PROPOSED NAVITUS BAY WIND PARK

PRELIMINARY ENVIRONMENTAL INFORMATION 3

CHAPTER 27
TERRESTRIAL AND FRESHWATER ECOLOGY

SEPTEMBER 2013

NAVITUSBAY

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27.TERRESTRIAL AND FRESHWATER ECOLOGY

27.6 Introduction

27.1. This chapter assesses the potential impacts on terrestrial and freshwater ecology arising from the construction, operational and maintenance ('O&M') and decommissioning phases of the onshore elements of the Navitus Bay Wind Park ('the Project'). For the purpose of this assessment, the Onshore Development Area comprises the following project elements: the cable landfall, a 35 km onshore cable and associated accesses, temporary compounds and a new proposed onshore substation. For details of the Project Description used within this assessment refer to Chapter 2, 'Navitus Bay Wind Park Project'.

27.2. Impacts on ornithological receptors in the terrestrial environment are assessed separately in Chapter 28, 'Onshore Ornithology'.

27.7 Legislation, Policy and Guidance

27.3. This section outlines the legislation, policy and guidance that are relevant to this assessment of the potential impacts on terrestrial and freshwater ecology associated with the Project.

27.7.1 International

27.4. The international legislation, agreements and conventions relevant to the Project include;

- United Nations Convention on Biological Diversity 1992 ('the Rio Convention');
- The Convention on Wetlands of International Importance, especially Waterfowl Habitat (The Ramsar Convention 1971);
- European Council Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora ('the Habitats Directive'); and
- The Convention on the Conservation of European Wildlife and Natural Habitats 1979 ('the Bern Convention').

27.7.2 National

27.5. The Overarching National Policy Statement ('NPS') for Energy ('EN-1'), in conjunction with the NPS for Renewable Energy Infrastructure ('EN-3') and NPS for Electrical Networks Infrastructure ('EN-5') provides the primary policy framework within which the Project will be assessed.

27.6. Table 27.1 provides a summary of the relevant provisions in EN-1, EN-3 and EN-5 with regard to the Terrestrial and Freshwater Ecology assessment, and how they have been considered within this chapter.

Table 27.1 Compliance with National Policy Statements	
Summary of NPS provision	Consideration within PEI
NPS EN-1; Part 5.3	
Paragraph 5.3.3 states *"Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity."*	This chapter (Impact Assessment section) and chapter 28, ornithology, will provide an assessment of internationally, nationally and locally designated sites of ecological importance. Potential effects on habitats and legally protected and notable species are considered within this chapter.
Paragraph 5.3.4 states *"The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests."*	The ES will describe the measures taken to conserve and enhance biodiversity conservation interests in the terrestrial environment.
NPS EN-3; Part 2.6	
Paragraph 2.6.65 states *"Consultation on the assessment methodologies should be undertaken at early stages with the statutory consultees as appropriate."*	Consultation with Natural England ('NE') is currently being undertaken throughout the pre-submission phase of the Project (see Table 27.2).
NPS EN-5; Part 2.7	
Paragraph 2.7.2 states *"Particular consideration should be given to feeding and hunting grounds, migration corridors and breeding grounds."*	The ES will consider the potential effects associated with the construction, O&M and decommissioning phases of the onshore infrastructure of the Project.

27.7. Other National legislation and policy that is relevant to the Project includes:

- Conservation of Habitats and Species Regulations 2010 (as amended, 2012) ('Habitats Regulations');
- Natural Environment & Rural Communities Act 2006 ('the NERC Act');
- Countryside and Rights of Way Act 2000 ('CRoW');
- Wildlife & Countryside Act 1981 (as amended) ('WCA');
- Badgers Act 1992;
- Hedgerows Regulation 1997; and
- National Parks and Access to the Countryside Act 1949 (as amended) ('National Parks Act');
- National Planning Policy Framework 2012 ('NPPF').

27.7.3 Regional and local

27.8. Regional and local policy that is relevant to the Project and captured in local planning policies include:

- New Forest District (outside the National Park) Core Strategy;
- Bournemouth, Dorset and Poole Structure Plan;
- Hampshire Local Biodiversity Action Plan; and
- Dorset Local Biodiversity Action Plan.

27.7.4 Guidance

27.9. The following guidance and best practice documents have informed the preparation of this assessment:

- Government Circular 06/05 Biodiversity and Geological Conservation ('Government Circular 06/05');
- UK Post 2010 Biodiversity Framework ('Biodiversity Framework');
- Defra (2012). Biodiversity 2020: A strategy for England's wildlife and ecosystem services;
- Defra (2002). Working with the grain of nature: A biodiversity strategy for England; and
- Institute of Ecology and Environmental Management ('IEEM' – now the Chartered Institute of Ecology and Environmental Management ('CIEEM')) Guidelines for Ecological Impact Assessment in the United Kingdom (2006).

27.8 Assessment Methodology

27.8.1 Study area

27.10. A Phase 1 habitat survey will be submitted in support of an application for development consent, which will identify habitats and the presence/potential presence of notable flora and fauna, comprising a broad corridor as shown in Figure 27.1. The surveys will include areas along the Onshore Cable Corridor, the Substation site and also includes the Landfall point down to the mean low water level. The desk study, (see Baseline Gathering Methodology section), focused on the examination of records of notable species and sites designated for nature conservation, within the Phase 1 survey area, and an additional 1.5 km wide buffer around it. Professional judgement, including experience of the types of ecological impacts that may arise from transmission cable and pipeline developments, was used to determine the width of the buffer around the Phase 1 survey area. The width of the buffer was agreed with Natural England ('NE') (Table 27.2).

