greater horseshoe bat***

The greater horseshoe bat *Rhinolophus ferrumequinum* is one of the largest bats in the UK. During the summer, they form maternity colonies, generally in large old buildings, and forage in pasture, edges of mixed deciduous woodland and hedgerows. Such mixed land-use, especially on south-facing slopes, favours the beetles, moths and other insects on which the bats feed. In winter they depend on caves, abandoned mines and other underground sites for undisturbed hibernation. A system or series of sites is required, offering a range of temperatures and air-flow patterns. Summer and winter roosts are usually less than 20-30 km apart. The bats are vulnerable to the loss of insect food supplies due to insecticide use, changing farming practices and the loss of broad-leaved tree-cover, and to the loss or disturbance of underground roost sites.

The greater horseshoe bat occurs throughout central and southern Europe and extends eastwards across Asia as far as Japan. However, it is a rare species in Europe, and has suffered a considerable

decline in central Europe. It has suffered a loss of over half its range in the UK. In the UK populations are close to the climatic limits for this species. The total UK population of approximately 12,900[1], (with upper limit of 18,500 and a lower limit of 9,200) can be divided into about twelve discrete populations, based on maternity (summer) roosts and their associated hibernation sites (hibernacula). Populations range in size from about 80 to 600 breeding females and there is relatively little interchange between populations. Until the early 20th century, the species occurred as far east as Kent, and the bats benefited from abandoned mine workings, but the sealing of old mines is likely to have seriously reduced its population.

The species' distribution within the SAC is spread between coastal caves created by past quarrying activity and, inland at various abandoned underground quarries (quarrs). Many of these are known and were the basis for adding this feature to the SAC. However, it is clear that there are currently unknown sites outside and possibly within the SAC boundary. It is also clear that the Greater Horseshoe bat meta-population extends beyond the SAC boundary with individuals commuting into and out of the SAC on an (in some recorded cases) daily basis. It is also evident that the SAC boundary does not cover the extent of foraging and commuting landscape features which are essential to the function of the meta-population. This population could be considered a recovering one, as a catastrophic timber treatment in the 1950s resulted in the destruction of a maternity roost, reportedly of some 13,000 GHB.

[1]Britain's Mammals 2018: The Mammal Society's Guide to their Population and Conservation Status

The SAC has been selected for classification as an example of a Greater Horseshoe Bat hibernation colony, although the species is recorded at the site throughout the year. Activity in the autumn suggests that the species may also use the SAC for mating. However, nothing is known about how many bats hibernate at the site or how they use the quarries/caves outside of the breeding season.

All species of bat present in the UK, including the Greater Horseshoe Bat, are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017, making it a 'European Protected Species'. A Licence may therefore be required for any activities likely to harm or disturb individual bats at any time of year.

Table A: Specific seasonality of SAC feature

The table below highlights in grey those months in which significant numbers of each mobile qualifying feature are most likely to be present at the SAC during a typical calendar year. This table is provided as a general guide only.

Unless otherwise indicated, the months shown below are primarily based on information relating to the general months of occurrence of the feature in the UK. Site-based evidence is available and has been used to indicate below that significant numbers of the feature are typically present at this SAC throughout the year.

Applicants considering projects and plans scheduled in the periods highlighted in grey would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration of mitigation to minimise impacts to qualifying bat features during the principal periods of site usage by those features. Thorough consideration should also be given to the impacts of activities that, whilst not directly affecting the SAC, will have an impact on functionally linked sustenance and commuting habitat/landscape features. The months which are *not* highlighted in grey are not ones in which the feature is necessarily absent, rather that the feature may be present in less significant numbers in typical years.

Furthermore, in any given year, features may occur in significant numbers in months in which typically they do not. Thus, applicants should not conclude, without recourse to further advice, that projects or plans scheduled in months not highlighted in grey cannot have a significant effect on the features. There may be a lower likelihood of significant effects in those months which nonetheless will also require prior consideration. Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional site-based surveys may be required.

Feature	Season	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site-specific references where available
Greater horseshoe bat	Hibernation													Pers comm local bat surveyors

Table 1: Supplementary Advice for Qualifying Features: H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution	**Extent of hard or soft cliff capable of supporting sea cliff vegetation**	Maintain and where appropriate, restore the total extent of the cliff system which is capable of supporting H1230 sea cliff vegetation of at least 7.8 Km.	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, **the full extent of the feature may need to be restored** from areas which are suitable for the feature but do not, for a variety of reasons, currently support it. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements, where given, may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of the Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis. The whole cliff system acts to provide the range and variation of vegetation types and mosaics including bare ground. Extent may be measured in different ways but there are issues with measuring area of vertical cliffs. Reduction in extent can include smothering cliff slope, cliff foot or cliff top surfaces by engineered or dumped materials or invasion by native or non-native plant species. The extent attribute has been calculated from measuring the length of the SAC on GIS systems.	
Extent and distribution	**Spatial distribution of the feature within the site**	Maintain and where necessary restore the distribution and continuity of the habitat and any associated transitions which reflects the natural	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		functioning of the cliff system	environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature. Transitions include cliff top and cliff foot transitions to terrestrial or marine habitats. The extent and distribution of this feature is overwhelmingly currently dictated by the geomorphological processes acting upon the coast/cliffs. Maintaining coast where these processes are intact and functioning must be a priority while restoration of processes to areas where these have been disrupted should be pursued whenever possible.	
Extent and distribution	**Future extent of habitat within the site and ability to respond to seasonal changes**	Maintain and where necessary restore active processes such that the system can adjust to longer-term natural change, including landward recession, and that fluctuations in the extent of vegetated areas to bare rock occur over time and space within the site	This recognises the need to allow for natural fluctuations in the extent and the distribution of this habitat feature, often during particular seasons and usually as a result of natural coastal processes. The need to allow the feature's communities to adapt to the landward recession of the cliffs requires that they are not hindered by inappropriate development/land use. Suitable land use should be secured in areas where recession is likely, through for example, agri-environment schemes or planning gain. Similarly, management of sediment availability and movement along the entire SAC, and beyond where functionally connected (sediment cells etc), must consider the impact(s) upon the	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review (SMP2) Durlston Head to Rame Head Shoreline Management Plan (Final)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			function of the cliffs' geomorphological processes.	
Structure and function (including its typical species)	**Geo-morphological naturalness**	Maintain and where necessary restore the geomorphological naturalness of the sea cliff system (from cliff top to foreshore connection with the intertidal zone.	The physical landforms associated with this habitat feature, and the processes that shape them, will be a primary influence on sea-cliff habitat. A key criteria for selecting SACs for this habitat feature was that they had no or minimal artificial modification and so demonstrate good geomorphological naturalness. Having a well-developed sea-cliff structure, shaped by natural geomorphological processes, will ensure the full range of natural variation can occur. Existing and new structures may interrupt natural geomorphological processes both at the structure's location and along the entire feature extent.	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review (SMP2) Durlston Head to Rame Head Shoreline Management Plan (Final) Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Structure and function (including its typical species)	**Presence of mosaic of microhabitats**	Maintain and Restore the diversity and range of microhabitats and bare areas resulting from active coastal processes/landslips	Each site will have a different configuration of geology and hydrology and maritime exposure, which will also change over time and space. The key aim is to maintain the full, naturally expected range of these in as natural a state as possible. Natural geomorphological processes drive the creation of most of these microhabitats (such as large and small scale landslipping, cracking, mudsliding, vegetation collapse temporary pool creation, etc). Some discussion of the processes is contained within the Shoreline Management Plan.	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review (SMP2) Durlston Head to Rame Head Shoreline Management Plan (Final) Rodwell, J. S. 1992 British Plant Communities Volume 3 – Grasslands and Montane Communities
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types CG1 - *Festuca ovina - Carlina vulgaris* lowland calcareous grassland	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. Rodwell, J. S. 1992 British Plant Communities Volume 3 – Grasslands and Montane Communities

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		CG3 - *Bromus erectus* grassland CG4 - *Brachypodium pinnatum* grassland CG5 - *Bromus erectus* - *Brachypodium pinnatum* grassland MC1 *Crithmum maritimum* – *Spergularia rupicola* crevice community MC5 *Armeria maritime* – *Cerastium diffusum* therophyte community MC8 *Festuca rubra* – *Armeria maritime* maritime grassland MC11 *Festuca rubra* – *Daucus carota* maritime grassland W21 *Crataegus monogyna* – *Hedera helix* scrub W22 *Prunus spinosa* – *Rubus fruticosus* scrub	help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations). The presence, composition, location and extent of maritime scrub, heath and/or grassland plus mosaics of the three, on cliff slopes or cliff tops will be determined by the interaction of natural geomorphological processes with exposure and soil characteristics and management where relevant. Areas of cliff that do not support these NVC communities should not be regarded as of a secondary level of importance. It is likely that lack of suitable management and/or past interventions (engineering, drainage, planting etc) have adversely affected the (semi) natural vegetation and restoration should be viewed as both possible and desirable. Natural community succession should allowed to evolve without human interference/intervention. Any areas where succession has been checked by a reversible intervention should be prioritised for remedial, restorative works. For a full understanding of the NVC communities listed left, see the relevant volumes of Rodwell's British Vegetation Communities. However, in the absence of these works, see the Wiki on NVC	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain or reduce the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread;	Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			It is not apparent that there is an issue with invasive native or non-native species on the cliffs of this SAC.	
Structure and function (including its typical species)	**Key structural, influential and distinctive species**	Maintain and where necessary restore the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat • Constant and preferential plant species of CG1 - CG3 CG4 CG5 MC1 MC5 MC8 MC11 W21 & W22 NVC communities which are the main component of the H1230 feature within the SAC • *Limonium recurvum: subsp. recurvum* Rock Sea-lavender • *Limonium recurvum subsp. portlandicum* Portland Sea-lavender • *Gentianella anglica* Early Gentian • Vascular plant assemblage(1) • Lichen and bryophyte assemblage (2)	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available.	Bryan Edwards, DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey for English Nature. (1) & (2) Natural England. Draft Favourable Condition Table for South Dorset Coast SSSI
Structure and function (including its typical	**Regeneration potential**	Maintain and where necessary restore semi-natural vegetation on the cliff-top (within and/or beyond the site boundary as	This is important to ensure that there is a continuous supply of seed-rich semi-natural vegetation material from the clifftops to feed the sea-cliff system below.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
species)		appropriate), and its connectivity with the lower cliff slopes.	As the top of the cliff slumps and recedes as a result of natural processes, the vegetation dropping onto the lower slopes should provide suitable material for their re-colonisation with native plant species from adjacent semi-natural habitats above. The creation of appropriate semi-natural habitat, without alien or exotic species, adjacent to the cliff zone can provide a buffer to the SAC feature.	
Supporting processes (on which the feature relies)	**Physical features supporting vegetation: crevices, ledges, isolated stacks etc**	Maintain the associated physical components of the vegetated cliff feature (crevices, ledges, isolated stacks) with changes to them determined by natural processes only	The cliff structure and geomorphological processes are major influences on sea-cliff vegetation. The SAC is a stretch of uninterrupted 'Hard' cliffs with vertical or very steep faces of sedimentary Portland and Purbeck Limestone rock. Modification of geomorphological processes on or adjacent to the cliff system may be detrimental to the continuation of natural processes.	
Supporting processes (on which the feature relies)	**Hydrology/ drainage**	At a site, unit and/or catchment level (as necessary, maintain and where necessary restore natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for the St Albans Head to Durlston Head SAC and sustaining the H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts. On these harder cliffs, hydrologically driven sliding and slumping are minor geomorphological drivers. The gradual erosion from moving water and the effects of freeze/thaw are significant mechanisms of cliff movement and fall. Erosion at the foot of the cliff by the sea is an additional major driver of cliff change.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Supporting processes (on which the feature relies)	**Maritime exposure including salt spray effects**	Maintain an appropriate degree of exposure to maritime effects, such as salt spray, both from regular inputs and storm events	Excessive exposure to salt spray can cause episodic die-back of sea cliff vegetation in some circumstances. Such die back can be a useful component in the cycle of succession in some locations, bringing about early successional niches where geomorphological processes are either hindered or slow (such as on hard cliff areas).	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	**Water quality**	Where the feature is dependent on surface water and/or groundwater, maintain and where necessary restore water quality and quantity to a standard which provides the necessary conditions to support the feature	Elements of the St Albans Head to Durlston Head SAC features are dependent on wetland habitats, such as runnels and seepages, supported by surface and/or ground water. Maintaining the quality and quantity of water supply will be critical, especially at certain times of year. Impacts upon the vegetated sea cliff feature will arise from localised inputs from small streams and/or surface water conditions (run off from fields, roads, leaking septic tanks etc). Main rivers do not play a role. Consideration must be given to any proposal's likely impact on very local water quality and quantity. Considerations should include, but not be limited to, nutrient status, chemicals pollution, silt/sediment content, biological oxygen demand (BOD), and impacts upon water availability. Poor water quality and inadequate quantities of water can adversely affect the structure and function of this habitat type. Typically, meeting the surface water and groundwater environmental standards set out by the Water Framework Directive (WFD 2000/60/EC) will also be sufficient to support the achievement of SAC Conservation Objectives but in some cases more stringent standards may be needed. Further site-specific investigations may be required to establish appropriate water quality standards for the SAC.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Supporting processes (on which the feature relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such	Air Pollution Information System (www.apis.ac.uk). Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the St Albans Head to Durlston Head SAC should be assessed for their air quality impacts on the feature. Site specific critical loads and levels for features can be found here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019863&SiteType=SAC&submit=Next Note that as the Vegetated sea cliffs of the Atlantic and Baltic Coasts (H1230) comprises a variety of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature relies)	**Cliff morphology, slope and elevation**	Maintain the natural processes that determine cliff morphology, slope and elevation	These physical components greatly influence the structure of this habitat type. Allowing natural dynamic processes to operate is crucial to providing optimal conditions which will allow the long-term conservation of this habitat feature. Though the hard vertical cliffs of the St Albans Head to Durlston Head SAC erode very gradually, interruption of these processes, through partial stabilisation or slowing of cliff erosion and recession rates, with artificial management of cliff slope (through, for example, pinning, bolting, meshing, drainage etc) does not produce naturally-occurring conditions which is likely to	South Devon and Dorset Coastal Advisory Group (SDADCAG), 2011 Shoreline Management Plan Review (SMP2) Durlston Head to Rame Head Shoreline Management Plan (Final)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			lead to undesirable changes in characteristic sea cliff vegetation	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance from human activity**	Control and minimise human access to cliffs	In some locations the level of access to the cliffs for mountaineering and coasteering may have reached levels at which a negative impact on the SAC feature (and other non-SAC interests – breeding seabirds for example) may be occurring. Climbing activity can damage ledges and the vegetation growing on them, scuffing of rock faces can have a deleterious effect on lichens and bryophytes. The type and frequency of activity needs to be monitored and action taken to reduce pressure where it is having an adverse impact on a feature's constituent vegetation communities. Climbing and some more 'offbeat' cliff activities (camping on suspended ledges) not only has an impact on the cliff face, but also (and possibly more importantly) on the area of cliff top immediately adjacent to the cliff, where trampling and abrasion from ropes etc is focussed.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Additional attribute **Supporting Processes – Disturbance from human activity** has been added				

Table 2: Supplementary Advice for Qualifying Features: H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain and where necessary restore the total extent of the feature to the maximum extent possible this should be no less than 227hectares	There should be no interventions that result in measurable reduction (excluding any trivial loss) in the extent and area of this feature. It is likely that the full potential extent of the feature will need to be restored as well as further habitat landward of the current SAC boundary (see below). The baseline-value of extent given has been taken from the Natura 2000 – Standard Data Form and represents the estimated feature extent at designation. The extent data was gathered from site-based surveys. Area measurements given are approximate and accuracy depends on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. This feature, like most on the coast, is susceptible to natural dynamic processes, there will be acceptable variations in its extent through natural fluctuations, especially through natural geomorphological processes resulting in cliff failure and collapse. Given the linear nature of this feature and the often narrow extent between cliff edge and other land uses it will be highly desirable to seek creation of further extent of this feature outside the SAC boundary to provide both a continuation of the connectivity of the feature along the coast and to provide 'fall back' habitat for certain of the SAC features and the communities that they comprise.	Natura 2000 – Standard Data Form DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. Various surveys held by Natural England and the Dorset Environmental Records Centre (DERC)
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain and where necessary restore the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	This feature forms by far the largest element of the entire SAC, some 227 ha of the total 283 ha (72% or so). This is due to suitable substrate occurring consistently along the entire length - limestones with smaller areas of acid clay caps and drift in valleys,	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	Various surveys held by Natural England and the Dorset Environmental Records Centre (DERC)
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification types CG1 *Festuca ovina - Carlina vulgaris* grassland CG3 *Bromus erectus* grassland CG4 *Brachypodium pinnatum* grassland CG5 *Bromus erectus – Brachypodium pinnatum* grassland	This habitat feature comprises a number of associated semi-natural calcareous vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining and/or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. Various surveys held by Natural England and the Dorset Environmental Records Centre (DERC)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation: proportion of herbs (including Carex spp)**	Maintain and where necessary restore the proportion of herbaceous species within the range 40%-90%	A high cover of characteristic herbs, including sedges (Carex species) is typical of the structure of this habitat type. The preferred and 'classic' mechanism by which this is achieved here is by extensive cattle, and sometimes, sheep grazing. Interventions or changes of use that may impinge upon or threaten the continuation of such management must be deterred. Conversely changes which will enhance the ability to graze and properly manage the constituent grasslands (as long as they do not have other negative impacts) should be encouraged.	Natural England, Draft Favourable Condition Table, South Dorset Coast SSSI.
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain and where necessary restore the abundance of the typical species listed below to enable each of them to be a viable component of the Annex 1 habitat • Constant and preferential plant species of CG1, CG3, CG4 and CG5 NVC communities which are the main component of the H6210 feature within the SAC • Early Spider Orchid *Ophrys sphegodes* • Early Gentian *Gentianella angelica* • Vascular plant assemblage(1) • Key lepidoptera species including Lulworth Skipper	See generic text for this feature in Table 1.	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature. Various surveys held by Natural England and the Dorset Environmental Records Centre (DERC) (1) & (2) Natural England, Draft Favourable Condition Table, South Dorset Coast SSSI.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Thymelicus acteon and Adonis Blue *Polyommatus bellargus* • Lichen and bryophyte assemblage (2)		
Structure and function (including its typical species)	**Vegetation: undesirable species**	Reduce or eliminate the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread. European gorse (when becomes too dense/dominant); Holm Oak; Tor grass (*Brachypodium pinnatum*)	There will be a range of undesirable or uncharacteristic species which, if allowed to colonise and spread, are likely to have an adverse effect on the feature's structure and function, including its more desirable typical species. These may include invasive non-natives such as Cotoneaster spp, or coarse and aggressive native species which may uncharacteristically dominate the composition of the feature. Along the coast common or European gorse (*Ulex europaeus*) can be a major problem. It is a component of most of the coastal grasslands, especially where acidic 'clay with flints' or head deposits occur. If left unmanaged it can spread rapidly and take over entire parcels of land. Holm oak (*Quercus ilex*) is often a naturalised escapee of formal planting. In this SAC it is centred on the area around Durlston Castle and grounds and has encroached upon grassland areas. Management should seek to contain and in places push back Holm oak to encourage grassland regeneration. Tor grass is a complicated undesirable species as it also forms the key plant species in the life cycle of the rare and localised Lulworth Skipper (*Thymelicus action*). This species lays its eggs on, feed on and overwinters (as a caterpillar) within the dense tussocks of this grass. Its negative impacts are that it forms a dense tussocky mat of grass, spreading by aggressive rhizomes. It can smother other grasses and herbs leading to near monocultures. It is also only palatable to cattle early in the season. Consistent, spring grazing by cattle seems to keep the species	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			in check. There is ongoing research looking at reasons for its vigour and mechanisms to control it	
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain and where necessary restore the pattern of natural vegetation zonations/transitions between the various NVC calcareous grassland communities which form the feature.	The transitions/zonations between adjacent calcareous vegetation communities are, on this SAC, related to naturally-occurring changes in soil, aspect, slope and significantly the stress under which the community survives – this can be due to drought (thin soils) sea spray and wind (close to cliff edges and windy gullies etc). These 'ecotones' retain characteristics of each bordering community and add value in often containing species not found in the adjacent communities. They can also contain species found in other N2K features, in this case a transition between pioneer calcareous grassland communities and certain species of the vegetated sea cliff feature, including certain lichens and bryophytes. Retaining such transitions provides further diversity to the habitat feature, and can support additional distinctive flora and fauna, particularly invertebrates.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature. This feature is generally characterised by thin, nutrient poor, highly porous soils. Some of the very best areas for key species (orchids, gentian etc) are at an early successional stage and comprise what are known as ‘skeletal’ soils having a low organic content and favouring annual or highly adapted species, especially where these occur in highly stressed clifftop locations. Threats to such soils are enrichment/eutrophication,	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			smothering under imported soils or waste etc. Additionally species such as common gorse can aggressively colonise such soils and relatively quickly significantly alter their nutrient status and chemistry (see above). While the overriding aim should be to retain the naturally occurring soils of this SAC through non-intervention, in some places it may be appropriate, after due consultation with Natural England, to restore the soil to an early state through mechanical intervention (turf stripping, soil stripping etc).	
Structure and function (including its typical species)	**Supporting off-site habitat**	Maintain and where necessary restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the feature	The structure and function of the semi-natural dry grasslands and scrubland facies: on calcareous substrates habitat, including its typical species is, strengthened by a network of adjacent or nearby semi-natural habitats (mostly of similar calcareous grassland) some of these are remnant grassland Sites of Nature Conservation Interest (SNCIs) and may be of comparable quality to the SAC feature. Others are more recent, often created or restored through successive agri-environment scheme interventions. The SAC feature relies on the continued presence of these areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. This supporting habitat may be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment. In this coastal setting, these adjacent habitats are also the future coastal grassland and will provide refuge to the feature as the cliffs recede beyond the current landward boundary of the SAC designation.	www.magic.gov.uk (Agri-environment scheme and priority habitat layers) Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) SNCI data held by the Dorset Environmental Records Centre (DERC)
Structure and function (including its	**Functional connectivity with wider**	Maintain and where necessary restore the overall extent, quality and function of any supporting	There is a need at this site to maintain and restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. This need not only includes the	www.magic.gov.uk (Agri-environment scheme and priority habitat layers)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)	**landscape**	features within the local landscape which provide a critical functional connection with the site	connection of the coast into its backing ecological hinterland, but also the retention and, in places, need for enhancement of the linear connectivity of the SAC itself where the area of semi-natural habitat is tightly 'squeezed' between cliff top and adjacent land use (this is down to a few tens of meters in places). These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) SNCI data held by the Dorset Environmental Records Centre (DERC)
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain and where necessary restore the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change while retaining the same basic structure and ways of functioning. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that this site is considered to be vulnerable overall but are a lower priority for further assessment and action. Individual species may be more or less vulnerable than their supporting habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable Such environmental changes here may include changes in sea	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England Available at http://publications.naturalengland.org.uk/publication/4954594591375360

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			levels, storminess, precipitation and temperature all of which appear to already be increasing the rate at which the cliffs are eroding and cutting back into coastal habitat. This is already affecting the extent of some grassland and possibly the species feature (early gentian). Other impacts could include distribution, composition and functioning of this feature within the site. The vulnerability and response of features to such changes will vary, even within this single site. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.	
Supporting processes (on which the feature relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales.	Air Pollution Information System (www.apis.ac.uk). Site specific critical loads and levels for features can be found here Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the St Albans Head to Durlston Head SAC should be assessed for their air quality impacts on the feature. Site specific critical loads and levels for features can be found here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019863&SiteType=SAC&submit=Next Note that as the H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites) comprises a variety of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance from human activity**	Control and minimise excessive human access to grasslands	In some locations the level of access along the clifftop grasslands by the public may have reached levels at which a negative impact on the SAC feature (and other non-SAC interests) may be occurring. The sheer volume of footfall in some locations, coupled with the limited 'depth' of the SAC (pinch points where break of cliff and landward boundary are as little as a couple of meters apart) can result in rapid destruction of sward to bare soil/chalk substrate in a matter of days. This is especially likely to occur when falls close sections of existing coast path/other access. The type and frequency of activity needs to be monitored and action taken to reduce pressure where it is having an adverse impact on a feature's constituent vegetation communities. Location of access points, signage, car parks capacity and charging and licencing of activity providers should all be considered as mechanisms which can create (or reduce) access pressure in specific locations.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
hSupporting processes (on which the feature relies)	**Conservation measures**	Maintain and where necessary resume the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain and/or restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. This is undertaken by a range of landowners, charities and other bodies. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI management agreements and agri-environment scheme documents.	Durlston Country Park NNR Management Plan. DWT Townsend Nature Reserve Management Plan. Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Additional attribute **Supporting processes – disturbance** from human activity has been added				

Table 3: Supplementary Advice for Qualifying Features: S1304. *Rhinolophus ferrumequinum*; Greater horseshoe bat

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance - hibernation site**	At least maintain and, if possible, increase the abundance of the hibernating population to a level which is above 180 – 200 bats. Avoid deterioration from its current level as indicated by the latest mean peak count or equivalent.	This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's size or presence has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period (generally at least 10 years). The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts or breeding surveys. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise that the figures	This attribute is monitored by the Dorset Bat Group and periodically reported upon.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			stated are the best available. The meta-population of Greater Horseshoe Bats is spread across a number of sites both within and outside the SAC. Hibernation is the part of the life cycle most adequately represented by the SAC's component roosts. Counts in recent years indicate that somewhere around 180 – 200 GHB are using the SAC at the highest season of occupation (hibernation). This possibly represents a reduction in the longer term, due to improvements made at the main maternity roost to enhance its favourability as a hibernation roost. Outside the SAC boundary, but within South Purbeck, it is estimated that around 250 – 280 GHB are using the quarries outside the SAC	
Supporting habitat: extent and distribution	**Distribution of supporting habitat**	Maintain and where necessary restore the distribution and continuity of the feature and its supporting habitat, across the site	A contraction in the range, or geographic spread, of the feature across the site will reduce its overall distribution, and may undermine its resilience to adapt to future environmental changes. Contraction of supporting habitat(s) will also have a negative impact on how well the species feature is able to occupy and use the landscape within and outside the site. A major element of securing the favourable conservation status of the greater horseshoe bat feature is the ongoing research and restoration of roosts across South Purbeck. Many known sites (and doubtless some to be re-discovered) comprise abandoned underground quarries (quarrs), most of which are in a state of general decay and require management to ensure their continued function as roosts. Planning applications which include old quarrs within their boundary should ensure the continued availability of these sites to bats and if their state is deemed sub-optimal restoration should be conditioned into any permission as an element of 'net gain'.	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			In the wider countryside, proposals which sever the networks of hedges, streams etc which connect the various bat roosts together should be avoided or, if absolutely necessary, planning conditions should ensure there is a net gain for the GHB. Generally, the re-enforcement of hedges (gapping up, new hedges, thicker hedges), enhancement and planting of new copses and woodland belts, removal/reduction of unnecessary lighting (removal, cowls, timers etc) are all positive actions when taken under guidance from advisers with knowledge of bat requirements. In some cases, new bespoke roosts could be constructed to re-enforce the roost network.	
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Maintain and where necessary restore the total extent of the habitat which support the feature outside the immediate SAC boundary which merely reflects the location of some (but by no means all) roosts.	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. The extent of the St Albans Head to Durlston Head SAC usefully incorporates important hibernation roosts, swarming areas and a limited coastal strip of foraging/commuting habitat. However, the nature of the greater horseshoe bat meta-population's distribution across South Purbeck (and beyond) means that the actual function and favourable conservation status of the bats is reliant on the maintenance/restoration and ongoing management of the network of low intensity grasslands, hedges, small copses and water bodies, not to mention the significant number of roosts found across South Purbeck	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure/ function	**External condition of underground site – hibernation roost**	Monitor, maintain and where necessary and practicable improve the structural integrity of the roost space.	Damp, draught and increases in light levels are likely to have a negative effect on the temperature and humidity of the roost. All the roosts within the SAC are within quarried caves, part of the now abandoned Purbeck stone underground quarrying industry (stone is now reached via open quarries). Many of these have been closed and unmaintained for decades and some have fallen into a poor state of repair (though currently this may be more a barrier for human access to monitor than access for the bats). The systems of caves (man-made) and quarrs that the bats use to hibernate and roost are not all fully understood in terms of connectivity and extent. In many cases there is always the chance of roof collapse and very little that can be done about it. However, maintaining the structural integrity of the slide and pit into which access to the quarry is gained is an important (and costly) intervention. Several of the quarries within the SAC (and further examples outside of it) have been, over the last 30 or so years, been externally structurally restored and a second round of projects aims to clear the often rubble and silt filled slide in the underground sections.	This attribute will be periodically monitored as part of Natural England's site condition assessments
Supporting habitat: structure/ function	**Flight lines from roost into surrounding habitat and foraging areas**	Maintain and where necessary restore the presence, structure and quality of any linear landscape features which function as flight lines. Flight lines should remain unlit, functioning as dark corridors.	Non-breeding greater horseshoe adults can forage up to 4km from roost sites. For breeding females and juveniles, the distance tends to be roughly half this i.e. 2km (English Nature, 2003). Greater horseshoes commute and forage along linear features, over grazed pasture and in woodland. Permanent pasture and ancient woodland linked with an abundance of tall bushy hedgerows is ideal supporting habitat for this species. (English Nature, 2003).Flight lines will extend beyond the designated site boundary into the wider local landscape. The coastal strip that the SAC covers is well provided with flight lines and landscape features, especially around Durlston Country Park. Small valleys running from the coast inland provide sheltered flying conditions, even in poor weather.	This attribute will be monitored using aerial photography to assess the connectivity afforded along flight lines and their continued function.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			All these features should be maintained and not compromised by changes in land management and/or developments. Beyond the SAC, South Purbeck is criss crossed by hedges, stone walls and trackways and small copses and areas of semi/unimproved grassland provide good foraging. Migration to and from maternity roosts some distance north (up to 35km) requires an extensive network of landscape features and could be considered vulnerable to inappropriate developments or land use changes. To ensure Favourable Conservation Status of this species in this part of Dorset, a strategic approach is needed which looks at the species' requirements for each stage of the life cycle.	
Supporting habitat: structure/ function	**Internal condition of cave - hibernation**	Maintain and restore where necessary the quarries/quarrs which provide the appropriate range of light levels, humidity, temperature and ventilation.	The preferred internal temperature of greater horseshoe hibernation roosts is generally above 7˚C between 7˚-10˚C (Dietz et al, 2010). The quarries and quarrs of this SAC (and beyond) provide a range of temperature, humidity and light levels that suite the GHB population. Up until now, interventions have been based on removing accumulated debris/mud from the quarr slides and entrances to enable access for monitoring which will also restore a degree of ventilation to the galleries in which the bats hibernate and roost.	
Supporting habitat: structure/ function	**Roost access**	Maintain and where necessary restore the number of access points to the roost at an optimal size and in an unlit and unobstructed state, with surrounding vegetation providing sheltered flyways without obstructing accesses	The greater horseshoe bat populations within the SAC occupy abandoned quarries (quarrs) which have access usually (as far as is understood) via the main original entrance to the quarr. This is usually a 3-4 feet wide by 6-7 feet high entrance. Some of these are now smaller due to build-up of debris that has fallen into the entrance from the surrounding pit walls and down the trackway (slide) into the quarr. The relative complexity of the galleries within the quarr afford the bats the ability to move around depending on external weather conditions to maintain their desired temperature/humidity.	This attribute will be periodically monitored as part of Natural England's site condition assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure/ function	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, within typical values for the supporting habitat	Soil supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with the supporting habitat of this Annex II feature. Treatment of the soil with certain insecticides will have an impact on the insect biomass available to the bats when foraging over those fields.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain and where necessary restore the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	See generic text for this attribute in Table 2 Important aspects of this feature's resilience lies off of the SAC and within the wider South Purbeck landscape. Much of the South Purbeck landscape should be thought of as supporting, functionally linked habitat for the highly mobile Greater Horseshoe bat feature. Landscape scale infrastructure and development (for example new roads, housing estates, and industrial/agricultural structures) has the ability to sever habitats, as does the introduction of new lighting.	Natural England 2015 *Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England.* . Available at http://publications.naturalengland.org.uk/publication/4954594591375360 SHERWIN, H.A., MONTGOMERY, W.I. & LUNDY, M.G. 2013. *The Impact and Implications of Climate Change for Bats*. Mammal Review **43**, p171-182. VOIGT, C.C., SCHNEEBERGER, K., VOIGT-HEUCKE, S. & LEWANZIK, D. 2011. *Rain Increases the Energy Cost of Bat Flight*. Biology Letters **7**, p793-795. Site Improvement Plan: Portland-Studland & St Albans-Durlston

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				(SIP178)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants of prey) and reducing supporting habitat quality and population viability of this feature. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. Air quality levels and loads for this SAC can be found here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019863&SiteType=SAC&submit=Next. However, there are no specific levels or loads allocated to the Greater Horseshoe bat with the only figures being a proxy reached by using the Critical levels/Loads for the supporting habitats As general rules, processes that produce significant levels of air pollution should not be located close to **any** known or	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) www.apis.ac.uk

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			suspected Greater Horseshoe bat roost. This would include processes creating high levels of dust.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Conservation measures**	Maintain and where necessary restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain and restore this feature at this site. Such measures may include, but are not restricted to, maintenance of cave entrances, establishing/maintaining sympathetic grazing regimes to ensure adequate supply of invertebrate prey or ensuring flyways are maintained across the landscape. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. It is clear that the meta-population (i.e. the sum of the small individual but connected and inter-related populations) of greater horseshoe bat is dependent upon a good landscape scale structure to enable not only foraging from each roost, but also the essential movements between roosts. The state of the habitat networks outside the SAC area are variable in quality and actually contain roosts which are an integral component of the greater SAC bat feature population.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance from human activity**	Control and minimise human access to roost sites	Human access, by suitably qualified and licenced ecologist, is useful to monitor the state of the hibernation population and to monitor conditions within the quarrs. However, there is also a danger from unregulated access to these quarrs which have, in recent years, received the attention of potholers and 'adventurers' who have illegally accessed the quarrs without any consideration (or probably knowledge of) their impact on any bats residing in the site – this is especially an issue if access is made in the winter when bats are hibernating. Some quarrs are gated/grilled but this is not always deterrent enough. These need regular checks to ensure their continued security.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178) This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Water quantity/ quality**	Where the feature or its supporting habitat is dependent on surface water and/or groundwater, maintain water quality and quantity to a standard which provides the necessary conditions to support the feature	For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality and quantity of water supply will be critical, especially at certain times of year. Typically, meeting the surface water and groundwater environmental standards set out by the Water Framework Directive (WFD 2000/60/EC) will also be sufficient to support the achievement of SAC Conservation Objectives While not directly affected by water quality or quantity, greater horseshoe bats make use of tree lined watercourses as part of their migrating and foraging network. Changes to riparian vegetation structure should be avoided without reference to expert advice and possibly monitoring of the location for bat usage.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Attributes relating to **Population – maternity colony; External condition of buildings- hibernation site** and **External condition of building - maternity colony** have been removed as they are not relevant for the feature on this SAC.				

Table 4: Supplementary Advice for Qualifying Features: S1654. *Gentianella anglica*; early gentian