27.11. At the time of producing this document, some areas along the route have not yet been accessed to carry out Phase I/II surveys. These are presented in Figure 27.1 as unsurveyed. Discussions are on-going with NE and relevant landowners to gain access to complete surveys and the results will inform the assessment submitted in support of the application for development consent.

27.12. Targeted species-specific surveys are being undertaken in areas that are being identified during the desk study and extended Phase 1 habitat survey, as providing suitable habitats for notable species (e.g. legally protected species). The areas cover both land around the onshore elements of the Project and adjacent areas where potential effects could occur. The extent of the survey areas for particular species is based on survey guidance (e.g. English Nature, 2001), consultation with NE and professional judgement.

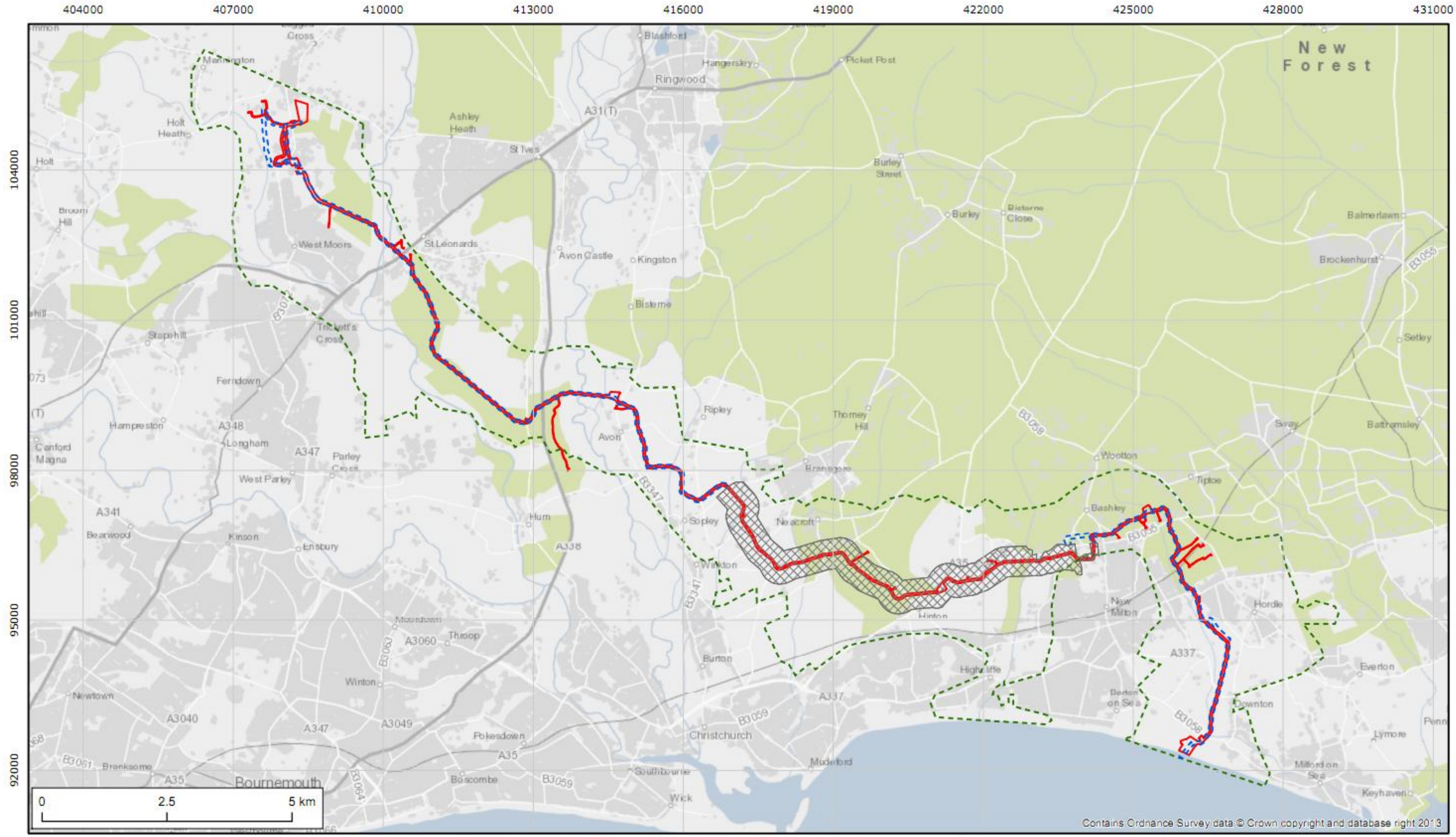
27.13. Ponds within 250 m of the Onshore Development Area have been surveyed for the presence of Great Crested Newts (English Nature, 2001). Signs of badger activity were searched for within the Onshore Development Area, and an additional survey buffer of 40 m and trees with the potential to support roosting bats were surveyed within the Onshore Development Area and an additional survey buffer of 15 m. Dormouse and reptile surveys are being undertaken within suitable habitat in the Onshore Development Area only.

27.14. Otter and water vole surveys along water courses are being extended 50 m up and downstream of the Onshore Development Area to ensure signs indicating the presence of these mobile species were not missed. Freshwater invertebrate surveys are also being extended beyond the Onshore Development Area to enable three sampling points to be used, at the centre of the Cable Crossing point and 50 m up and downstream. The Phase 1 survey area is shown on Figure 27.1.

27.8.2 Consultation

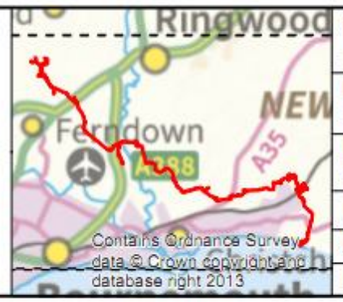
27.15. This section provides information on the consultations to date which have informed the assessment of terrestrial and freshwater ecological receptors. Advice and information provided by the consultees has shaped both the assessment methodology and the scope of the assessment. The organisations consulted and the topic of each contact is provided in Table 27.2.

27.16. Mitigation measures are being identified in discussion with relevant statutory consultees which will seek to minimise predicted impacts.



Legend

- Onshore Development Area
- Phase 1 Survey Area for Extended Phase 1 Habitat Survey
- Core Survey Area for Targeted Species Surveys (with additional survey buffers for bats of 15 metres, badgers of 40 metres and great crested newts of 250 metres)
- No Access to Survey in 2012



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Date: 10/08/2013		**Datum:** OSGB 1936
Ref. No.: 11832		**Data Source** OS ThomsonEcology
Fig. No.: Figure 27.1		
Author: NS		
Rv.No.: 01	**Checked:** TD	**Approved:** PF

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Onshore Cable Route Ecology Survey Boundaries

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Table 27.2 Consultation response		
Organisation and date	Summary of response	Consideration within Project
Scoping response		
Infrastructure Planning Committee ('IPC') (Scoping Response October 2011), now Planning Inspectorate	The ES should consider all potential impacts of the construction phase on ecological receptors. In addition to those identified in the Scoping Report, potential impacts may include, but may not be limited to, disturbance as a result of noise and vibration and fugitive dust emissions.	In addition to those identified in the Scoping Report, this chapter considers the issues of disturbance and pollution (including dust release) on ecological receptors.
	The ES should assess the potential impacts of the proposed development on local wildlife sites and UK Biodiversity Action Plan habitats and species.	The ES will consider the potential impacts on local designations and on habitats and species listed on the NERC Section 41 List of Species and Habitats of Principal Importance.
	The Applicant's attention is drawn to the comments of the Environment Agency with regard to assessing the potential impacts of the proposed development on ponds, seasonal ponds, wetlands and watercourses.	The ES chapter will consider the potential impacts on all habitats within or adjacent to the proposed onshore infrastructure.
	The Applicant's attention is drawn to the comments of the New Forest National Park Authority with regard to the presence of Lesser Horseshoe bats. The ES should assess the potential impacts of the proposed development on this species.	On-going surveys are being undertaken and will inform the assessment of the Project with regards to impacts on bats. No Lesser Horseshoe bats have been recorded to date during these surveys.
	Mitigation should include consideration of the impact on trees and hedgerows.	Habitats, including hedgerows and woodland, damaged or destroyed by the construction works would be mitigated as discussed in the Potential Mitigation section.
	The ES should identify opportunities for habitat enhancement.	Measures to enhance existing habitats are discussed in this chapter and will be further detailed in the ES that will form part of the application for development consent.

Table 27.2 Consultation response		
Section 42 responses to preliminary environmental information		
NE (letter 27/07/2012)	No net loss of biodiversity should result from the proposal and efforts should be made to ensure a biodiversity gain. Erosion of SSSI features at the Landfall should be addressed. NE recommended surveys are undertaken of water-bodies along the route for invertebrates such as Southern Damselfly and Medicinal Leech.	Measures designed to ensure no net biodiversity loss and to provide biodiversity gains would be detailed in the ES that will be submitted as part of an application for development consent. The design of the cable corridor aims to minimise, where possible impacts, on ecological receptors. Erosion at the Landfall point has been avoided through the implementation of embedded mitigation measures which are detailed in this assessment Freshwater invertebrate surveys are being undertaken as part of the survey scope.
Dorset County Council ('DCC') (letter 27/07/2012)	The effects of increased recreational usage of designated sites during the construction of the Onshore Cable route should be considered.	Impacts associated with increases in recreational usage of designated sites are discussed in the ornithological assessment (details can be found in Chapter 28, Onshore Ornithology).
Hampshire County Council ('HCC') (letter 30/07/2012)	Impacts on Sites of Nature Conservation Importance ('SNCI') should be avoided or minimised. The Hampshire Biological Information Centre and the Dorset Environmental Records Centre should be contacted to provide information relevant to the assessment.	Impacts on SNCIs and measures to avoid or minimise these are addressed in this chapter (Refer to the Embedded Mitigation section). Records from Hampshire Biological Information Centre ('HBIC') and the Dorset Environmental Records Centre ('DERC') were obtained in order to inform this assessment (details can be found in Survey Methodology section).
Christchurch Borough Council ('CBC') (Letter 07/08/2012)	The effects of increased recreational usage of designated sites during the construction of the onshore cable should be considered.	Impacts associated with increases in recreational usage of designated sites are discussed in the ornithological assessment (details can be found in Chapter 28, Onshore Ornithology).