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Population (of the feature)	**Population abundance**	Maintain the abundance of the population at its current level, as indicated by the latest mean peak count or equivalent Avoid a deterioration in population. Where necessary, restore to a viable population size, Additionally, seek to maintain abundance across distribution of suitable host habitat.	The population of *G. anglica* on this SAC (and the contiguous Isle of Portland to Studland Cliffs SAC) is distributed in small populations along the coastal grasslands and, as such, is difficult to regularly count. It is known that counts do occur at certain locations, carried out by land owners but bringing these together to gain a detailed picture of the population is not easy. In 1997 approximately 11,000 plants were counted in 39 sub-populations in limestone grassland along 5km of the Purbeck coast between Seacombe and Durlston Head with outlying populations at Winspit and Swanage Townsend Reserve.(1) Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection.	**(1)** Wilson P.J. 1999 *The Distribution and Status of Gentianella anglica (Pugsley) E. Warb.* Plantlife Report no.119 Edwards B 1997 *A Survey of Early Gentian (Gentianella anglica) in Dorset* Plantlife Rep 86 Edwards B 1998 *A report on Gentianella anglica in Dorset (A supplement to the 1997 report)* **Plantlife** Rep 106
Population (of the	**Population structure:**	Maintain as appropriate, the presence of both *G. anglica* and	Intermixed populations have been recorded from many sites, with the hybrid recorded especially from sites near edge of	Edwards B 1997 *A Survey of Early Gentian (Gentianella*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
feature)	**presence of *Gentianella amarella, Gentianella x davidii* and 'intermediates'**	*G. amarella*, and the putative hybrid between the two (*G. x davidii*)	range of *G. anglica*. Phenological differences (flowering time) usually helpful in distinguishing between *G. anglica* and autumn gentian *G. amarella*. Note: there is still some uncertainty about the extent to which these two species hybridise, or indeed whether the two species are actually one. It is not clear whether this hybridisation has been observed or recorded on this SAC, certainly *G. anglica* and *G. amarelle* are both present. It has been recorded on the Studland to Portland Cliffs SAC, within which this SAC sits.	*anglica) in Dorset* Plantlife Rep 86 Edwards B 1998 *A report on Gentianella anglica in Dorset (A supplement to the 1997 report)* Plantlife Rep 106
Supporting habitat: extent and distribution	**Distribution of supporting habitat**	Maintain and where necessary restore the distribution and continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site.	A contraction in the range, or geographic spread, of the feature and its supporting habitat across the site will reduce its overall area, the local diversity and variations in its structure and composition. It may also undermine its resilience to adapt to future environmental changes. Contraction may also reduce and break up the continuity of the supporting habitat within a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, and wind, that it receives compared to its interior. These conditions may not be suitable for this feature and this may affect its viability. The supporting habitat for this feature is currently well distributed along the coastal strip and colonies of *G. anglica* occur along its length. The maintenance of the areas of suitable habitat is clearly the foremost aim, but given the potential for this species' frequency within the SAC (substrate and NVC community distribution is wider than the feature's distribution). Other factors constrain the feature's utilisation of the supporting habitat, which need investigating.	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.
Supporting habitat: extent and distribution	**Extent of supporting habitat**	Maintain and where necessary restore the total extent of the habitats which support the feature H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) at no less	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate	DERC (1998). A National Vegetation Classification Survey of Portland to Studland Cliffs cSAC. Survey by Bryan Edwards for English Nature.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		than 227 hectares]	depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. 27 ha is the figure given in the N2K Standard Data Sheet for this SAC. This will not, at any given time, mean that all this habitat feature is capable of supporting Early gentian. However, the cycles of bare ground creation and succession to mature grassland across the H6210 ensures the specific niches for the Early gentian occur.	
Supporting habitat: structure/ function	**Habitat structure and bare ground: regeneration/ colonisation niches**	Maintain and where necessary restore patches of bare ground and an open-textured sward to provide creating suitable regeneration/ colonisation niches. Bare ground should be in range 5-10%, but may be higher in some vegetation communities (especially CG1 and CG7).	Patches of suitable vegetation often occur in mosaics with less suitable areas, and generally associated with steeper slopes, more southerly aspects, thinner soils, heavier grazing, proximity to cliff edge/salt influence or trampling. All available evidence points to the need for plenty of bare ground in a short/tightly grazed open-textured sward. Many sites best described as 'sparsely vegetated'). It could be argued that both species occupy very similar niches within the intimate mosaic of microhabitat within a, at a large scale, stable mature grassland. At this SAC *G. anglica* has been seen growing in areas of bare chalk with very few other spp present in a very open exposed location (near Anvil Point LH) with virtually no soil.	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: structure/ function	**Soils, substrate and nutrient cycling**	Maintain and where suitable, restore the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, within typical values for the supporting habitat	Soil supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with the supporting habitat of this Annex II feature. This feature is generally characterised by thin, nutrient poor, highly porous soils. Some of the very best areas for *G. anglica*)	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			are at an early successional stage and comprise what are known as 'skeletal' soils having a low organic content and favouring annual or highly adapted species, especially where these occur in highly stressed clifftop locations. There is a very strong correlation along the coast with the areas where chalk, Portland and Purbeck stones form the outcropping geology Threats to such soils are enrichment/eutrophication, smothering under imported soils or waste etc. Additionally species such as common gorse can aggressively colonise such soils and relatively quickly significantly alter their nutrient status and chemistry. While the overriding aim should be to retain the naturally occurring soils of this SAC through non-intervention, in some places it may be appropriate, after due consultation with Natural England, to restore the soil to an early state through mechanical intervention (turf stripping, soil stripping etc).	
Supporting habitat: structure/ function	**Substrate**	Maintain and where necessary restore a substrate of skeletal drought-prone relatively infertile soils overlying calcareous bedrock (chalk or limestone), occasionally overlying lime-rich sand on coastal sand dunes, with a generally SE, S or SW aspect.	See above for floristic indicators that may indicate changes in soil nutrient status (increase in fertility).	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: structure/ function	**Vegetation composition: negative indicators**	Control and where necessary, reduce the frequency/cover of the following undesirable species at or to acceptable levels and are not encouraged by changes in surface condition, soils, nutrient levels or changes to hydrology. *Brachypodium pinnatum,*	This feature can be adversely affected by changes to the grass: herb ratio (increased grassiness), often in tandem with sward becoming denser (less bare ground) or ranker ((thick layers of 'thatch etc generally indicating inadequate grazing and/or cutting). Cover of tall grasses, e.g. *Brachypodium pinnatum, Bromopsis erecta, Avenula pubescens, Arrhenatherum elatius, Dactylis glomerata*, should typically not exceed about 10% (except the first two may locally occur at higher cover in stands of CG4a and CG3a respectively).	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report. Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Bromopsis erecta, Avenula pubescens, Arrhenatherum elatius, Dactylis glomerata, Ulex europaeus	European gorse *Ulex europaeus* can, if left unchecked, rapidly colonise various calcareous grassland smothering existing vegetation. Its roots are able to concentrate nitrogen from the soil, leading to localised eutrophication and acidification. This can make re-colonisation after clearance of long standing growth more difficult. Other species likely to be favoured by increased soil fertility/agricultural improvement, e.g. *Lolium perenne, Holcus lanatus, Cynosurus cristatus, Trisetum flavescens, Trifolium repens*, should be rare or absent. Equally, 'agricultural weeds' such as *Cirsium arvense, Cirsium vulgare, Galium aparine, Plantago major, Rumex obtusifolius, Senecio jacobaea* and *Urtica dioica*, are likely to be indicators of bad management and loss/degradation of suitable habitat, so should be rare or absent.	
Supporting habitat: structure/ function	**Vegetation height**	Maintain and, where necessary, restore a sward typically in the range of 2-5cm, but may also occur in slightly taller swards (5-20cm) as long as these still have plenty of bare ground and an absence of 'grassy' dominants.	See below	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.
Supporting habitat: structure/ function	**Vegetation structure and composition**	Maintain and where necessary restore the area of suitable supporting habitat which is short (2-5 cm), tightly-grazed and trampled calcicolous grassland with typically 5-10% bare ground which corresponds to the following NVC communities: CG1a, 1b, 2a, 2b, 3a, 4a, 7d. Most frequent in short species-rich CG2 and CG2b. In CG1 and CG7, bare ground may be 10-30%.	Vegetation composition of this feature can be variable, depending on habitat, aspect, management regime and underlying geology/soils, but the frequent presence of the following species tend to be positive indicators of suitable Early Gentian habitat in its usual CG2 NVC community: *Poterium sanguisorba, Cirsium acaule, Thymus praecox, Polygala vulgaris, Carex flacca, Hippocrepis comosa, Blackstonia perfoliata, Linum catharticum, Leontodon hispidus, Pilosella officinarum, Ranunculus bulbosus. Grasses such as Avenula pratensis, A. pubescens, Brachypodium pinnatum, B. sylvaticum* and *Bromopsis erecta* may be frequent as an open grassy 'overstorey', but never abundant or dominant. Early gentain may often occur with autumn gentian Gentianella	Wilson, P.J. 2008. A SAMPLE SURVEY OF SITES FOR GENTIANELLA ANGLICA IN ENGLAND IN 2008. National Trust Report.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			amarella, but the two species usually occupy different microsites and seasonal timings, although there may be considerable overlap on some sites.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Adaptation and resilience**	Maintain and where necessary restore the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	See generic text for this attribute in Table 2. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change while retaining the same basic structure and ways of functioning. Such environmental changes here may include changes in sea levels, storminess, precipitation and temperature all of which appear to already be increasing the rate at which the cliffs are eroding and cutting back into coastal habitat. This is already affecting the extent of some grassland and possibly the species feature (early gentian). Other impacts could include distribution, composition and functioning of this feature within the site. The vulnerability and response of features to such changes will vary, even within this single site. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)
Supporting processes (on which the feature and/or its supporting habitat relies)	**Air quality**	Concentrations and deposition of air pollutants should be maintained at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for	www.apis.ac.uk Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. The basic grasslands in which the feature is found can be quite resilient in the face of certain pollutants (acidification for example). Critical loads for this feature within the SAC are currently within acceptable limits however there are concerns about impacts of future increases in deposition levels on the feature. Any proposals within 10km of the St Albans Head to Durlston Head SAC should be assessed for their air quality impacts on the feature. The current levels of airborne pollution and the critical loads/levels for the host habitats can be found on the Air Pollution Information System (APIS) here: http://www.apis.ac.uk/srcl/select-a-feature?site=UK0019863&SiteType=SAC&submit=Next. The S1654. *Gentianella anglica*; Early gentian feature is found within a series of vegetation communities, it would be necessary to assess emissions against each NVC (National Vegetation Classification) community (see above) listed for this feature separately. This can be done here: http://www.apis.ac.uk/search-pollutant-impacts.	
Supporting processes (on which the feature and/or its supporting	**Disturbance from human activity**	Control and minimise excessive human access to grasslands	In some locations the level of access along the clifftop grasslands by the public may have reached levels at which a negative impact on the SAC feature (and other non-SAC interests) may be occurring.	Site Improvement Plan: Portland-Studland & St Albans-Durlston (SIP178)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
habitat relies)			The sheer volume of footfall in some locations, coupled with the limited 'depth' of the SAC (pinch points where break of cliff and landward boundary are as little as a couple of meters apart) can result in rapid destruction of sward to bare soil/chalk substrate in a matter of days. This is especially likely to occur when falls close sections of existing coast path/other access. The type and frequency of activity needs to be monitored and action taken to reduce pressure where it is having an adverse impact on a feature's constituent vegetation communities. Location of access points, signage, car parks capacity and charging and licencing of activity providers may be mechanisms which can create or reduce access pressure in specific locations.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Conservation measures**	Maintain and where necessary restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain and restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain and restore this feature at this site. Conservation grazing, using extensive cattle grazing is the prime mechanism by which this is achieved. Grazing is required to not only maintain a varied, but generally short, sward but also to have a mechanical input, creating an intimate mosaic of bare /disturbed ground within the grass matrix. This provides essential germination niches for *G. anglica* which is an annual. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	Natural England 2014 *Site Improvement Plan Portland-Studland & St Albans-Durlston* Version 1.0 Views About Management (VAM) for component SSSI Dorset County Council, 2017. Durlston Country Park Management Plan.
Supporting processes (on which the feature and/or its supporting habitat relies)	**Grazing pressure**	Maintain and, where necessary, restore a grazing regime to keep the sward short (preferably 2-5cm)	Swards usually require moderate to heavy grazing and/or trampling to keep them sufficiently short and open; but on some coastal sites, drought and exposure may be sufficient on their own to maintain suitable sward conditions. Grazing may be by (any combination of) rabbits, deer, sheep or	Wilson P.J. 1999 *The Distribution and Status of Gentianella anglica (Pugsley) E. Warb.* Plantlife Report no.119 Wilson, P.J. 2008. A SAMPLE

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			cattle. Generally, rabbits and/or sheep preferred to cattle (see, e.g. Telfer 1994), although Wilson (2000) suggests for sites in Wilts that summer (April-October) cattle grazing at 1.5 animals/ha, plus less intensive grazing in the winter, is suitable for many sites, with sheep used in late summer to remove any excess grass growth. In areas where *G. anglica* is present or is to be introduced, maintain an overview of the sward conditions rather than slavishly adhere to grazing calendars. Variations in temperature, rainfall, sunshine etc all combine to alter the rate of growth, grazing habits and bare ground. Grazing should be managed to ensure conditions are as good as management will allow.	SURVEY OF SITES FOR *Gentianella Anglica* in England 2008. National Trust Report.
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: The targets for some attributes listed above include both 'maintain' or 'restore' objectives. This is because this SAC is made up of two component sites. Overall, both objectives will be applicable to the SAC but these will differ between each component site depending on its particular circumstances. Natural England will able to provide further advice on request. Attribute relating to **Water quality / quantity** has been deleted as Early Gentian is not dependent on surface or ground water. Additional attribute **Supporting processes – disturbance from human activity** has been added				

ANNEX 40

South Dorset Coast SSSI Citation

COUNTY: DORSET SITE NAME: SOUTH DORSET COAST

DISTRICT: Purbeck, West Dorset, Weymouth and Portland

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981, as amended.

Local Planning Authority: PURBECK DISTRICT COUNCIL, West Dorset District Council, Weymouth & Portland Borough Council, Dorset County Council

National Grid Reference: SY 697816–SZ 040786 Area: 1760.9 (ha.) 4351.2 (ac.)

Ordnance Survey Sheet 1:50,000: 194, 195 1:10,000: SY 78 SW, SE; 87 NW; 88 SW, SE; 87 NE; 97 NE; SZ 07 NW

Date Notified (Under 1949 Act): 1952 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
Formerly notified as Bowleaze Cove to Peveril Point SSSI. Within A.O.N.B. and part of the Dorset Heritage Coast. Parts are owned by the National Trust. Site amended by extension and deletion. More detailed geological and biological information is available on request.

Description
This stretch of coastline combines internationally important geological interest with a rich range of wildlife habitats supporting populations of several rare plants and animals.

The coastal cliffs are of international geological importance and expose a complete section through the Upper Jurassic and Cretaceous rock succession. The site includes the type localities for the Kimmeridge Clay, the Kimmeridgian Stage, the base of the Portlandian Stage and the Purbeck Beds as well as the standard reference section for the Oxfordian of southern England. Numerous features of great importance for studies of Palaeontology, sedimentology, stratigraphy and environments of rock formation are present and have been studied by geologists for well over 150 years. The site is also of national importance for its physiographic interest.

Most of the rock units are very fossiliferous and a number are of international significance for the assemblages of fossil vertebrates which they contain. In particular the Purbeck Beds of Durlston Bay are of special note since they have yielded one of the most important collections of Mesozoic mammals from anywhere in the world. Durlston is also the most important Late Jurassic–Early Cretaceous fossil insect site in Europe. Internationally important sites for fossil reptiles also occur in the Kimmeridge Clay at Gaulter Gap to Broad Bench and between Swyre Head and Chapmans Pool and in the Oxford Clay at Furzy Cliff.

The great range of rock types has given rise to a varied coastline of vertical cliffs, undercliffs and landslips which support an outstanding array of local and maritime species. Among the rare plants which occur here are the Carrot Broomrape *Orobanche maritima* and the strongest national populations of Wild Cabbage *Brassica oleracea*.

The majority of unimproved limestone grassland in Dorset falls within this site which also includes one of the main areas of unimproved chalk grassland in the county. The character of these calcareous grasslands is strongly influenced by their maritime location and also very locally there is 'chalk heath' on clay with flints over the chalk. Among the many scarce and localised plants and animals of the chalk and limestone are the largest national populations of two rare species -- Early Spider Orchid *Ophrys sphegodes** and Lulworth Skipper butterfly *Thymelicus acteon*.

Unimproved grassland, scrub and woodland typical of more neutral soils are found on the clays and sands of the Wealden, the Kimmeridge, Oxford and Gault Clays and the Reading Beds. Of the woodlands, those of the Tyneham Valley are especially notable for their lichen communities which include several rare species.

*This species is given special protection under Section 13 of the Wildlife and Countryside Act 1981.

ANNEX 41

Townsend SSSI Citation

Site Notified to Secretary of State on 15th April 1986

County: Dorset **Site Name: Townsend**

District: Purbeck

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981, as amended.

Local Planning Authority: Purbeck District Council, Dorset County Council

National Grid Reference: SZ 023782 **Area:** 14.2 (ha) 35.1 (ac)

Ordnance Survey Sheet 1:50,000: 195 **1:10,000:** SZ 07 NW

Date Notified (Under 1949 Act): 1977 **Date of Last Revision: –**

Date Notified (Under 1981 Act): 1986 **Date of Last Revision: –**

Other Information:
Part Dorset Trust for Nature Conservation Reserve. Site boundary amended by extension and deletion. Site formerly known as Townsend Farm Quarries.

Description and Reasons for Notification:
Lying on Jurassic limestone of the Purbeck Beds, Townsend supports calcareous grassland and scrub. The area was formerly quarried for Purbeck stone and the underground galleries and associated quarry entrances provide important winter roosting sites for bats, including the rare greater horseshoe bat *Rhinolophus ferrum-equinum*.

On the surface, the steep scar banks provide an uneven topography of varying aspect, with thin poor soils supporting a rich downland flora and fauna. Amongst a varied turf which includes sheep's-fescue *Festuca ovina* and quaking-grass *Briza media*, there is an abundance of horseshoe vetch *Hippocrepis comosa*, kidney vetch *Anthyllis vulneria*, yellow-wort *Blackstonia perfoliata*, yellow-rattle *Rhinanthus minor*, rue-leaved saxifrage *Saxifraga tridactylites*, and wild thyme *Thymus praecox*. Pyramidal orchid *Anacamptis pyramidalis*, bee orchid *Ophrys apifera* and autumn lady's tresses *Spiranthes spiralis* occur, together with a population of the very rare early spider orchid *Ophrys sphegodes* – a protected species. Two other rare species, early gentian *Gentianella anglica* and bastard toadflax *Thesium humifusum* occur.

Taller swards of limestone grassland are dominated by oat-grass *Arrhenatherum elatius* and tor-grass *Brachypodium pinnatum*. Associated species here include cowslip *Primula veris*, burnet saxifrage

Pimpinella saxifraga, pepper saxifrage *Silaum silaus*, small scabious *Scabiosa columbaria* and common knapweed *Centaurea nigra*.

The taller vegetation supports a wealth of invertebrates including great green bush-cricket *Tettigonia viridissima*, and several species of butterflies including marbled white *Melanargia galathea* and the rare Lulworth skipper *Thymelicus acteon*. Areas of well developed dense mature blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* scrub provide valuable cover for many migrant and breeding birds including, in some seasons, nightingale *Luscinia megarhyncos*. Old boundary dry stone walls provide further important habitat for a variety of species, particularly invertebrates.

ANNEX 42

South Dorset Coast SSSI Condition Assessment
(November 2022)

Report generated on: 04 Nov 2022

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment
South Dorset Coast SSSI - DORSET (PURBECK, WEST DORSET)								
SUPRALITTORAL ROCK	MATTHEW LOW	001	1005391	28.1493	0.00	26/07/2008	Favourable	Undercliffs grazed by rabbits and deer with gooc range of vegetation, and with areas of open ground maintained by natural erosion processes Plants in more open areas include carline thistle, Portland spurge, yellow-wort and viper?s buglos whilst flushes have hemp agrimony, reed and ha rush. Tor grass is abundant in more established grassland. Coltsfoot occurs on open Oxford clay undercliffs near the beach, whilst an established pool has both broad-leaved and small pondweec plus common stonewort, grey club-rush and a small patch of sea club-rush.
SUPRALITTORAL ROCK	MATTHEW LOW	002	1005411	12.7563	0.00	12/03/2015	Favourable	Unit 2 was assessed from the beach at low tide with Richard Edmonds and Sam Scriven, Jurassi Coast Team. The beach and exposed ledges wer in favourable condition and the effect of the storms in the extreme winter weather in early 2014 could clearly be seen with the foot of the c cliffs deeply incised and many tree roots expose Shingle and boulders have been moved and deposited at the top of the beach. As no detrimental anthropogenic impacts could be see on the beach the GCR interest and annual drift li community remain in favourable condition. The base of the soft cliffs has been extensively scour by the storms and fossils were found either just partially buried or washed out. There was no evidence of over-collection of fossils. The soft c cliffs are actively slipping and there were patche of freshly exposed clay, seepages and small

	Adverse Condition Reasons
d . , s, ard d,	
c re clay d. n ine red lay s	

streams across the cliff face. Vegetation is a mix of scrub willow carr with swampy pools; blackthorn; bramble and open grassy glades. Coltsfoot and phragmites are pioneer species on the slumping Kimmeridge clay. There is no domestic stock grazing on the cliffs and the suite of habitats and species that are present from year to year is influenced solely by the geology and coastal environment and natural processes prevail. The habitat for the invertebrate assemblages (F11 unshaded early successional mosaic and (W12 slow-flowing water) was favourable and the proportion of wet and drier soils will vary from year to year as the cliff slips and erodes. Japanese knotweed was not seen but could have been missed (it is present in unit 1) due to the time of year and the unit should be searched for knotweed in the summer months. Photographs and JCT report are stored on TRIM	

SUPRALITTORAL ROCK	MATTHEW LOW	003	1005418	8.2417	0.00	04/10/2011	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	004	1005415	11.903	0.00	12/03/2015	Favourable

Unit containing calcareous grassland, flushes and undercliffs with scrub, the grassland mostly in the eastern area of the unit. The triangular field here is grazed by cattle, with the most species-rich areas occurring on the upper slopes, with frequent Bird?s-foot Trefoil, Rough Hawkbit and Glaucous Sedge, and occasional Dwarf Thistle, Lady?s Bedstraw and Common Knapweed. Flatter areas in the field have a reduced cover of herbs and sedges. A steep west-facing slope north of the field with cattle-grazed terracettes supports species-rich CG4 grassland with frequent Wild Thyme, Mouse-ear Hawkweed and Hoary Plantain, and occasional Horseshoe Vetch, Burnet Saxifrage, Common Centaury and Carline Thistle. Flushes in the unit contain frequent Water Mint, Fleabane and Hard Rush, locally frequent Great Horsetail, Yellow Flag and Common Reed, occasional Meadowsweet, Lady Fern, Hemp Agrimony and Fool?s Watercress, and rare Square-stemmed St. John?s-wort. Sallow is the most abundant scrub species, with lesser amounts of Elder and Hawthorn. The geomorphological interest feature is in favourable condition.	
Unit 4 was assessed from the beach at low tide with Richard Edmonds and Sam Scriven, Jurassic Coast Team. The beach and exposed ledges were in favourable condition and the effect of the storms in the extreme weather of the 2014 winter could clearly be seen with the foot of the clay cliffs deeply incised and many tree roots exposed. At Osmington Mills a significant landslip has occurred since Dec 2014 below the car park. Shingle and boulders have been moved and deposited at the top of the beach. As no detrimental anthropogenic impacts could be seen on the beach the GCR	

SUPRALITTORAL ROCK	MATTHEW LOW	005	1005422	7.0797	0.00	28/06/2009	Favourable

interest and annual drift line community remain in favourable condition. The base of the soft cliffs has been extensively scoured by the storms and fossils were found either just partially buried or washed out. There was no evidence of over-collection of fossils. The soft clay cliffs are actively slipping and there were patches of freshly exposed clay, seepages and small streams across the cliff face. In placed the cliff face has moved inland behind the line of the SSSI. Vegetation is a mix of scrub willow carr with swampy pools; blackthorn; bramble and open grassy glades. Coltsfoot and phragmites are pioneer species on the slumping Kimmeridge clay. There is no domestic stock grazing on the cliffs and the suite of habitats and species that are present from year to year is influenced solely by the geology and coastal environment and natural processes prevail. The habitat for the invertebrate assemblages (F11 unshaded early successional mosaic) and (W12 slow-flowing water) was favourable and the proportion of wet and drier soils will vary from year to year as the cliff slips and erodes. Japanese knotweed was not seen but could have been missed (it is present in unit 1) due to the time of year and the unit should be searched for knotweed in the summer months. Garden waste ie conifer brash and wayleave cutting brash were found on the cliff face to the west and south of the car park at Osmigton Mills. Photographs and JCT report are stored on TRIM	
Geological sections in cliffs well exposed and in favourable condition. Clifftop vegetation includes yellow-wort, wild carrot, agrimony, tor grass, glaucous sedge, meadow vetchling, wild privet and lady's bedstraw.	