Table 27.2 Consultation response		
Ringwood Town Council ('RTC') (Letter 26/07/2012)	All land crossed by the onshore cable route should be reinstated following construction to enable flora and fauna to regenerate.	The design of the Onshore Cable Corridor aims to minimise, where possible, impacts on identified habitats. Habitats, including hedgerows and woodland, damaged or destroyed by the construction works would be mitigated.
Hampshire & Isle of Wight Wildlife Trust (Letter 30/07/2012)	Planning for biodiversity gain should be integral to the project. The effects of decommissioning should be discussed.	Measures designed to ensure no net biodiversity loss and to provide biodiversity gains would be detailed in the ES that forms part of the application for development consent. The impacts associated with the decommissioning phase of the Project are discussed in this chapter.
Hurn Parish Council ('HPC') (Letter 30/07/2012)	The loss of trees is a major impact that will require mitigation.	The design of the Onshore Cable Corridor aims to minimise, where possible, impacts on identified habitats. Mitigation on habitats, including hedgerows and woodland, damaged or destroyed by the construction works would be detailed in the ES that forms part of the application for development consent.
Other consultations		
NE (Meeting 09/03/2011)	The Project was introduced to NE and proposed first phase surveys discussed. The geological value of the cliff at the landfall site was discussed. NE was informed that the cliff would not be damaged, as the cable would be installed between the intertidal area and the fields behind the cliff by a Horizontal Directional Drill ('HDD'). The potential for impact on the habitats within the Dorset Heaths was discussed. In principal it was agreed that construction activity in the area was possible due to heathland ability to regenerate. Issues regarding the fauna dependent on this habitat would, however, have to be considered. NE stated that they were unlikely to agree to any construction works that would result in the loss of ancient woodland.	The design of the cable corridor aims to minimise, where possible impacts, on heathland habitats. The ES will provide an assessment of the potential effects on heathland and woodland habitats and also identify mitigation and where practicable, ecological gain. Information on the potential effects on the geological features at the Landfall is discussed in Chapter 23, Ground Conditions and Soils. Impacts on ancient woodland would be avoided using mitigation. (Refer to the Impact Assessment section for details)

Table 27.2 Consultation response		
NE (Meeting 18/07/2011)	A project update was provided and interim survey results presented. NE stated that designated sites, including the River Avon and the Dorset Heaths should be avoided wherever possible. If any stabilisation of the cliffs at the landfall point (which are within a SSSI) is required this needs to be addressed in the planning submission. Difficulties with accessing certain areas of private land for survey were highlighted and discussed. It was highlighted that any crossing of the River Avon should be by the use of trenchless crossing techniques to minimise damage. Hurn Forest was highlighted as having limited ecological value in a number of areas due to the presence of a commercial forestry crop. However, open areas of remnant heath are present in many areas. The potential issue associated with reptiles in these areas was discussed. It was noted that the re-establishment of heathland habitats can be inhibited by the presence of clay soils. The potential impacts of construction works within the West Moors MOD site were discussed. NE stated that any work in the area should aim to avoid heathland. Non-native trees could be removed as part of the Project to improve the habitat present.	Designated sites have been avoided wherever possible during the design phase. The issue of coastal erosion at the Landfall point would be avoided through the use of HDD. Trenchless crossing techniques are to be used to cross the River Avon. The potential effects on habitats and species within Hurn Forest are addressed in this chapter. Heathland habitat restoration will be detailed in the ES that will form part of the application for development consent. The clearance of non-native trees and scrub within parts of the West Moors MOD site will be detailed in the ES.
Dorset Wildlife Trust ('DWT') (Meeting 05/09/2011)	DWT were provided with an update of the Project and the results of initial surveys were communicated. It was noted that wherever possible statutory and non-statutory sites should be avoided.	This chapter provides details of the assessment undertaken to date of statutory and non-statutory sites designated for ecological issues.
NE (Meeting 23/09/2011)	Initial survey results were presented and the remaining surveys outlined. The evolving cable corridor and substation locations were introduced and discussed.	The Onshore Cable Corridor, Landfall and substation location was informed in line with discussions with NE and other consultees.
NE (Letter 10/01/2012)	The proposed onshore cable corridor, in general, provides scope to avoid significant impacts on biodiversity. More information on construction techniques in woodlands and in the West Moors MOD site were requested for inclusion in future documents, the construction techniques being key to avoiding or minimising impacts.	The Onshore Cable Corridor, Landfall and Substation location was informed and designed in line with discussions with NE and other consultees.
DWT (Letter 16/12/2011)	DWT provided their views on the range of potential substation sites.	The Onshore Substation location was informed by consultation with DWT and other consultees.

Table 27.2 Consultation response		
NE and Environment Agency ('EA') (Meeting 06/03/2012)	Draft method statements prepared for the watercourse crossings and heathland were discussed.	Discussions regarding the practical issues of construction were taken into account when determining the specification of the Project.
NE (Meeting 21/03 2012)	Method statements for proposed ecological surveys were provided to NE in advance of the meeting and subsequently discussed. NE raised no objections to survey methodologies provided, including the extent of the survey areas. The need to provide adequate baseline information to inform the assessment was highlighted. The type of areas that could be targeted for use as receptor sites for rare reptiles were discussed. NE suggested that areas of re-planted conifer plantation with areas of remaining heath (or areas yet to be planted) would provide good opportunities.	Desk study and surveys were undertaken in accordance with methodologies discussed in the meeting. Mitigation measures for rare reptiles are subject to further consultation and will be presented in the ES that will form part of the application for development consent.
DWT (Meeting 19/07/2012)	A Project update was provided to DWT and the interim survey results presented. Potential impacts and mitigation were discussed.	Surveys were undertaken in accordance with methodologies discussed in the meeting.
Hampshire & Isle of Wight Wildlife Trust (Meeting 06/08/2012)	A Project update was provided to Hampshire & Isle of Wight Wildlife Trust and the interim survey results presented. Potential impacts and mitigation were discussed.	Surveys were undertaken in accordance with methodologies discussed in the meeting.
NE (Meeting 23/10/12)	Mitigation for woodland clearance, such as scalloping the edges of rides and the replanting of species such as blackthorn and holly to break up edges, was discussed. Dead wood could be retained and overhanging trees could be pollarded rather than removed. Bechstein's bat was noted as having been recorded in West Dorset and records should be checked for this species. The approach to the bat surveys was agreed as appropriate. Dormice were noted as occurring in unusual habitats in Dorset (as well as those traditionally associated with this species) and are often transient. The survey effort was discussed and was agreed as appropriate. Badger and reptile survey efforts were outlined, discussed and the effort agreed as being appropriate. The lack of survey access to certain areas of private land was discussed. It was agreed that a characterisation of the area could be undertaken if no survey was possible. Any required mitigation could be provided through the provision of method statements.	The woodland restoration plans will be provided in the ES that will form part of the application for development consent. The local bat groups provided their data to HBIC and DERC. These organisations supplied data that was used to inform the ecological baseline. The survey programme is progressing as discussed with NE.

Table 27.2 Consultation response		
DWT and Royal Society for the Protection of Birds ('RSPB') (Meeting 16/11/2012)	Background on survey methodologies and results of the terrestrial and freshwater ecology programme were discussed. DWT and RSPB agreed in principal that the survey programme appeared suitable.	The ecological survey programme is being undertaken following the methodologies discussed with relevant consultees.
NE (Meeting 30/01/2013)	The results of the 2012 survey programme were presented to NE. Possible impacts on Southern Damselfly were raised as a potential issue; it was noted that the survey data collected in 2012 would not pick up this species.	Survey for Southern Damselfly will be undertaken and assessed in the ES that will form part of the application for development consent.
NE (Meeting 03/05/2013)	Further surveys to be undertaken in 2013 were outlined to cover hedgerows, habitats, freshwater invertebrates (including Southern Damselfly), dormice, bats and National Vegetation Classification ('NVC') survey. It was agreed that the proposed survey programme covered outstanding data gaps.	The survey programme discussed is being carried out.

27.8.3 Scope of the assessment

27.17. A Scoping Report was submitted in September 2011 for the Project to the Infrastructure Planning Commission ('IPC'), now the Planning Inspectorate. The IPC issued a Scoping Opinion in November 2011; this included comments from various stakeholders.

27.18. The IPC, NE, East Dorset District Council ('EDDC'), West Dorset District Council ('WDDC'), New Forest National Park Authority ('NFNPA') and Lyndhurst Parish Council (in a separate response) all highlighted the necessity of undertaking an assessment of the potential impacts on ecology and nature conservation within the onshore environment.

27.19. The scoping responses, and other consultations (see Table 27.2), are being taken into account in the preparation of the ecological baseline and the assessment presented within this chapter. The specific issues addressed include sites designated for nature conservation interest, the loss of habitat, the potential disturbance/displacement of notable fauna and issues regarding legal compliance.

27.20. Effects on Sites of Special Scientific Interest ('SSSI'), Local Nature Reserves ('LNR') and non-statutory sites, Sites of Importance for Nature Conservation ('SINC') and Sites of Nature Conservation Importance (SNCIs) are addressed in this chapter.

27.21. The surveys and assessment are on-going and therefore there will be further consultation to discuss the findings and where necessary potential mitigation. Therefore in the remainder of the chapter, the predictions of impacts are preliminary and are necessarily high-level. Impact levels are therefore set out on a precautionary basis at this stage.

Issues scoped out

27.22. Completion of an impact assessment is not required for all features and all activities. Embedded mitigation within the Project is expected to avoid impacts on some ecological features for some or all of the identified development activities.

27.23. Temporary habitat loss and disturbance of fauna could occur during construction, O&M and decommissioning of the Project, however during the O&M phase the potential for these impacts to occur is low. Construction would likely result in the most widespread effects, with the majority of the area within the onshore development area being subject to some activity. During decommissioning there could also be effects, however as the decommissioning activity would largely be confined to the joint bays and substation, any impact would be more geographically restricted. Development activities and mechanisms with the potential to have a significant effect on ecological features are summarised in Table 27.11.

27.24. As development activities will be confined to within the onshore development area and potential pollution events will be controlled by adherence to Environment Agency Pollution Prevention Guidelines, there are no likely significant impacts to designated sites outside, and not immediately adjacent, to the Onshore Development Area. These sites have been scoped out from the impact assessment.

27.25. Each ecological receptor would be considered in relation to each development activity in Table 27.11. Features are scoped out from requiring further assessment, either because they have a low nature conservation value, because impacts are avoided by embedded mitigation, or because the development activities identified are unlikely to have a significant impact on the feature (e.g. there is no clear pathway of effect).

27.26. A summary of the ecological features and development activities for which an impact assessment is required is given in Table 27.9.

27.8.4 Impact assessment methodology

27.27. The methods used to evaluate the ecological resources established through the desk study, extended Phase 1 habitat survey and further species-specific surveys, is based on the Institute of Ecology and Environmental Management ('IEEM' – now the Chartered Institute of Ecology and Environmental Management ('CIEEM')) Guidelines for Ecological Impact Assessment in the United Kingdom (2006).