SUPRALITTORAL ROCK	MATTHEW LOW	007	1005428	3.6094	0.00	10/04/2013	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	008	1005436	8.1462	0.00	09/01/2014	Unfavourable - Recovering
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	009	1005438	2.0779	0.00	30/01/2013	Unfavourable - No change
SUPRALITTORAL ROCK	MATTHEW LOW	010	1005444	52.9118	0.00	09/03/2012	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	011	1005446	35.8582	0.00	18/09/2014	Favourable

	AGRICULTURE - INAPPROPRIATE CUTTING/MOWING,AGRICULTURE - UNDERGRAZING,
This assessment is based on the condition of the grassland which could be accessed safely i.e. within 75 m of the northern boundary at the western end of the unit increasing in depth towards the east. For H&S reasons it wasn't possible to assess the condition of the grassland on the steeper slopes or the cliff top communities and their associated rare plants. However there were no visible adverse impacts on these features and assumed to in favourable condition. There is no fence on the cliff top and stock grazing ceased many years ago (date unknown) The grassland at West Bottom is unlike any others on the coast. The exposed, steep slopes and thin soils appear to be enough of a constraint on the growth of tor grass to allow less competitive herbs and grasses to flourish. Scrub, which has spread readily elsewhere on the coast, is similarly constrained and having analysed the available evidence I have concluded that at present, the natural environmental conditions at West Bottom are allowing an open sward to persist in the absence of grazing. A rich CG4 community is present across the unit with shorter swards in discrete rabbit grazed pockets covering no more than 10% of the unit. GC4 has	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	012	1005452	60.302	0.00	23/09/2014	Favourable

abundant taller herbs such as saw-wort; marjoram; wild carrot. Breeding adders and a number of common lizards were also found and the grasslands are suitable for a wide range of butterflies and invertebrates including Lulworth Skipper. Butterfly Conservation monitored Lulworth Skipper numbers in 2012, population here is small and habitat suitable across the unit. The bare sand/chalk invertebrate habitat present on the cliff top at Bat's Head could not be safely directly assessed but no adverse impact was apparent. It is likely to be a transient community developing on freshly exposed chalk and maintained by exposure, rabbit grazing. Proxy assessment of the short sward invertebrate communities is favourable albeit only sparsely represented across the unit. No adverse impact on the GCR interest was apparent from cliff top views. The beach and drift line are only accessible by boat but no adverse impact on any available drift line substrate was apparent from cliff top views and concluded to be favourable.		
This unit remains in excellent condition with a rich and diverse CG4 community on the steeper chalk slopes with no loss of extent. Species recorded in 2009 are present and the sward has a good structure within the fenced fields with a patchy mosaic of shorter turf (1-8 cm) interspersed with taller (to 40cm) tor grass tussocks. Sward structure is suitable in known early gentian localities and a number of desiccated gentian stems were found, most likely autumn gentian rather than early gentian. Semi-improved mesotrophic swards in the valley floor are free of weeds and also well grazed. Free draining sandy soils at the top of the slopes support 'chalk heath'		

NVC tbc ?H4/U4 surviving amongst a dense stand of mature common gorse and bramble. Bell heather, western gorse and harebell were in flower at the time of the survey. Chalk heath is a rare on the coast and it would be really beneficial to facilitate some restorative grazing by reducing and breaking up this area of gorse to give the cattle greater access to the grassland. Younger, more dispersed gorse is present on the highest eastern slopes and this will need to be regularly cut outwith the early gentian season minimise further spread.The sward on the seaward side of the fence is only rabbit grazed and rank with a heavily used and trampled coast path which is increasingly squeezed as the cliff erodes. Tall sward structure here is suitable for Lulworth Skipper. (Taller swards within the grazed fields may also be suitable). CG1 and bare sand/chalk invertebrate habitat present on the cliff top at Bat's Head could not be safely directly assessed but no adverse impact was apparent. It is likely to be a transient community developing on freshly exposed chalk and maintained by exposure, rabbit grazing and trampling. The Vascular plant assemblage occurs mostly on the cliff top where plants such as Limonium dodartiforme and Pilosella peleteriana are restricted to small fragile ledges and cliff top coastal grassland. This community is threatened by heavy trampling as the coast path is restricted to a narrowing route by natural erosion. No adverse impact on the GCR interest or vegetated sea cliffs was apparent from cliff top views. The beach and drift line are only accessible by boat but no adverse impact on any available drift line substrate was apparent from cliff top views and concluded to be favourable. The 'indicators of success' set out in the ELS/HLS agreement are also being met and

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	013	1005455	46.7991	0.00	06/09/2012	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	014	1005460	15.2879	0.00	23/09/2013	Unfavourable - Recovering
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	015	1005470	37.8748	0.00	14/11/2012	Unfavourable - No change
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	016	1005471	3.1796	0.00	05/09/2010	Favourable

the grassland management is continuing to protect the archaeology.	
Geological exposures in coastal cliffs in favourable condition. CG4 grassland on slopes above cliffs is rank in many areas but this is favourable for the important population of Lulworth Skipper which occurs here. Steeper areas have a more open short sward maintained by exposure and there is a good range of herbs, including frequent wild carrot, wood sage and hedge bedstraw, occasional ploughman's spikenard, carline thistle, wild madder, wild thyme and viper's bugloss, and less frequent dwarf thistle and hawkweed ox-tongue.Scrub occurs on the upper slopes, mostly common gorse, bramble, sycamore and wild privet.	

SUPRALITTORAL ROCK	MATTHEW LOW	017	1005472	0.6492	0.00	28/03/2012	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	018	1005473	5.8391	0.00	28/06/2008	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	019	1005474	23.0681	0.00	14/11/2012	Unfavourable - No change

Small coastal cliffs unit in overall favourable condition. Geological interest features in coastal cliffs in favourable condition. Vegetated sea cliffs favourable, with wild carrot, wild cabbage, viper's bugloss, white stonecrop, mouse-ear hawkweed and red valerian. CG4 vegetation on very steep slopes at top of cliffs maintained by exposure and sea winds, relatively rank but favourable for Lulworth Skipper, which is a key interest feature in this area of the SSSI. Some winter heliotrope, an introduced species, amongst CG4 sward on clifftops at western end of unit.	
Geological interest features in favourable condition in this unit on the western side of Lulworth Cove, with the cliff faces well exposed including the famous crumpled strata within Stair Hole. Vegetation on the coastal cliffs includes frequent golden samphire, sea beet, thrift, rock samphire and wild carrot, and occasional yellow-wort and restharrow. Tree mallow, lady's bedstraw, buck's-horn plantain and black medick occur with abundant red fescue on the clifftops. Part of the inland grassland has been mown for benefit of the many visitors who visit the site.	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	020	1005475	118.9082	0.00	03/10/2010	Unfavourable - Recovering

Large ranges unit in overall recovering condition, with levels of scrub locally high but the site is under favourable conservation management. The south-facing slope of Bindon Hill is grazed by sheep and has a good range of calcicoles, including frequent Sanguisorba minor, Lotus corniculatus, Cirsium acaule and Pilosella officinarum, occasional Hippocrepis comosa, Campanula glomerata, Carlina vulgaris and Helianthemum nummularium, and rare Serratula tinctoria, Asperula cynanchica and Origanum vulgare. Vegetation is recovering at the eastern end where a large burn of the vegetation has occurred, and levels of bare ground are higher in this area. The cover of gorse exceeds 10% at the western end of this slope, and scrub is also frequent on the flatter ground between the base of the slope and the sea. This flatter ground is grazed by ponies and has a more mesotrophic tendency, with locally frequent Centaurea nigra, Lotus corniculatus and Trifolium pratense and occasional Lathyrus pratensis, although the calcicoles Viola hirta and Cirsium acaule are occasional.The north-facing slope of Bindon Hill within this unit supports calcareous CG4 vegetation, but this is less species-rich than that on the same slope to the east of the wire fence that marks the unit boundary, no doubt due to historic management differences. Leontodon hispidus, Carex flacca and Serratula tinctoria are frequent, Lotus corniculatus, Succisa pratensis and Pimpinella saxifraga occasional, and Stachys betonica, Cirsium acaule and Thymus polytrichus rare. The geological interest and cliff vegetation of the coastal cliffs is in favourable condition under non-intervention managment.	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	021	1005476	240.9731	0.00	03/10/2010	Unfavourable - Recovering

Very large ranges unit containing both calcareous grassland on steep slopes in the south in favourable condition plus flatter ground with higher levels of scrub, the unit overall in recovering condition under favourable conservation management. The cattle-grazed north-facing slopes of Bindon Hill are in good condition with a fine range of calcicoles, including frequent Sanguisorba minor, Succisa pratensis, Origanum vulgare and Carex flacca, occasional Stachys betonica, Hippocrepis comosa, Centaurea scabiosa and Cirsium acaule, and rare Gentianella amarella, Anthyllis vulneraria and Scabiosa columbaria. The Nationally Rare Pilosella peleteriana occurs at low frequency.The flatter ground which comprises the largest area within the unit contains extensive scrub, in particular gorse, brambles and hawthorn, and this is being managed under a programme of scrub control. Ground flora here includes frequent Lotus corniculatus, Centaurea nigra and Daucus carota, occasional Cirsium acaule, Leucanthemum vulgare, Medicago lupulina and Primula vulgaris, and rare Centaurea scabiosa, Polygala vulgaris and Cichorium intybus. Damper hollows have occasional Juncus inflexus and Pulicaria dysenterica. The Dorset Notable Lotus glaber is locally occasional in the south of the unit.The geological interest and cliff vegetation of the coastal cliffs are in favourable condition, with the sea cliffs flora including frequent Daucus carota and occasional Echium vulgare, Carlina vulgaris, Blackstonia perfoliata and Inula conyzae. The Nationally Scarce species Brassica oleracea and Silene nutans are occasional and rare respectively.	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	022	1005478	161.6583	0.00	16/08/2009	Favourable

Areas of short species-rich grassland are present on the south-facing slope, especially the eastern grazing unit at Lawford Sheard Gate. CG4 grassland contains frequent Cirsium acaule, Lotus corniculatus, Sanguisorba minor and Carex flacca, with occasional Galium verum and Hippocrepis comosa, and rare Helianthemum nummularium. Cover of gorse exceeds 5%, mostly at the top of the slope. The fields at the foot of the slope are tall, species-poor CG4c with very little diversity, and were improved in the past.Neutral grassland occurs as a mosaic of MG5 and MG6 with scattered patches of Brachypodium pinnatum. Lathyrus pratensis, Silaum silaus, Centaurea nigra and Oenanthe pimpinelloides are occasional. Bracken has invaded some areas of the more species-rich grassland south and west of Rook Grove. Ragwort is frequent throughout.There are several small flushes, with frequent Mentha aquatica, Lotus pedunculatus, Filipendula ulmaria, Lychnis flos-cuculi and Galium uliginosum. The largest to the east of Rook Grove is generally in good condition.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	MATTHEW LOW	023	1005479	30.7806	0.00	21/03/2010	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	024	1005501	113.7605	0.00	31/08/2009	Favourable

A good range of trees species and tree ages present, including some veterans. Exotics such as Beech and Sycamore are important for lichens, but should be kept at low levels within the core ancient woodland area. Fallen and standing dead wood both present throughout the wood. Lobaria pulmonaria is still present and most of the key lichens were refound, and several new rare and scarce species were found.Deer pressure is high, but this is positive in keeping the amount of Ivy and Bramble on and around the trees trunks very low. On the negative side there is considerable damage to the younger trees. MoD has been significantly reducing the numbers of deer in the Tyneham Valley as whole over the last few months.There is a little Rhododendron on the northern boundary of the unit which ideally should be cleared. The `cages? that were put around trees supporting Lobaria should be removed as these are encouraging Ivy.	
CG4 grassland in favourable condition, with frequent Galium verum, Lotus corniculatus and Carex flacca, occasional Cirsium acaule, Leontodon hispidus and Pilosella officinarum, and rare Thymus polytrichus, Helianthemum nummularium and Sanguisorba minor.Common gorse does exceed 5% cover of the calcareous grassland area, but is confined to the steepest part of Gold Down and to an area of the south-facing slope to the east of Tyneham cap. Some has recently been burnt.	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	025	1005484	15.8685	0.00	04/09/2011	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	026	1005529	15.2268	0.00	30/07/2009	Favourable

Vegetation occurring on the crumbling shale cliffs includes frequent Sea campion and Rock Samphire, locally frequent Common Reed and Black Mustard, occasional Wild Carrot and Sea Mayweed, and rare Woody Nightshade. The Nationally Scarce Wild Cabbage is occasional. Clifftop maritime grassland has abundant Red Fescue with frequent Buck?s-horn Plantain, locally frequent Thrift, Lady?s Bedstraw and Hound?s-tongue, and occasional Bird?s-foot Trefoil. Levels of scrub on the cliffs are acceptable. Driftline vegetation includes frequent Babington?s Orache and rare Sea Beet, Sea Sandwort and Yellow Horned Poppy. The geomorphological and geological interest features are in favourable condition.	
Cliff faces favourable and exposed, without sea defences. A WWII pillbox is on beach at Kimmeridge Bay but this is not obscuring geological interest features. Vegetation on cliffs includes frequent Wild Cabbage, Wild Carrot, Sea Campion and occasional Thrift, whilst Rock Samphire, Sea Beet and Hastate Orache are occasional on upper shore. Clifftop species also include Bird's-foot trefoil, Lady's Bedstraw and Pepper Saxifrage, the latter rare. A small base-rich flush near eastern end of unit contains False Fox Sedge, Wild Celery, Fleabane and Lesser Centaury, with Dwarf Thistle and Fairy Flax on drier ground above.	

SUPRALITTORAL ROCK	MATTHEW LOW	027	1005531	25.2627	0.00	30/07/2009	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	028	1005534	44.2032	0.00	30/09/2011	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	029	1005536	3.9403	0.00	29/09/2011	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	030	1005538	35.9387	0.00	13/10/2005	Favourable

Geological interest in cliff faces favourable and exposed, without sea defences. Vegetation on cliffs includes Wild Cabbage, Wild Carrot, Sea Campion and occasional Thrift, whilst clifftop species also include Bird's-foot trefoil, Teasel, Lady's Bedstraw, Crosswort and Fleabane. Yellow-horned Poppy, Knotted Hedge-parsley and Viper's Bugloss are uncommon towards the eastern end of the unit.	
Calcareous sward on large west-facing slope in S. of unit in fine condition with frequent small scabious, dwarf thistle and saw-wort, and occasional betony and harebell. Some clearance of younger scrub on the northern slopes would be beneficial.	

SUPRALITTORAL ROCK	MATTHEW LOW	031	1005553	54.3253	0.00	06/05/2009	Favourable

Large coastal unit containing cliffs and undercliffs on western side of St. Aldhelm?s Head under non-intervention management, plus a triangular area of calcareous grassland on coastal slope. Geological interest features in favourable condition, with cliff faces well exposed. Vascular plant interest feature in favourable condition with fine populations of the Nationally Scarce wild cabbage on the slopes and the Nationally Rare hairy-fruited cornsalad present. Wild clary, wild madder, horseshoe vetch and oxeye daisy were locally frequent, glaucous sedge and bird?s-foot trefoil frequent, and sainfoin rare. A corn bunting and skylarks were seen near the old chapel at the southern end of the headland.The triangular area of CG4 grassland on the south-facing coastal slope was also well-grazed (mean sward height 8 cms) and favourable, with frequent black medick, bird?s-foot trefoil, common knapweed, wild carrot and meadow oat-grass, and occasional dwarf thistle, horseshoe vetch, fairy flax, carline thistle, lady?s bedstraw, field scabious, greater knapweed, wild clary, mouse-ear hawkweed, hoary plantain and restharrow. Anthills occurred here.	