Evaluating the importance of the ecological feature

27.28. The results of the baseline surveys are used to identify important ecological features. The nature conservation value of each of the features is outlined in the Baseline Environment section of this chapter.

27.29. The methods used in the evaluation follow the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines to determine the conservation value of an ecological feature within a defined geographical context using the following geographic scale:

- International;
- UK;
- National (i.e. England);
- Regional;
- County;
- District;
- Local or Parish; and
- Within the zone of influence only.

27.30. In this assessment, the zone of influence is considered to be the area occupied by the Onshore Cable Corridor, landfall point and Onshore Substation. Where appropriate the assessment will consider onshore effects of offshore activities, such as on migratory fish.

27.31. The criteria for evaluation are based on the CIEEM guidelines and (Ratcliffe, 1977) and include primary criteria of native status, rarity, level of threat and proportion of total, and secondary criteria of history of presence, links to other populations, cultural interest/aesthetic appeal and economic importance. The potential impacts will not be considered at the evaluation stage.

27.32. Ecological receptors (i.e. flora, fauna and habitats) may be listed as rare, threatened or of conservation concern on published lists (e.g. NERC Section 41 list) or provided with legal protection (e.g. through the WCA). These listings, or legal protection, can be used to define conservation value on the geographical scale. However, it is the status of the receptor present within the survey area or Onshore Development Area boundary that is evaluated within this chapter. The conservation value conferred on each receptor recorded during the surveys is guided by, but likely to differ from, that given in Table 27.3. For example, an exceptionally large aggregation of a species listed on the Local BAP may be considered to be of greater than county conservation value, or a single record of a European protected species is unlikely to warrant an evaluation of international importance.

Table 27.3 Published lists and site designations

List	Level of importance
Species listed on Schedule 2 of the Habitats Regulations SACs and Ramsar Sites	International
Species listed on Schedule 5 of the WCA SSSIs	UK
Habitats and Species of Principal Importance (NERC Section 41 list)	National
Dorset or Hampshire Local BAP Species and Habitats Local Wildlife Sites Ancient woodland	County

27.33. For the purposes of this assessment, ecological features with a 'local' or lower conservation value would not be considered within the impact assessment, as the nature of the works is such that significant impacts, in terms of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended), would not be realised. However, an impact assessment would be undertaken for all legally protected species, even if determined to be of local or lower nature conservation value in line with CIEEM guidance.

Scoping

27.34. Following the valuation of the receptors a further scoping assessment takes place prior to impacts being assessed in detail. This step ensures that detailed assessment is not carried out for receptors that have a low nature conservation value, are shielded from impacts through the implementation of embedded mitigation or where there is no clear pathway of effect linking them with the development activities.

Assessing impacts

27.35. The Impact Assessment section of the ES that will form part of the application for development consent will present an impact assessment for all ecological features which have not been scoped out. At this stage the assessment considers the impacts without additional mitigation. However embedded mitigation is taken into account which is mitigation built into the development design. In some instances, embedded mitigation is sufficient to prevent any significant impacts from occurring. Additional mitigation is added after the impact assessment, to reduce any identified likely significant impacts.

27.36. Following CIEEM guidance, impacts are characterised using the following parameters:

- Magnitude – refers to the 'size' or 'amount' of an impact, determined on a quantitative basis wherever possible;
- Extent – the area over which the impact occurs (may be synonymous with magnitude when the feature is a habitat);
- Duration – the time for which the impact is expected to last prior to recovery or replacement of the feature;
- Reversibility – an irreversible (permanent) impact is one from which recovery is not possible within a reasonable timescale or for which there is no reasonable chance of action being taken for reversal. A reversible (temporary) impact is one from which spontaneous recovery is possible or for which effective mitigation is both possible and an enforceable commitment has been made; and
- Timing and frequency – the timing of an impact that coincides with critical life stages or seasons and the number of times the impact is repeated.

27.37. Any impacts that are not significant at the geographical level at which a receptor is valued can be significant at a more local level. For example, the loss of a small area of habitat of national value may not result in a significant impact at this level (i.e. it represents a very small percentage of the total national resource), however it may be significant at the county level if the habitat is scarce locally.

27.38. The likelihood of an impact occurring is given with each assessment based on the four-point CIEEM scale:

- Certain/near certain – probability estimated at 95% chance or higher;
- Probable/likely – probability estimated between near-certain and 50:50;
- Unlikely – probability estimated less than 50:50 but higher than 5%; or
- Extremely unlikely – probability estimated at less than 5%.

27.39. Impacts can be positive or negative and are defined as significant or not significant at a particular geographical level. An impact may be observable but not significant. Following CIEEM guidance, an ecologically significant impact is defined as an impact on the integrity of a designated site or the conservation status of a habitat or species within a given geographical area. If an impact is not likely to have an adverse or positive effect on the favourable conservation status of a species or habitat, or stop recovering species or habitats from reaching favourable conservation status, then it is not considered significant.

27.40. For species, conservation status is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area. The known distribution, abundance and likely trends and variations in population size are considered.

27.41. Conservation status of natural habitats is the sum of influences acting on a natural habitat, and its typical species, that may affect its long-term natural distribution, structure and functions, as well as the long-term survival of its typical species within a given geographical area.

27.42. The use of the CIEEM guidance within this assessment has been followed as it represents current best practice for ecological assessments within the UK. However, following the conclusion of the assessment it is necessary for professional judgement to be used to determine whether the significant impacts identified at various geographical levels are Significant or Not Significant with regard to the EIA Regulations.