SUPRALITTORAL ROCK	MATTHEW LOW	032	1005560	8.4902	0.00	06/05/2009	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	033	1005563	1.0682	0.00	12/06/2006	Unfavourable - Recovering
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	034	1005565	2.9724	0.00	06/05/2009	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	036	1005580	4.8129	0.00	07/09/2012	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	037	1005586	33.284	0.00	01/07/2013	Unfavourable - Recovering

Narrow unit on coastal cliffs and slopes on eastern side of St Aldhelm?s Head. Coastal slopes in favourable condition, with frequent wild carrot, bird?s-foot trefoil and horse shoe vetch, locally frequent wild cabbage (Nationally Scarce), sea beet, thrift, kidney vetch, chalk milkwort, oxeye daisy, and occasional carline thistle and wild clary. The historic introduction red valerian is frequent but is not detrimental to the condition of the unit, and provides a valuable nectar source. Geological interest features in favourable condition, with cliff faces well exposed. There is a good range of habitat structure for invertebrates.	
Narrow unit along western side of dry valley south of Worth Matravers in overall favourable condition, with CG4 grassland grazed by cattle and containing frequent horshoe vetch, salad burnet, common knapweed and black medick, and occasional cowslips, wild carrot, field scabious, kidney vetch, common centaury, meadow vetchling, greater knapweed, wild clary, agrimony and mouse-ear hawkweed. There is a good range of habitat structure for invertebrates. Scattered scrub occurs, particularly in southern part of unit, and this may need some control in the future.	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	038	1005591	18.9694	0.00	06/12/2012	Unfavourable - Recovering
SUPRALITTORAL ROCK	MATTHEW LOW	042	1005619	18.3922	12.11	30/09/2011	Favourable
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	073	1030365	61.1354	0.00	30/09/2014	Unfavourable - No change

Though this unit is being actively managed by MoD, it is probable that the Ulex scrub is just being held in check and not reduced by any significant amount. Current cover of scrub is significant (40% +).ISAT failing featuresCG1:Cover of lichens (all) - The CG1 habitat was hard to find in the unit and appears to have suffered from a run of wet years. This has lessened the drought stress associated with this community and led to partial succession to a more CG3 type species assemblage.CG3-5 mosaicCover of specific species (individual) - Tor grass at 30cm+ for Lulworth Skipper (28% estimated, target 5-10%) probably due to lack of grazing pressure on upper slopes and plateau.Cover of trees and scrub (all) - Ulex scrub exceeding current FCT target (5-10%) by a wide margin. MoD keeping in check but not yet reducing extent.Extent of feature - Clear loss of open grassland since notification (almost entirely to Ulex e.).Frequency of negative indicator species (all) - Unit failing on Abundant Common Ragwort (target, no more than occasional).In places the unit shows its potential for recovery where good quality CG3 is found (mostly lower slopes - with > grazing pressure & ramparts of the hill fort). Species such as Fairy Flax, Gentian sp, Lady's Bedstraw, Salad Burnet, Milkwort and Dwarf Thistle characterised these swards.Weather was too cold and windy to assess the frequency of Lulworth Skipper, though the extent of Tor Grass certainly provided more than adequate habitat.	LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,

CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	074	1030643	4.3591	0.00	06/12/2012	Unfavourable - Declining
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	075	1030644	12.9706	0.00	14/05/2009	Favourable
SUPRALITTORAL ROCK	MATTHEW LOW	076	1030655	4.5833	0.00	10/04/2013	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	077	1030656	2.511	0.00	04/08/2009	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	078	1030657	33.3185	0.00	11/09/2013	Unfavourable - Recovering

	AGRICULTURE - UNDERGRAZING,LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,
An east-facing slope with strip lytchetts to the east of the village. The east-facing slope is in overall favourable condition, with cattle-grazed calcareous grassland and frequent bird?s-foot trefoil, glaucous sedge and salad burnet, and locally frequent common knapweed, dwarf thistle, cowslip, mouse-ear hawkweed, lady?s bedstraw and restharrow. The topography of the strip lytchetts has resulted in taller but more species-rich grassland on the slopes, and shorter and less species-rich grassland on the flatter areas.	
Grassland in clifftop fields in overall favourable condition, with frequent bird's-foot trefoil, locally frequent common knapweed and prickly ox-tongue, occasional ox-eye daisy and rare pepper saxifrage. Marshy patches have locally frequent glaucous sedge and fleabane. The western part of the unit is more species-rich than the east.	

NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	079	1030658	35.2441	0.00	30/09/2010	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	080	1030659	31.0011	0.00	11/09/2013	Unfavourable - Recovering
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	081	1030660	6.4865	0.00	06/09/2012	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	082	1030661	19.8128	0.00	06/09/2012	Favourable
NEUTRAL GRASSLAND - Lowland	MATTHEW LOW	083	1030662	67.6926	66.53	23/11/2012	Favourable

Well-grazed tor grass slopes with good range of calcicoles, including frequent Sanguisorba minor, Pilosella officinarum, Hippocrepis comosa and Plantago media, and occasional carlina vulgaris, Thymus polytrichus and Polygala vulgaris. Thesium humifusum, part of the vascular plants interest feature, occurs in favourable numbers. The best areas average a vegetation height of 5 to 20 cms and herb cover up to 60%, whilst taller patches occur of 30 to 40 cms with herb cover 10 to 40%. Scrub is at acceptable levels.A narrow calcareous flush near the western end of the unit contains abundant Juncus inflexus, frequent Mentha aquatica, Hyperium tetrapterum and Carex flacca, occasional Veronica beccabunga, Pulicaria dysenterica and Anagallis tenella, and rare Salmolus valerandi and Scrophularia aquatica.	

ANNEX 43

Townsend SSSI Condition Assessment (November 2022)

Report generated on: 04 Nov 2022

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment
Townsend SSSI - DORSET (PURBECK)								
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	001	1008075	12.9226	0.00	02/12/2013	Unfavourable - Recovering	
CALCAREOUS GRASSLAND - Lowland	MATTHEW LOW	002	1008076	0.9737	0.00	06/09/2012	Favourable	
INLAND ROCK	MATTHEW LOW	003	1008077	0.0781	0.00	25/01/2022	Unfavourable - Declining	

	Adverse Condition Reasons
	OTHER - OTHER - SPECIFY IN COMMENTS,

ANNEX 44

Existing and Proposed Hotel Occupancy

Existing and Proposed Hotel Occupancy Rates

	Full Capacity	**Peak Season (August/ Christmas)**
Existing Bedrooms	163 bedrooms in total (106 Guest bedrooms and 57 staff bedrooms)	90% Occupancy currently experienced = 147 occupied bedrooms
Existing no. of Guests/ Staff	Staff: 66 Guests: 273 Total people on site: 339	Staff: 59 Guests: 246 Total people on site: 305
Proposed Keys	78 Keys in Total	90% Occupancy Expected = 70 Keys
Proposed Guests	296 Guests on site (a decrease of 43 people on site from existing)	266 guests on site (a decrease of 39 people on site from existing)

ANNEX 45

Staff Questionnaire Survey Report (August 2021)

KINGFISHER RESORTS
STUDLAND LTD

ECOLOGYSOLUTIONS

Part of the ES Group

KNOLL HOUSE HOTEL,
FERRY ROAD,
STUDLAND

STAFF QUESTIONNAIRE SURVEY REPORT

August 2021
9405.SQ.report.VF

ecology solutions for planners and developers

CONTENTS

PLANS

ANNEXES

1. INTRODUCTION

1.1. Background

1.1.1. Ecology Solutions were instructed by Kingfisher Resorts Studland Ltdto undertake a staff questionnaire survey work at Land at Knoll House Hotel, Ferry Road, Studland, BH19 3AH (see Plan ECO1), hereafter referred to as the site.

1.1.2. The site is located in close proximity to Dorset Heathlands Special Protection Area (SPA) / Ramsar site (also designated as Studland & Godlingston Heath Site of Special Scientific Interest (SSSI), Dorset Heath and Studland Dunes Special Area of Conservation (SAC) and Poole Harbour SPA / Ramsar / Site of Special Scientific Interest (SSSI).

1.1.3. The development proposals are for the redevelopment of the existing 106-bedroom hotel (and 57 staff units) to create a new 30-bed hotel with 63 associated units (a mix of apartments, villas and maisonettes) but with no staff accommodation provided (planning application reference 6/2018/0566).

1.1.4. Natural England (NE) has requested further information in order to ascertain whether there would be any adverse effects on the above European designated sites. The central issue requiring clarification is with regard to hotel occupancy figures pre- and post-development and whether on-site staff should be included as part of the baseline occupancy numbers of the hotel. If existing staff numbers are included in the occupancy numbers pre-development (no staff will reside on site post-development) then, overall, fewer people will be residing on site in total in the post-development scenario.

1.1.5. In a meeting with NE on 6th April 2021, NE advised that a new survey of the existing on-site residential staff behaviours in terms of their usage of the heathland would be a useful data collection exercise that would help clarify this issue. This would supplement a prior visitor survey conducted in July-September 2018 (as reported in *'Visitor Survey Report'* by Focus Ecology Ltd. September 2018).

1.1.6. A staff questionnaire was subsequently agreed in consultation with NE and circulated to existing staff at the hotel in July 2021.

1.2. Purpose of the Report

1.1.1. The purpose of this report is to document the findings of the staff questionnaire surveys that have been undertaken in 2021.

2. METHODOLOGY

2.1. Staff Questionnaire

2.1.1. The staff questionnaire was produced by Ecology Solutions in close consultation with Natural England, and was based on principles put forward in visitor survey work by Clarke *et al.* (2006) on the Dorset Heathlands on behalf of English Nature (as was), and other studies in the Thames Basin Heaths region.

2.1.2. All existing staff at the hotel were asked to complete the questionnaire, giving details of their use of the nearby European designated sites in addition to other greenspace areas. A copy of the questionnaire is included at Annex 1 of this report.

2.1.3. 26 surveys were completed overall and the hotel is not at full staff capacity on site (recruitment proving difficult given the Covid-19 pandemic). However, the surveys still provide a robust indication of behaviours of on-site staff.

2.2. Analysis of Staff Questionnaire Results

2.2.1. When considering the current levels of recreational use and the behaviour of staff to nearby European designated sites all figures quoted throughout this report have been rounded to one decimal place, unless otherwise stated.

3. RESULTS AND EVALUATION

3.1. Staff Numbers and On-site Accommodation

3.1.1. A total of 26 responses have been completed to date.

3.1.2. 46.2% of the respondents have lived at the hotel for less than 1 year. 43.2% have lived there between 1-3 years and 11.5% have lived at the hotel for over 10 years.

3.1.3. 77% of the respondents live on site year-round whilst 23% live on site for 6 months of the year or less (minimum being 2 months of the year).

3.1.4. None of the respondents keep cats or dogs in the staff accommodation.

3.2. Use of European Designated Sites by On-site Staff

3.2.1. The most popular site used by on-site staff for recreational purposes is Knoll/Studland Beach (84.6% used this site). The local heathland designations were used by over half of the respondents (53.8%) and Poole Harbour was used by around a third of the respondents (34.6%).

3.2.2. It should be noted that in subsequent questions some respondents who did not tick that they visited local heathland sites at question 4 did provide responses about visits to local heathland sites at later questions which suggests the percentage here is underestimated. At question 10 there are 21 respondents as opposed to 14 at question 4 (and 19 in response to question 9). As such, the percentage of respondents visiting local sites is closer to 80.8% (based on respondents to question 10) as opposed to 53.8%.

3.2.3. Similarly, the number of those visiting Poole Harbour appears to be 15 (question 10) as opposed to 9 respondents (question 4); thus the percentage is 57.7% as opposed to 34.6% (based on respondents to question 10).

3.2.4. The routes in the local area used by the respondents can be seen on Plan ECO2. The plan has been colour coded to illustrate the number of respondents using the various paths (and thus those areas used more frequently). This shows use of most of the paths in proximity to the hotel. The most frequently used path appears to be along Studland Beach.

3.3. Use of Other Sites by On-site Staff

3.3.1. Other sites used in the local area by the respondents are set out in Table 1 below.

Site	% of respondents using this site
No Other Sites Used	46.2%
Old Harry Rocks	34.6%
Swanage	23.1%
Corfe Castle	19.2%
Kimmeridge Bay	11.5%
Bournemouth	11.5%
Poole	11.5%
Agglestone Rock	11.5%
Wareham	7.7%
Lulworth	7.7%
Winspit	3.85%
Durdle Door	3.85%
Durlston	3.85%
Brown Sea Island	3.85%
Sandbanks	3.85%
Studland Bay	3.85%
Knowl Hill	3.85%
Middle Beach	3.85%
South Beach	3.85%
Rempstone Cycle Route	3.85%
Local Pub	3.85%

Table 1. Other sites in local area used for recreation in spare time

3.3.2. It can be seen that almost half of the respondents did not use any other sites for recreation in their spare time and the alternative sites suggested are all generally used less frequently than the nearby European designated sites.

3.3.3. 2 respondents referred to using Studland Beach when responding about ‘other sites’ but this is one of the European designations referenced in question 4 and so those responses are not included in the above table.

3.4. Mode of Travel used by On-site Staff

3.4.1. Knoll/Studland Beach and local heathlands were primarily reached on foot with smaller numbers using car/motor vehicle or bus. Poole Harbour was primarily reached by car/motor vehicle or bus.

3.5. Frequency of Visits for Recreation

3.5.1. Table 2 below sets out the frequency of visits to each site for recreation purposes.

Frequency	Local Heathland	Knoll/Studland Beach	Poole Harbour	Other
Only visited once	5.3%	0	18.2%	10%
More than once a day	0	0	0	0
Daily (300+ visits / yr)	0	4.8%	0	10%
Most days (180-300 visits / yr)	10.5%	28.6%	0	10%
1-3 times a week (40-180 visits / yr)	36.8%	33.3%	9.1%	10%
2-3 times a month (15-40 visits / yr)	10.5%	23.8%	18.2%	50%
Once a month (6-15 visits / yr)	26.3%	9.5%	45.5%	10%
Less than once a month (2-5 visits / yr)	10.5%	0	9.1%	0

Table 2. Frequency of visits to sites for recreation in spare time

3.5.2. This demonstrates that around 50% and two thirds of the respondents visit the local heathland sites and Knoll/Studland beach respectively at least 1-3 times a week or more (i.e. a high frequency).

3.5.3. In contrast frequency of visits to destinations further afield, including Poole Harbour are visited less frequently (e.g. monthly or 2-3 times a month).

3.6. Timing of Visits for Recreation

3.6.1. Table 3 below sets out the frequency of visits to each site for recreation purposes.

Time of Week	Local Heathland	Knoll/Studland Beach	Poole Harbour	Other
Weekdays	11.1%	20%	9.1%	22.2%
Weekends	16.7%	10%	18.2%	0
Equally over weekdays and weekends	55.6%	60%	45.5%	55.6%
First Visit	0	0	9.1%	0
Other	16.7%	10%	18.2%	22.2%

Table 3. Timing of visits to sites used for recreation in spare time

3.6.2. This demonstrates that there is no real preference for weekdays or weekends for around half of the visits to all sites and the timing of visits tends to depend on the days off from work.

3.7. Purpose of Visits for Recreation

3.7.1. Table 4 below sets out the purpose of visits to sites for recreation purposes.

Frequency	Local Heathland	Knoll/Studland Beach	Poole Harbour
Walking	28.6%	22.1%	25%
Dog Walking	1.6%	0	0
Commercial Dog Walking)	1.6%	0	0
Jogging / Running / Exercise	9.5%	13%	8.3%
Cycling / Mountain Biking	4.8%	1.3%	4.2%
Horse-riding	1.6%	1.3%	0
Picnic / Outing	6.4%	14.3%	12.5%
Bird spotting / nature study	4.8%	1.3%	0
Enjoy Scenery	22.2%	22.1%	25%
Photography	11.1%	9.1%	8.3%
Meet up with Friends	7.9%	13%	16.7%
Short-cut through site	0	0	0
Swimming	0	1.3%	0
Water sports e/g/ Paddle-boarding / Canoeing	0	1.3%	0
Other	0	0	0

Table 4. Purpose of visits to sites for recreation in spare time

3.7.2. This demonstrates that the main purposes of visiting these sites is for walking and to enjoy the scenery with other reasons being less common.

3.7.3. As none of the respondents keep pets in the accommodation it is assumed that those stated they are using a site for dog-walking are walking someone else's dogs (or with someone who has dogs); in any event this is an infrequent purpose at these sites for the respondents.

3.8. Duration of Visits for Recreation

3.8.1. Table 5 below sets out the duration of visits to sites for recreation purposes.

Duration	Local Heathland	Knoll/Studland Beach	Poole Harbour
Under 30 mins	4.8%	4.2%	16.7%
30 mins - 1 hour	9.5&	4.2%	16.7%
1-2 hours	52.4%	33.3%	16.7%
2-3 hours	33.3%	41.7%	16.7%
3-6 hours	0	16.7%	25%
Over 6 hours	0	0	8.3%

Table 5. Duration of visits to sites for recreation in spare time

3.8.2. This demonstrates that most visits to the local heathland sites and Knoll/Studland Beach last around 1-3 hours with duration of visits to Poole Harbour more variable.

3.9. **Reasons for Choosing Sites for Recreation**

3.9.1. Table 6 below sets out the reasons for choosing sites for recreation purposes.

Frequency	Local Heathland	Knoll/Studland Beach	Poole Harbour
Close to Home / Convenient	10.5%	18%	8.8%
En route to another place	2.4%	1.7%	8.8%
Nearest greenspace	7.3%	3.4%	0
No need to use a car	8.1%	13.7%	2.9%
Good / easy / free parking	2.4%	0.9%	2.9%
Choice of routes	4.8%	1.7%	5.9%
All weather paths / well maintained	2.4%	2.6%	8.8%
Different route lengths / bigger or longer walks	5.7%	5.1%	8.8%
Large open areas	5.7%	7.7%	5.9%
Good for dog / dog enjoys it	1.6%	1.7%	0
No dog restrictions / can let dog off lead / feels safe to let dog off	0	2.6%	0
Sense of security / feels safe	3.2%	5.1%	5.9%
Peace and quiet / not many people	5.7%	4.3%	2.9%
Friendly / social aspects / meeting people	1.6%	6.8%	11.8%

Wildlife / Nature	9.7%	6%	2.9%
Variety of habitats	4.8%	2.6%	2.9%
Views / Scenery	9.7%	9.4%	11.8%
Rural feel / wild landscape	8.9%	2.6%	0
Habit / familiarity	5.7%	2.6%	5.9%
Don't know / others chose	0	0	0
Other	0	0.9%	2.9%

Table 6. Reasons for choosing sites for recreation in spare time

3.9.2. This demonstrates that there is no clear reason for visiting the local heathland sites although proximity to home (hotel) / being the nearest greenspace, scenery, rural feel, wildlife and no need to use a car are more commonly cited than other reasons. Proximity to home, scenery and no need to use a car also feature high on reasons for choosing Knoll/Studland Beach for recreation. Social aspects/meeting people and the scenery were the main reasons for choosing Poole Harbour.