27.8.5 Limitations and embedded mitigation

Limitations

27.43. The Onshore Development Area boundary had not been finalised at the time when some of the ecological surveys were undertaken in 2011 and 2012 and there was no access consent granted to survey a part of the route (shown as 'no access to survey' on Figure 27.1). Consequently not all areas within the Onshore Development Area boundary have been included in the ecological surveys at this stage. Further surveys are currently being undertaken and results will be presented in the ES that will form part of the application for development consent.

Embedded mitigation

27.44. The assessment within this chapter takes into account mitigation measures that have been incorporated into the Project as part of the design process, and other measures that are considered standard practice within the construction industry. Together these measures are termed 'embedded mitigation'. Embedded mitigation is distinct from additional mitigation which is applied following the identification of potentially significant impacts. The embedded mitigation measures that are directly relevant to terrestrial and freshwater ecological receptors are:

- Route design - the design of the cable route has avoided (wherever possible) statutory and non-statutorily designated sites, woodlands, heathland and other sensitive habitats, see Figures 27.2, 27.3 and 27.4;
- Trenchless techniques for cable installation - the use of trenchless techniques are being proposed to avoid or minimise impacts on ancient woodlands, heathland habitat on the West Moors MOD site (part of Dorset Heaths SAC) and the River Avon (River Avon SAC) by reducing or removing surface disturbance during the installation of the cables;
- Habitat restoration would be undertaken following completion of cabling installation works in each section (i.e. between joint bays). Habitats would be restored in line with consultation from NE and with relevant landowners;
- Where the Onshore Cable Corridor would cross sensitive features, these would be avoided if feasible;
- Open trenching works would primarily be undertaken between the months of March and October. In some areas open trenching may take place outside of this period, however this would be agreed prior to work commencing with NE;
- The Environment Agency Pollution Prevention Guidelines would be followed during all works (including dust suppression measures) to minimise damage to habitats and/or food resources used by associated fauna and to prevent direct toxic effects on individual animals;
- Where areas of woodland (other than coniferous plantation) are to be felled, restoration work post-construction would consider re-planting outside of the permanent cable easement. The permanent easement would be restored to form a woodland ride, and designed to provide 'edge' features to enhance their ecological interest. This reinstatement would be agreed with NE and the relevant landowner; and
- Further pre-construction ecological and protected species surveys would be undertaken prior to the construction works;
- Where necessary, mitigation measures will be identified, in discussion with relevant statutory consultees, that will seek to minimise predicted impacts. Further details of the embedded mitigation to be adopted (such as associated with the construction techniques and approach) will be included within the ES that will form part of the application for development consent.

27.45. It is anticipated that with this agreed embedded mitigation the potentially significant effects identified for the Project could be minimised or avoided. In some instances, embedded mitigation is sufficient to prevent any significant impacts from occurring.

27.9 Baseline Environment

27.46. The following section details the baseline data gathering methodology for the assessment, data sources used and survey methodology undertaken to date.

27.9.1 Baseline data gathering methodology

Data sources

27.47. Table 27.4 provides information on the organisations from which relevant contextual information was requested. The information gathered was used to both inform the baseline and aid the development of the survey programme.

Table 27.4 Desk study data sources

Source	Methods
Hampshire Biodiversity Information Centre (HBIC)	Information on non-statutory sites designated for nature conservation and records of protected and notable species within 1.5 km of the survey area were requested from HBIC and DERC. These data were provided for both counties.
Dorset Environmental Records Centre (DERC)	
NE and Joint Nature Conservation Committee ('JNCC')	Information on statutory designated sites (Ramsar sites, ('SAC'), Special Protection Areas ('SPA'), Sites of Special Scientific Interest ('SSSI') and Local Nature Reserves ('LNR') was gained from publically accessible data sets supplied (as GIS layers) by NE and JNCC.

Survey methodology

27.48. The existing status of the habitats and notable species along the Onshore Cable Corridor was determined by undertaking a desk study, an on-going extended Phase 1 habitat survey and on-going species-specific-surveys. The main objective of the survey programme was to provide baseline data to inform an impact assessment for the construction, O&M and decommissioning phases of the onshore infrastructure associated with the Project.

27.49. Table 27.5 provides a summary of the field surveys that have been undertaken to date to inform the assessment.

Table 27.5 Field survey summary

Survey	Methods
Extended Phase 1 Habitat Survey	An extended Phase 1 habitat survey of a wide search area is on-going and includes the current Onshore Cable Corridor and Onshore Substation and follows standard methodology (JNCC, 2007). Areas that have the potential to support notable flora and fauna are highlighted. The survey was conducted in August 2011.
Hedgerow Survey	A hedgerow survey following the Hedgerow Survey Handbook (Defra, 2007) was undertaken on all hedgerows within the Onshore Development Area. This survey was completed in June 2013.

Table 27.5 Field survey summary	
Survey	Methods
Great Crested Newt and Other Amphibians	The extended Phase 1 survey area was found to support suitable aquatic and terrestrial habitat for Great Crested Newts (*Triturus cristatus*). Records of great crested newts were provided by HBIC and DERC for the desk study area. Water-bodies within the Onshore Development Area and an additional 250 m survey buffer, have been identified from the on-going extended Phase 1 habitat survey and examination of Ordnance Survey (OS) mapping. A Habitat Suitability Index (HSI) assessment (ARG UK, 2010) for great crested newts has been undertaken on all water-bodies to date. Presence/probable absence surveys for great crested newts are being undertaken on all water-bodies found to be suitable, where access was available. Other amphibian species were also recorded during the surveys to date. A total of 42 water-bodies have been surveyed. Surveys were undertaken in April and May 2012. Survey methodology follows standard guidelines (English Nature, 2001).
Hurn Forest and West Moors Plantation Reptile Survey	A reptile survey in Hurn Forest and West Moors Plantation was undertaken using visual search methods and through the placement and checking of artificial refugia in September and October 2011. Survey methodology follows Froglife Advice Sheet 10 (Froglife, undated).
Reptile Survey	Reptile surveys were undertaken between April and June 2012 at 21 sites within the Onshore Development Area. These sites were identified as suitable for reptiles from the Phase 1 habitat survey.