3.10. Proportion of Visits for Recreation

3.10.1. Table 7 below sets out the proportion of visits to different sites for recreation purposes.

Proportion of Visits	Local Heathland	Knoll/Studland Beach	Poole Harbour
100%	6.7%	6.25%	0
75%-99%	33.3%	43.75%	0
50-74%	13.3%	31.25%	11.1%
25-49%	13.3%	0	22.2%
Less than 25%	33.3%	18.75%	66.7%
First Visit	0	0	0

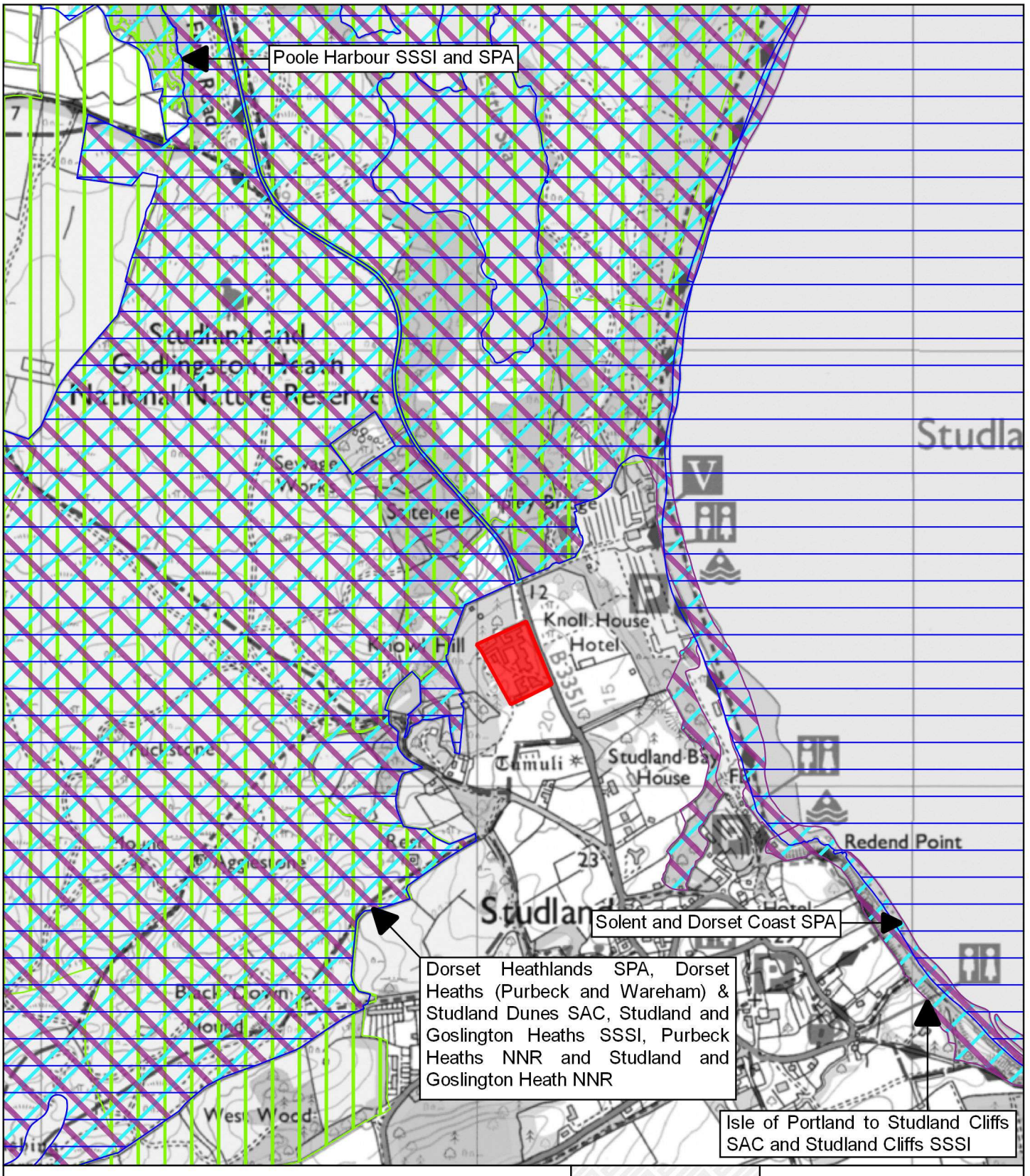
Table 7. Proportion of visits to sites for recreation in spare time

3.10.2. This demonstrates that a large proportion of visits by staff at the hotel are made to the local heathlands and Knoll/Studland Beach (latter with the highest proportion of visits) with a lower proportion of visits to Poole Harbour.

PLANS

PLAN ECO1

Site Location and SPA / SAC / Ramsar locations



KEY

- SITE BOUNDARY
- SPECIAL PROTECTION AREA (SPA)
- SPECIAL AREAS OF CONSERVATION (SAC)
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- NATIONAL NATURE RESERVES (NNR)

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND, SWANAGE

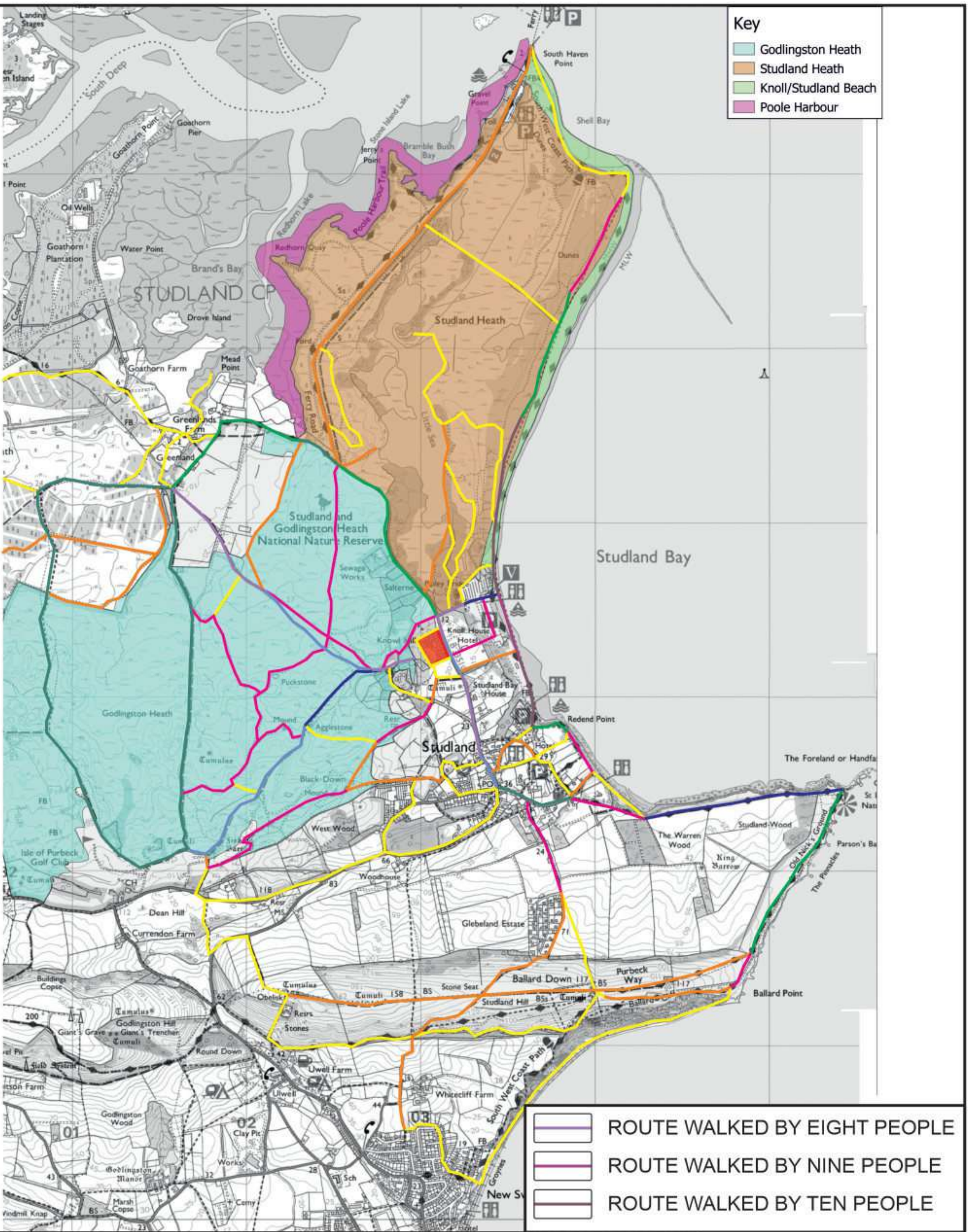
PLAN ECO1: SITE LOCATION AND SPA / SAC / RAMSAR LOCATIONS

Rev: A

Aug 2021

PLAN ECO2

Walking routes used by respondents



ROUTE WALKED BY EIGHT PEOPLE
ROUTE WALKED BY NINE PEOPLE
ROUTE WALKED BY TEN PEOPLE

KEY:

- SITE BOUNDARY
- ROUTE WALKED BY ONE PERSON
- ROUTE WALKED BY TWO PEOPLE
- ROUTE WALKED BY THREE PEOPLE
- ROUTE WALKED BY FOUR PEOPLE
- ROUTE WALKED BY FIVE PEOPLE
- ROUTE WALKED BY SIX PEOPLE
- ROUTE WALKED BY SEVEN PEOPLE

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND, SWANAGE

PLAN ECO2: WALKING ROUTES USED BY RESPONDENTS

Rev: A

Aug 2021

ANNEXES

ANNEX 1

Copy of Survey Questionnaire

Knoll House Hotel – Recreation and Access Questionnaire for Staff living on site (2021)

Q1 – How long have you worked at Knoll House Hotel?

Q2 – Do you live on site in staff accommodation whilst working at the Hotel and approximately how long have you lived there? *(Enter number of years – if less than 1 year, state <1)*?

Q3 – How many months of the year do you live on site in staff accommodation whilst working at the Hotel? *(Enter number of months – if less than 1 month, state <1)*

Q4 – Do you visit any of the following for recreational purposes? *(Tick all that apply)*

Local Heathland (e.g. Godlingston or Studland Heath)	
Knoll/Studland Beach	
Poole Harbour	

Q5 – If any of the above sites have been ticked, please draw any regular routes on the enclosed OS map and mark the location of any access points to the sites with an ‘x’.

Q6 – Do you visit any other sites in the local area in your spare time for recreational purposes? Please list sites and annotate on the enclosed OS map.

Q7 – Do you keep a dog or cat in your accommodation at the hotel. If so, please specify numbers of each.

Q8 – How do you travel to reach sites visited (as per Questions 4 and 6)? (*please specify mode of transport that applies for each site*)

MODE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR	OTHER (PLEASE SPECIFY SITE)
By car / motor vehicle				
On foot				
Bicycle				
Public transport (please specify)				
Other (please specify)				

Q9 – How frequently do you visit the sites given as answers to Questions 4 and 6? (*please specify frequency (one answer only) that applies to each site visited*)

FREQUENCY	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR	OTHER (PLEASE SPECIFY SITE)
Only visited once				
More than once a day				
Daily (300+ visits / yr)				
Most days (180-300 visits / yr)				
1-3 times a week (40-180 visits / yr)				
2-3 times a month (15-40 visits / yr)				
Once a month (6-15 visits / yr)				
Less than once a month (2-5 visits / yr)				

Q10 – Do you tend to visit the sites (as per questions 4 and 6) more at a particular time of year? (*please specify an answer (one answer only) that applies to each site visited*)

TIME OF YEAR	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR	OTHER (PLEASE SPECIFY SITE)
No – same throughout the year				
Yes – visit more in the summer				
Yes – visit more in the winter				
Yes – visit more in the spring				
Yes – visit more in the autumn				
Only visited once				

Q11 – Which days of the week do you tend to visit the sites (as per questions 4 and 6)? (*please specify an answer (one answer only) that applies to each site visited*)

TIME OF WEEK	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR	OTHER (PLEASE SPECIFY SITE)
Weekdays				
Weekends				
Equally over weekdays and weekends				
First visit				
Other (please specify)				

Q12 – If you visit any of the sites in question 4 what is the main purpose of your visit? (*tick any which apply and specify to which site each applies*)

PURPOSE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Walking			
Dog walking			
Commercial Dog Walking			
Jogging / Running / Exercise			
Cycling / Mountain biking			
Horse-riding			
Picnic / outing			
Bird spotting / nature study			
Enjoy scenery			
Photography			
Meet up with friends			
Short-cut through site			
Swimming			
Water sports e.g. Paddle-boarding / Canoeing			
Other (please specify)			

Q13 – If you visit any of the sites in question 4, roughly how long do you spend you spend there? (*please specify an answer (one answer only) that applies to each site visited*)

DURATION ON SITE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Under ½ hour			
½ hour to 1 hour			
1 hour to 2 hours			
2 hours to 3 hours			
3 hours to 6 hours			
Over 6 hours			

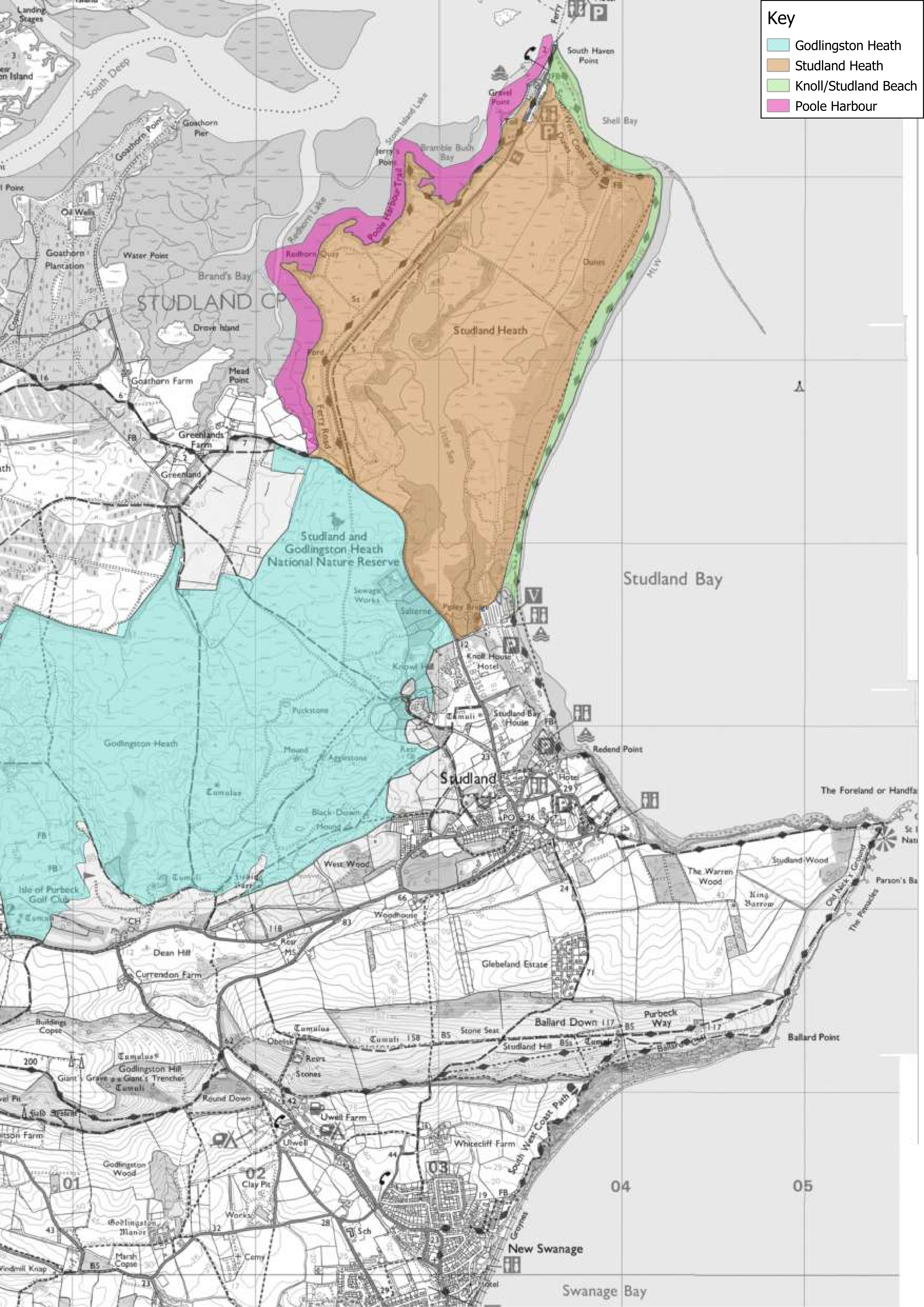
Q14 – If you visit any of the sites in question 4, why do you choose to specifically visit that location rather than another local site (*please specify an answer (tick all that apply) that applies to each site visited*)?

REASON FOR CHOICE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Close to home / Convenient			
En route to another place			
Nearest greenspace			
No need to use car			
Good / easy / free parking			
Choice of routes			
All weather paths / well maintained			
Different route lengths / bigger or longer walks			
Large open areas			
Good for dog / dog enjoys it			
No dog restrictions / can let dog off lead / feels safe to let dog off			
Sense of security / feels safe			
Peace and quiet / not many people			
Friendly / social aspects / opportunities to meet people			
Wildlife / nature			
Variety of habitats			
Views / scenery			
Rural feel / wild landscape			
Habit / familiarity			
Don’t know / others in party chose			
Other (specify below):			

Q15 – If you visit any of the sites in question 4, what proportion of your weekly visits for [dog walking, walking, etc.] take place here compared to other sites? Can you give a rough percentage (*please specify an answer (tick all that apply) that applies to each site visited*)?

PROPORTION OF VISITS	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
All take place here			
75% or more			
50-74%			
25-49%			
Less than 25%			
First visit			

Thank you this is the end of the questionnaire


Key
Godlingston Heath
Studland Heath
Knoll/Studland Beach
Poole Harbour
Studland Heath
Studland and
Godlingston Heath
National Nature Reserve
Godlingston Heath
Isle of Purbeck
Golf Club
STUDLAND CP
Studland Bay
Studland
Shell Bay
South Haven
Point
Gravel
Point
Bramble Bush
Bay
Jerry's
Point
Poole Harbour Trail
Redhorn Quay
Brand's Bay
Drove Island
Goathorn Point
Goathorn
Pier
Oil Wells
Goathorn
Plantation
Water Point
Goathorn Farm
Mead
Point
Greenlands
Farm
Greenland
Ferry Road
Little Sea
Dunes
South West Coast Path
Sewage
Works
Puckstone
Agglestone
Black Down
Knoll House
Hotel
Studland Bay
House
Redend Point
The Foreland or Handfa
Studland Wood
The Warren
Wood
King
Barrow
Old Nick's Ground
Parson's Ba
The Pinnacles
West Wood
Woodhouse
Dean Hill
Currendon Farm
Glebeland Estate
Ballard Down
Purbeck
Way
Ballard Point
Ballard Cliff
Studland Hill
Stone Seat
Obelisk
Buildings
Copse
Godlingston Hill
Giant's Grave
Giant's Trencher
Round Down
Uwell Farm
Uwell
Whitecliff Farm
Godlingston
Wood
Clay Pit
Works
Godlingston
Manor
Marsh
Copse
Windmill Knap
Cemy
New Swanage
Groynes
Swanage Bay
01
02
03
04
05

ECOLOGYSOLUTIONS

Part of the ES Group

Ecology Solutions Limited | Farncombe House | Farncombe Estate | Broadway | Worcestershire | WR12 7LJ

01451 870767 | info@ecologysolutions.co.uk | www.ecologysolutions.co.uk

ANNEX 46

Visitor Questionnaire Survey Report (October 2022)

BLACK BOX PLANNING LTD

ECOLOGYSOLUTIONS

Part of the ES Group

KNOLL HOUSE HOTEL,
FERRY ROAD,
STUDLAND

VISITOR QUESTIONNAIRE SURVEY REPORT

October 2022
9405.VQ.report.vf

ecology solutions for planners and developers

CONTENTS

PLANS

ANNEXES

1. INTRODUCTION

1.1. Background

1.1.1. Ecology Solutions were instructed by Kingfisher Resorts Studland Ltd to undertake a visitor questionnaire survey work at Land at Knoll House Hotel, Ferry Road, Studland, BH19 3AH (see Plan ECO1), hereafter referred to as the site.

1.1.2. The site is located in close proximity to Dorset Heathlands Special Protection Area (SPA) / Ramsar site (also designated as Studland & Godlingston Heath Site of Special Scientific Interest (SSSI), Dorset Heath and Studland Dunes Special Area of Conservation (SAC) and Poole Harbour SPA / Ramsar / Site of Special Scientific Interest (SSSI).

1.1.3. The development proposals are for the redevelopment of the existing 106-bedroom hotel (and 57 staff units) to create a new 30-bed hotel with 63 associated units (a mix of apartments, villas and maisonettes) but with no staff accommodation provided (planning application reference 6/2018/0566).

1.1.4. Natural England (NE) has requested further information in order to ascertain whether there would be any adverse effects on the above European designated sites. The central issue requiring clarification is with regard to hotel occupancy figures pre- and post-development.

1.1.5. NE advised on 4th August 2022 that a new survey of visitor behaviours in terms of their usage of the heathland would be a useful data collection exercise that would help clarify this issue. This would supplement a residential staff behaviour survey conducted in 2021 (as reported in '*Staff Questionnaire Survey Report*' by Ecology Solutions in August 2021), and a prior visitor survey conducted in July-September 2018 (as reported in *'Visitor Survey Report'* by Focus Ecology Ltd. September 2018).

1.1.6. This questionnaire was designed to align closely with the former staff questionnaires, as NE had agreed the scope of the staff questionnaires. The visitor questionnaires were distributed to NE before they were undertaken, however no response was received.

1.2. Purpose of the Report

1.2.1. The purpose of this report is to document the findings of the visitor questionnaire surveys that have been undertaken in 2022.

2. METHODOLOGY

2.1. Visitor Questionnaire

2.1.1. The visitor questionnaire was produced by Ecology Solutions in close consultation with Natural England and was based on principles put forward in visitor survey work by Clarke *et al.* (2006) on the Dorset Heathlands on behalf of English Nature (as was), and other studies in the Thames Basin Heaths region.

2.1.2. All visitors at the hotel over the dates of 30th/31st August 2022 and 3rd/4th September 2022 were asked to complete the questionnaire, giving details of their use of the nearby European designated sites in addition to other greenspace areas. A copy of the questionnaire is included at Annex 1 of this report.

2.1.3. 75 surveys were completed overall. 67% of occupants over both dates responded (43 out of 55 rooms during 30th/31st August, and 32 out of 57 rooms during the 3rd/4th September).

2.2. Analysis of Visitor Questionnaire Results

2.2.1. When considering the current levels of recreational use and the behaviour of visitors to nearby European designated sites all figures quoted throughout this report have been rounded to one decimal place, unless otherwise stated.

RESULTS AND EVALUATION

Visitor Numbers, Frequency of Visit and Travel

2.2.2. A total of 75 responses have been completed to date.

2.2.3. The duration of stay at the hotel is typically for less than five nights. Most visitors stayed for two nights (43.4%), and the longest stay recorded was for six nights (one respondent).

2.2.4. Respondents that stayed at the hotel toward the end of August (30th-31st) were more likely to stay for longer than the respondents who stayed at the hotel at the beginning of September (3rd-4th) (Figure 1).

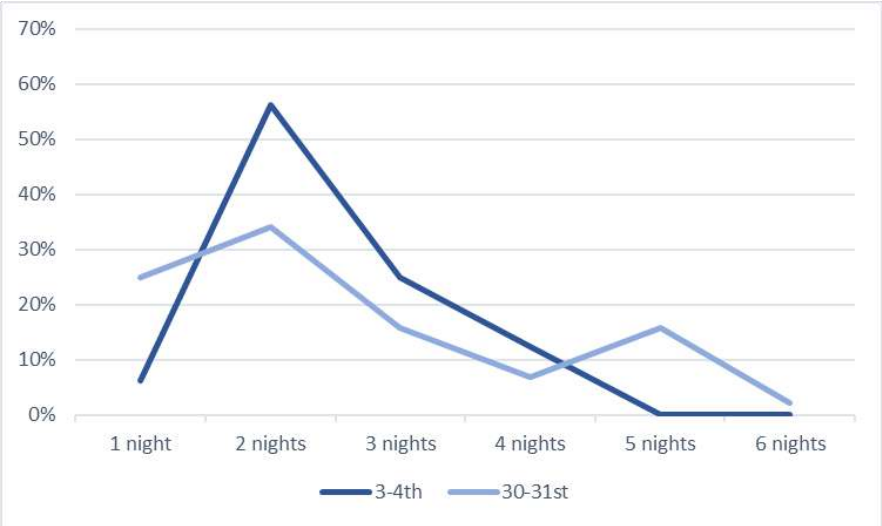


Figure 1. A percentage comparison of the length of stay of respondents at the end of August (30-31st) and the beginning of September (3rd-4th).

2.2.5. The average distance that visitors travelled to the hotel, based on the postcode that they provided for their home address, was 139 km. The greatest number of respondents (31.3%) lived between 100-149 km away from the hotel (Figure 2).

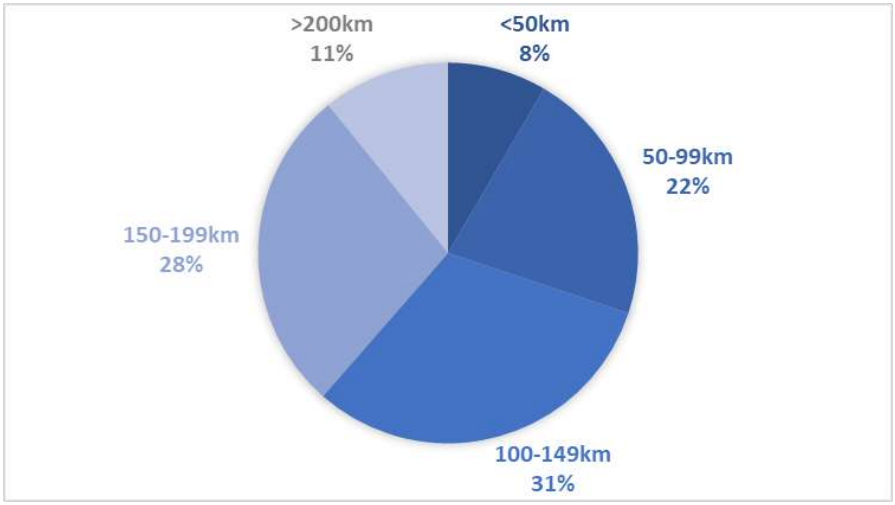


Figure 2. Percentage of distance travelled to hotel, based on their home postcode.

2.2.6. Respondents that stayed toward the end of August more typically travelled a greater distance (37.5% of respondents travelled between 150-199 km) than those who stayed at the hotel at the beginning of September (40.63% of respondents travelled between 100-149 km) (Table 1).

Table 1. The percentage of respondents' distance from the hotel at the end of August and the beginning of September 2022.

Period of stay	< 50 km	50-99 km	100-149 km	150-199 km	> 200 km
30th-31st August	4.2%	25%	25%	**37.5%**	8.3%
3rd-4th September	12.5%	15.6%	**40.6%**	15.6%	15.6%

2.2.7. All guests apart from one group used a car to travel to the hotel. One group comprising of four guests used a car and public transportation to travel to the hotel.

2.2.8. Visitors were more typically between the ages of 41-60 years old (48.9%). However, over the period of 30th/31st August, two disproportionately large groups of visitors between this age range were recorded from two questionnaires, one stating that there were 50 other people in their group staying in the hotel, and another individual stating that 42 other people in their group were staying in the hotel. It is uncertain whether the other 92 people from these groups filled out a questionnaire separately. If the combined number is deducted, the percentage of visitors between the ages of 41-60 would drop to 27.2% and would indicate that there is no significant difference across the four age groups. If one group is included, then most of the hotel respondents were between the ages of 41-60 (39%) (Figure 3).

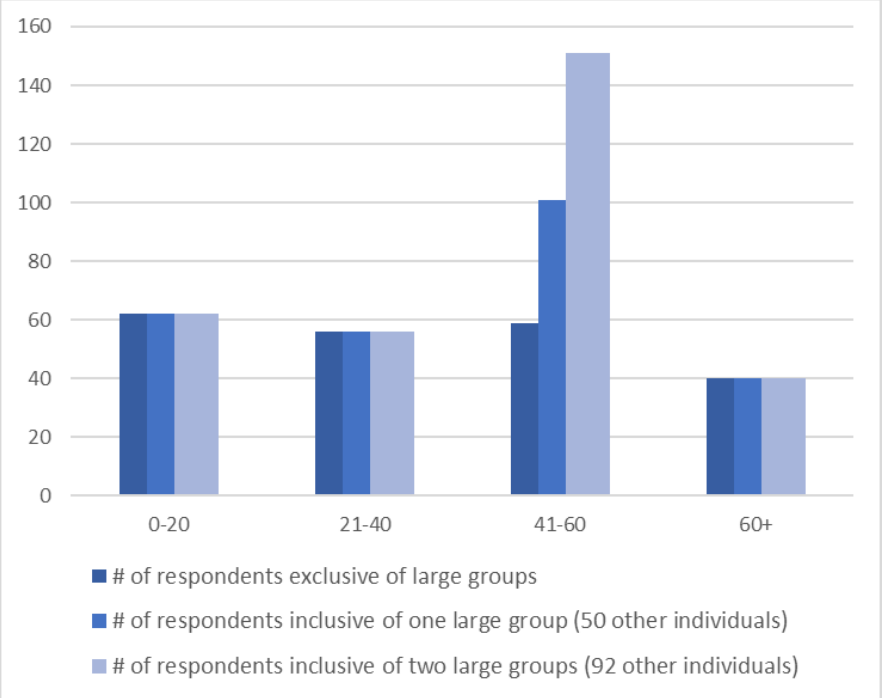


Figure 3. Number of respondents within each age group, exclusive of the large groups (dark blue) inclusive of one large group (medium blue) and inclusive of both large groups (light blue).

2.2.9. Half of respondents (50%) were staying at the hotel for the first time. 15.4% of respondents stay at the hotel once per year, and 12.8% stay twice per year (Figure 4). No significant difference was found between the respondents staying at the end of August compared to those staying toward the beginning of September.

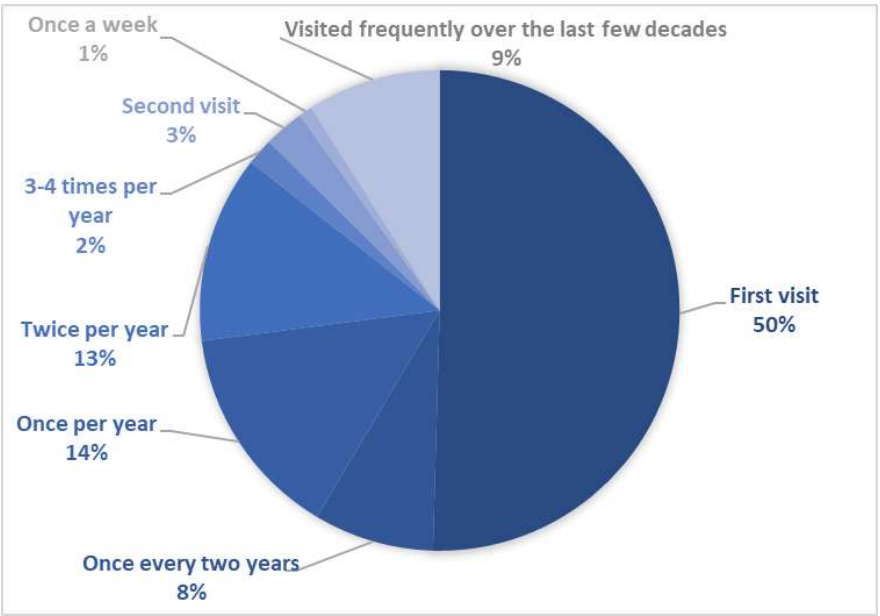


Figure 4. Frequency of visits.

2.3. Use of European Designated Sites by Visitors

2.3.1. The most popular site used by respondents for recreational purposes is Knoll/Studland Beach (98.7% used this site). The local heathland designations were used by over half of the respondents (54.7%) and Poole Harbour was used by over a tenth of the respondents (24%).

2.3.2. Respondents over both surveying periods followed similar preferences when visiting the European designated sites (Table 2).

Table 2. Percentage of respondents that visited the European designated sites at the end of August and the beginning of September 2022.

Site	30th-31st August	3rd-4th September
Local Heathland	53.5%	56.3%
Knoll/Studland Beach	100%	96.9%
Poole Harbour	23.3%	25%

2.3.3. The routes in the local area used by the respondents can be seen on Plan VQ1. The plan has been colour coded to illustrate the number of respondents using the various paths (and thus those areas used more frequently). This shows use of most of the paths in proximity to the hotel. The most frequently used path appears to be heading towards and along Knoll/Studland Beach. The route to Agglestone was also frequently used.

2.4. Use of Other Sites by Visitors

2.4.1. Other sites used in the local area by the respondents are set out in Table 3 below.

Table 3. Other sites in local area used by hotel occupants.

Site	% of respondents using this site
No other sites used	49.3
Swanage	25.3
Corfe Castle	12
Old Harry Rocks	8
Bournemouth	2.7
Wareham	2.7
Durdle Door	2.7
Isle of Purbeck Golf Club	2.7
South Beach	2.7
St. Aldhelms Chapel & Coast Path	2.7
Brownsea Island	2.7
East Creach	1.3
Dorset Adventure Park	1.3
Fore Adventure Kayaking Trip	1.3
Lots of local walks	1.3
Lulworth Cove	1.3
Middle beach	1.3
Nine Barrows Down	1.3
Other villages on route	1.3
Pinnacles	1.3
Shell Bay	1.3
RSPB Arne	1.3

2.4.2. It can be seen that 49.3% of respondents did not use any other sites for recreation and the alternative sites suggested are all generally used less frequently than the nearby European designated sites.

2.5. Mode of Travel used by Visitors

2.5.1. Knoll/Studland Beach, local heathlands and Poole Harbour were primarily reached on foot with smaller numbers using car/motor vehicle. One person used public transportation to reach Poole Harbour, one person used a bicycle to reach Knoll/Studland Beach, and another person used a bicycle to reach Poole Harbour.

2.6. Frequency of Visits to Sites

2.6.1. Table 4 below sets out the frequency of visits to each site.

Table 4. Hotel occupant frequency of visits to sites.

Frequency	Local Heathland	Knoll/Studland Beach	Poole Harbour	Other
Never	46.1%	7.9%	80.3%	81.6%
Once during stay	32.9%	31.6%	15.8%	18.4%
Twice during stay	9.2%	27.6%	2.6%	0%
Three times during stay	3.9%	15.8%	1.3%	0%
Once per day	5.3%	11.8%	0%	0%
Twice per day	2.6%	5.3%	0%	0%

2.6.2. This demonstrates that nearly half of respondents did not visit the local heathland sites at all during their stay. In contrast, many of the hotel occupants visited Knoll/Studland Beach once (31.6%), with many respondents visiting the beach multiple times during their visit.

2.6.3. Frequency of visits to destinations further afield, including Poole Harbour, are visited less frequently.

2.7. Purpose of Visits

2.7.1. Table 5 below sets out the purpose of visits to sites.

Table 5. Purpose of visits to sites, including number of responses and percentage of respondents who chose each purpose.

Purpose	Local Heathland	Knoll/ Studland Beach	Poole Harbour	Other
Walking	33 (86.8%)	57 (78.1%)	4 (33.3%)	1 (50%)
Enjoy scenery	26 (68.4%)	44 (60.3%)	4 (33.3%)	1 (50%)
Dog walking	12 (31.6%)	18 (24.7%)	1 (8.3%)	0
Photography	6 (15.8%)	8 (11%)	1 (8.3%)	0
Bird spotting/nature	4 (10.5%)	3 (4.1%)	1 (8.3%)	0
Jogging/running /exercise	3 (7.9%)	5 (6.8%)	1 (8.3%)	0
Meet up with friends	2 (5.3%)	9 (12.3%)	2 (16.7%)	0
Picnic/outing	4 (10.5%)	19 (26%)	0	0
Short-cut through site	1 (2.6%)	4 (5.5%)	2 (16.7%)	0
Other – Horse-riding	1 (2.6%)	1 (1.4%)	0	0
Swimming	2 (5.3%)	40 (54.8%)	1 (8.3%)	0
Water sports	2 (5.3%)	16 (21.9%)	2 (16.7%)	0
Other - Reminisce	1 (2.6%)	1 (1.4%)	0	0
Other – Family time	0	1 (1.4%)	0	0
Other - Boat trip	0	0	1 (8.3%)	1 (50%)
Other - Shopping	0	0	0	1 (50%)
Number of respondents	***38***	***73***	***12***	***2***

2.7.2. Most respondents used all three sites for walking and enjoying scenery. Over half of visitors to Knoll/Studland Beach used the site for swimming, and around a quarter of respondents walked their dog(s) here, whereas nearly a third of respondents enjoyed walking their dog(s) across the local heathlands.

2.8. **Duration of Visits**

2.8.1. Table 6 below sets out the duration of visits to sites.

Table 6. Duration of visits to sites.

Duration	**Local Heathland**	**Knoll/Studland Beach**	**Poole Harbour**
Under 30 minutes	2.6%	0%	6.3%
30 minutes – 1 hour	23.7%	10.7%	12.5%
1-2 hours	57.9%	29.3%	37.5%
2-3 hours	10.5%	29.3%	25%
3-6 hours	2.6%	22.7%	18.8%
Over 6 hours	2.6%	8%	0%

2.8.2. This demonstrates that respondents spent more time at Knoll/Studland Beach, with 30.7% of respondents spending at least 3 hours on this site. Most visits to the local heathland sites lasted around 30 minutes to 2 hours. Duration of visits to Poole Harbour more frequently lasted around 1-3 hours.

2.9. Reasons for Choosing Sites

2.9.1. Table 7 below sets out the reasons for visiting sites.

Table 7. Reasons for visiting sites including number of responses and percentage of respondents who chose each reason.

Reason	Local Heathland	Knoll/Studland Beach	Poole Harbour
Close to hotel/convenient	29 (72.5%)	67 (91.8%)	4 (30.8%)
Views/scenery	27 (67.5%)	39 (53.4%)	3 (23.1%)
No need to use car	23 (57.5%)	41 (56.2%)	0
Wildlife/nature	21 (52.5%)	24 (32.9%)	3 (23.1%)
Large open areas	18 (45%)	23 (31.5%)	1 (7.7%)
Rural feel/wild landscape	20 (50%)	17 (23.3%)	1 (7.7%)
Peace and quiet/not many people	18 (45%)	14 (19.2%)	1 (7.7%)
Good for dog/dog enjoys it	14 (35%)	18 (24.7%)	0
Variety of habitats	14 (35%)	17 (23.3%)	3 (23.1%)
Sense of security/feels safe	13 (32.5%)	18 (24.7%)	1 (7.7%)
No dog restrictions/can let dog off lead/feels safe to let dog off	8 (20%)	7 (9.6%)	0
Choice of routes	9 (22.5%)	4 (5.5%)	0
Different route lengths/bigger or longer walks	7 (17.5%)	3 (4.1%)	1 (7.7%)
Good/easy/free parking	7 (17.5%)	12 (16.4%)	2 (15.4%)
Nearest greenspace	7 (17.5%)	5 (6.8%)	0
All weather paths/well maintained	6 (15%)	10 (13.7%)	2 (15.4%)
En route to another place	3 (7.5%)	3 (4.1%)	5 (38.5%)
Friendly/social aspects/opportunities to meet people	3 (7.5%)	7 (9.6%)	2 (15.4%)
Other	5 (12.5%)	12 (16.4%)	0
Number of respondents	***40***	***73***	***13***

2.9.2. This demonstrates that one of the reasons that the majority of respondents visited local heathland sites and Knoll/Studland Beach was because of the close proximity of the site(s) to the hotel. Other

commonly cited reasons for visiting local heathland sites and Knoll/Studland Beach include the views/scenery and no need to use a car. Wildlife/nature, large open areas, rural feel and peaceful were also common reasons for respondents to visit local heathland sites.

2.9.3. Common reasons for respondents to visit Poole Harbour were because it was on route to another place or because it was close to the hotel/convenient, and because of the wildlife/nature, views/scenery, and variety of habitats.

Proportion of Visits

2.9.4. Table 8 below sets out the proportion of visits to different sites.

Table 8. Proportion of visits to sites.

Proportion of Visits	Local Heathland	Knoll/Studland Beach	Poole Harbour
100%	2.8%	14.3%	0%
75%-99%	8.3%	23.8%	0%
50-74%	5.6%	12.7%	0%
25-49%	36.1%	17.5%	16.7%
Less than 25%	30.6%	17.5%	58.3%
First visit	16.7%	14.3%	25%

2.9.5. This demonstrates that around 50% of respondents typically spent more than half of their time at Knoll/Studland Beach during their stay. Respondents visiting local heathland sites typically spent less than half of their stay here, whereas respondents that visited Poole Harbour typically spent less than 25% of their stay here. Poole Harbour also had more first-time visitors than the other two sites.

2.10. Dog Ownership

2.10.1. A total of 18 respondents had at least one dog with them during their stay at the hotel. Two of those respondents had two dogs with them during their stay.

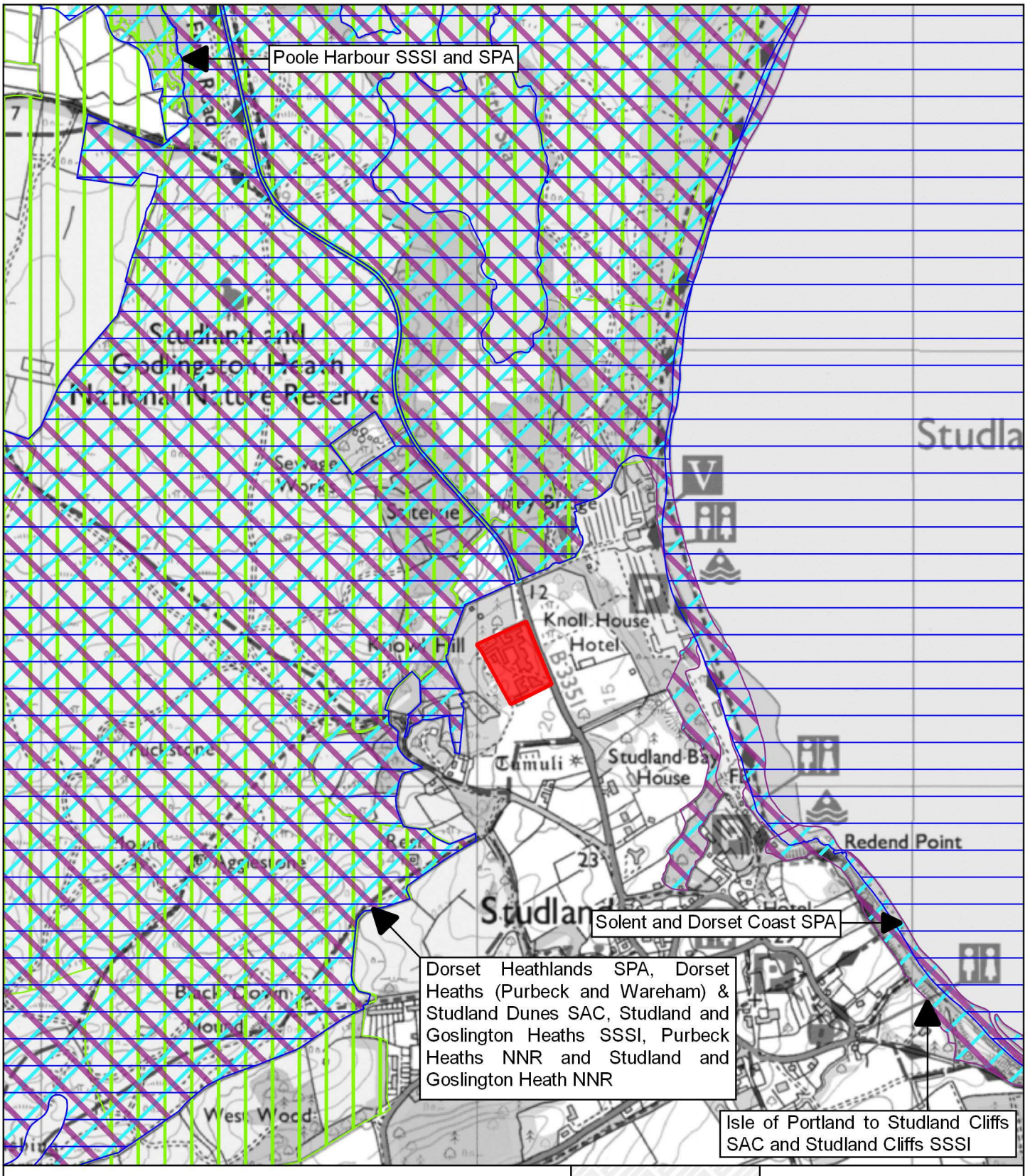
2.10.2. Sixteen of the respondents with dogs provided an answer to question 16 regarding dog litter bins on the sites. 43.8% of those respondents cited that there are enough dog litter bins at the local heathland sites, and 68.8% agreed the same for Knoll/Studland beach. All respondents that answered question 16 in relation to Poole Harbour cited that there are enough dog litter bins at this site (9 out of 16 respondents).

2.10.3. 77.8% of respondents with dogs stated that they would use a dog exercising area at least once a day, whereas 22.2% of respondents would never use it.

PLANS

PLAN ECO1

Site Location and SPA / SAC / Ramsar locations



KEY

- SITE BOUNDARY
- SPECIAL PROTECTION AREA (SPA)
- SPECIAL AREAS OF CONSERVATION (SAC)
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- NATIONAL NATURE RESERVES (NNR)

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND, SWANAGE

PLAN ECO1: SITE LOCATION AND SPA / SAC / RAMSAR LOCATIONS

Rev: A

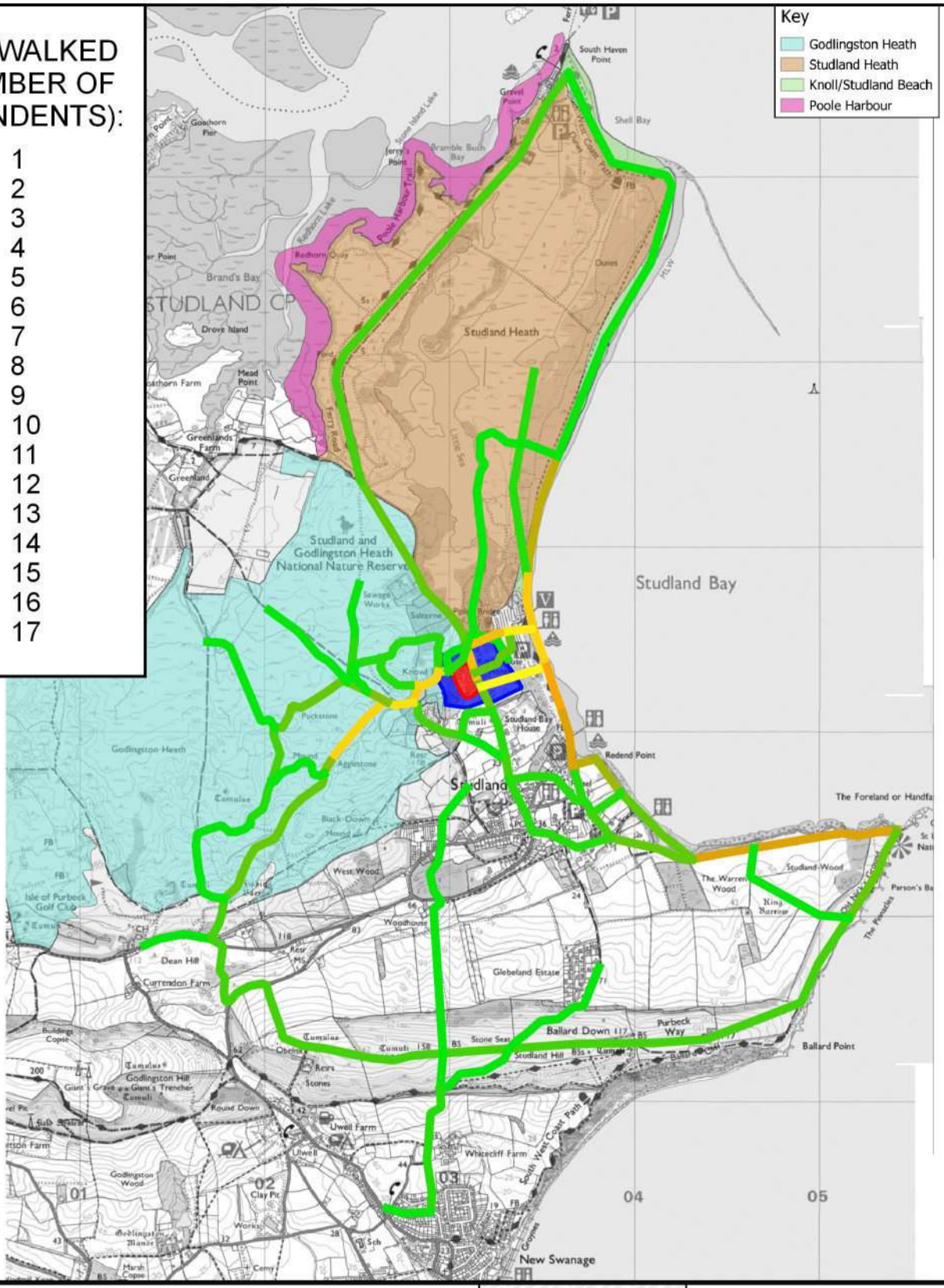
Aug 2021

PLAN VQ1

Walking routes used by respondents

ROUTE WALKED BY (NUMBER OF RESPONDENTS):

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17



KEY:

SITE BOUNDARY

WIDER STUDY AREA

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

9405: KNOLL HOUSE HOTEL, STUDLAND, SWANAGE

PLAN VQ1: WALKING ROUTES USED BY RESPONDENTS

Rev: A

Oct 2022

ANNEXES

ANNEX 1

Copy of Survey Questionnaire

Knoll House Hotel – Recreation and Access Questionnaire for Visitors (2022)

Date:

_____

Q1 – What is the duration of your stay at Knoll House Hotel?

Arrival Date	
Departure Date	

Q2 – Where do you live? (*Postcode*)

Q3 – How have you travelled to the hotel?

By car / motor vehicle	
On foot	
Bicycle	
Public transport (please specify)	
Other (please specify)	

Q4 – Age Band: *(INCLUDE NUMBER IN GROUP)*

0- 20		41 – 60	
21 - 40		60+	

Q5 – How frequently do you stay at Knoll House Hotel?

This is my first visit	
Once per year	
Twice per year	
Once every two years	
Once every five years	
Other (please specify)	

Q6 – Have you visited or are you planning to visit any of the following for recreational purposes? *(Tick all that apply)*

Local Heathland (e.g. Godlingston or Studland Heath)	
Knoll/Studland Beach	
Poole Harbour	

Q7 – If any of the above sites have been ticked, please draw any routes undertaken or proposed on the enclosed OS map and mark the location of any access points to the sites with an '**x**'.

Q8 – Have you visited, or are you planning to visit, any other sites in the local area (i.e. if they are visible on the enclosed map) during your stay for recreational purposes? Please list sites and annotate on the enclosed OS map.

Q9 – How have you travelled, or are proposing to travel, to reach sites visited (as per Questions 6 and 8)? (*please specify mode of transport that applies for each site*)

MODE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR	OTHER (PLEASE SPECIFY SITE)
By car / motor vehicle				
On foot				
Bicycle				
Public transport (please specify)				
Other (please specify)				

Q10 – How frequently have you visited / do you intend on visiting the sites given as answers to Questions 6 and 8? (*please specify frequency (one answer only) that applies to each site visited*)

FREQUENCY	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR	OTHER (PLEASE SPECIFY SITE)
Only visiting once during stay				
Visiting twice during stay				
Visiting three times during stay				
Visiting once per day				
Visiting twice per day				
Other (please specify)				

Q11 – If you have visited / are visiting any of the sites in question 6 what is the main purpose of your visit? (*tick any which apply and specify to which site each applies*)

PURPOSE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Walking			
Dog walking			
Jogging / Running / Exercise			
Cycling / Mountain biking			
Horse-riding			
Picnic / outing			
Bird spotting / nature study			
Enjoy scenery			
Photography			
Meet up with friends			
Short-cut through site			
Swimming			
Water sports e.g. Paddle-boarding / Canoeing			
Other (please specify)			

Q12 – If you have visited / are visiting any of the sites in question 6, roughly how long do you typically spend there? (*please specify an answer (one answer only) that applies to each site visited*)

DURATION ON SITE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Under ½ hour			
½ hour to 1 hour			
1 hour to 2 hours			
2 hours to 3 hours			
3 hours to 6 hours			
Over 6 hours			

Q13 – If you have visited / are visiting any of the sites in question 6, why do you choose to specifically visit that location rather than another local site (*please specify an answer (tick all that apply) that applies to each site visited*)?

REASON FOR CHOICE	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Close to hotel / Convenient			
En route to another place			
Nearest greenspace			
No need to use car			
Good / easy / free parking			
Choice of routes			
All weather paths / well maintained			
Different route lengths / bigger or longer walks			
Large open areas			
Good for dog / dog enjoys it			
No dog restrictions / can let dog off lead / feels safe to let dog off			
Sense of security / feels safe			
Peace and quiet / not many people			
Friendly / social aspects / opportunities to meet people			
Wildlife / nature			
Variety of habitats			
Views / scenery			
Rural feel / wild landscape			
Don’t know / others in party chose			
Other (specify below):			

Q14 – If you have visited / are visiting any of the sites in question 6, what proportion of your visits for [dog walking, walking, etc.] take place here compared to other sites? Can you give a rough percentage (*please specify an answer (tick all that apply) that applies to each site visited*)?

PROPORTION OF VISITS	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
All take place here			
75% or more			
50-74%			
25-49%			
Less than 25%			
Only visit			

Q15 – Are you staying at the hotel with a dog? If so, please specify number.

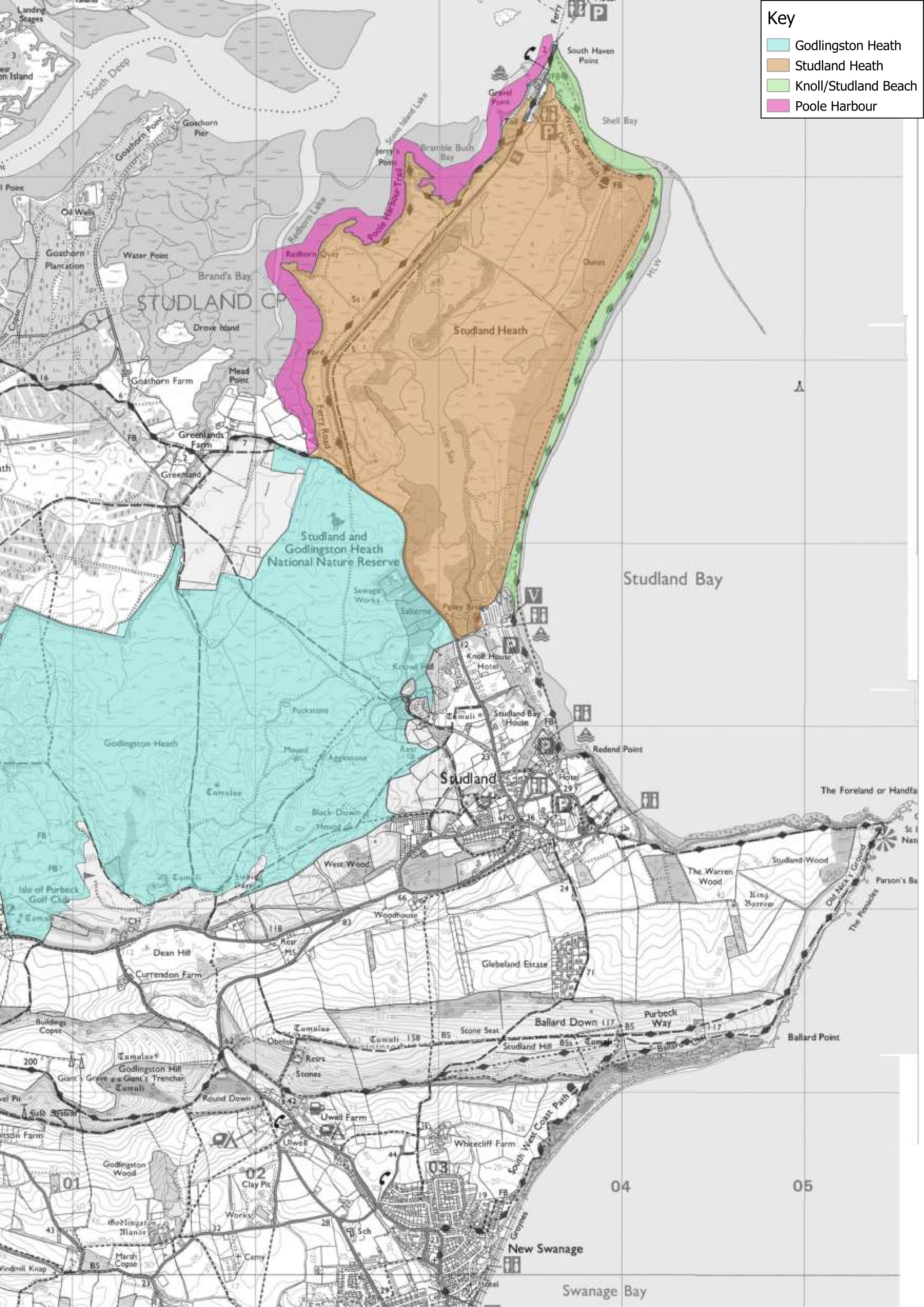
Q16 – If yes to question 15, do you consider an adequate number of dog litter bins are supplied at any of the sites detailed in question 6?

ADEQUATE DOG LITTER BIN PROVISION	LOCAL HEATHLAND (GODLINGSTON / STUDLAND HEATH)	KNOLL / STUDLAND BEACH	POOLE HARBOUR
Yes			
No			

Q17 – If yes to question 15, if a dog exercising area was made available within the hotel complex, how often would you use this?

FREQUENCY	
Never	
Once during stay	
Twice during stay	
Once per day	
Twice per day	
Other (please specify)	

Thank you this is the end of the questionnaire


Key
Godlingston Heath
Studland Heath
Knoll/Studland Beach
Poole Harbour
Studland Heath
Studland and
Godlingston Heath
National Nature Reserve
Godlingston Heath
Studland Bay
Studland
STUDLAND CP
Brand's Bay
Poole Harbour Trail
South Haven Point
Shell Bay
Gravel Point
Bramble Bush Bay
Jerry's Point
Redhorn Quay
Goathorn Point
Goathorn Pier
Oil Wells
Goathorn Plantation
Water Point
Drove Island
Goathorn Farm
Mead Point
Greenlands Farm
Greenland
Ferry Road
Little Sea
Dunes
South West Coast Path
MLW
Sewage Works
Salterne
Knowl Hill
Puckstone
Mound
Agglestone
Black Down
Isle of Purbeck Golf Club
Knoll House Hotel
Studland Bay House
Redend Point
Hotel
The Foreland or Handfa
Studland Wood
The Warren Wood
King Barrow
Old Nick's Ground
Parson's Ba
The Pinnacles
West Wood
Woodhouse
Dean Hill
Currendon Farm
Glebeland Estate
Ballard Down 117
Purbeck Way
Stone Seat
Studland Hill
Ballard Point
Buildings Copse
Tumulus
Godlingston Hill
Giant's Grave
Giant's Trencher
Tumuli
Obelisk
Rears
Stones
Round Down
Uwell Farm
Uwell
Whitecliff Farm
Godlingston Wood
Clay Pit
Works
Godlingston Manor
Marsh Copse
Windmill Knap
Cemy
Sch
New Swanage
Groynes
Swanage Bay
01
02
03
04
05

ECOLOGYSOLUTIONS

Part of the ES Group

Ecology Solutions Limited | Farncombe House | Farncombe Estate | Broadway | Worcestershire | WR12 7LJ

01451 870767 | info@ecologysolutions.co.uk | www.ecologysolutions.co.uk