Table 27.5 Field survey summary	
Survey	Methods
Bat Roost Survey	Trees with potential as bat roosts, and areas with potential as foraging and commuting habitat, are being identified using information from the desk-study, ongoing Phase 1 habitat surveys and site walk-overs. Trees with bat roost potential in the Onshore Development Area, and an additional 15 m survey buffer, are subject to tree climbing surveys where safe to do so. Where there is potential for roosting bats, dusk emergence or dawn return to roost surveys are being undertaken. These surveys were undertaken between August and October 2012; and in June 2013. The survey methodology used is based on Bat Surveys: Good Practice Guidelines (Hundt, 2012).
Bat Activity Survey	Habitats within the Onshore Development Area were assessed for their potential as foraging or commuting habitat for bats. Habitats with high potential were surveyed for bat activity using either static recording devices (on linear habitats such as hedgerows, woodland edges and streams) or hand-held bat detectors (on larger blocks of habitat such as woodland). Surveys were undertaken in August and September 2012; and in May 2013. The survey methodology is based on Bat Surveys: Good Practice Guidelines (Hundt, 2012).

Table 27.5 Field survey summary	
Survey	Methods
Dormouse	A dormouse survey was undertaken by deployment of nest tubes and boxes in areas of habitat identified as being suitable for dormice, within the Onshore Development Area. Tubes and boxes were deployed in August 2012 and were subsequently checked for evidence of dormice activity on four survey visits in August, September, October and November 2012, and May and June 2013. Survey methodology followed guidance in The Dormouse Conservation Handbook (English Nature 2006).
Badger	A badger survey was undertaken in May 2012. The survey included land within the Onshore Development Area and an additional 40 m survey buffer. The main objective of the survey was to determine whether badger setts and/or evidence of badgers was present.
Otter and Water Vole	Thirty-five waterbodies have been identified to date with the potential to support otters and water voles within the Onshore Development Area. Thirty-two water-bodies were surveyed for signs of otter and water vole in September 2012. The surveys extend 50 m upstream and downstream, beyond the Onshore Development Area boundary. Survey methodology follows the Water Vole Conservation Handbook (Strachan *et. al*., 2011) and Monitoring the Otter (Chanin, 2003).

Table 27.5 Field survey summary	
Survey	Methods
Aquatic Invertebrates	Aquatic invertebrate sampling was undertaken on water bodies using Biological Monitoring Working Party (BMWP) methods which can be used to determine water quality based on the invertebrate families present. The technique was extended to include identification of certain freshwater invertebrate groups, namely Odonata (Dragonflies) and Coleoptera (beetles) to species level, in order to give further information on nature conservation value. Sampling was undertaken at the centre of the Onshore Cable Corridor crossing point and 50 m up and down stream. The invertebrate sampling survey was undertaken in October 2012 and June 2013. A survey for adult southern damselfly was also undertaken in June and July 2013.

27.9.2 Existing Habitats and Designated Sites

Designated sites

27.50. There are four designated sites of international importance within 1.5 km of the Onshore Development Area (sites designated for ornithological features are described in Chapter 28, Onshore Ornithology), all of which overlap with the Onshore Development Area boundary. These four designations overlap considerably, with two of the designations relating to the River Avon and associated habitats, and two relating to the Dorset Heaths. Details of these designations are provided in Table 27.6 and shown on Figure 27.2.

27.51. Six SSSIs were identified during the desk study, three of which are constituent components of the international designations. Details of these designations are provided in Table 27.6 and shown on Figure 27.3.

27.52. There were 93 non-statutory designated sites of county importance that were identified as part of the desk study; 15 of these overlap with the Onshore Development Area and are listed in Table 27.6. The location of non-statutory sites is shown on Figure 27.4.

27.53. Details of ancient woodland sites crossed by the Onshore Cable Corridor are provided in Table 27.6 and locations are shown on Figure 27.5.

Habitats within the Onshore Development Area

27.54. This section provides a description and an evaluation of habitats within the proposed development area. A distribution of the habitats recorded during the on-going extended Phase 1 habitat survey are shown on Figures 27.6a to 27.6i and are described in Table 27.7.

27.55. Several of the habitats recorded within the Onshore Development Area are habitats of principal importance under Section 41 of the NERC Act. These include the following:

- Broadleaved woodland;
- Dry heath/acid grassland and shrub heath;
- Ponds;
- Rivers and streams; and
- Hedgerows.

Table 27.6 Designated sites within the Onshore Development Area

Site name	Grid reference	Total site area (ha)	Area within Onshore Development Area boundary (ha)	Description and reason for notification
Sites of international conservation value				
Avon Valley Ramsar site	SU 147123 to SZ 163923	1385	3.00	Site supports a diverse assemblage of wetland flora and fauna including nationally rare species. Notable plant species include brown galingale (*Cyperus fuscus*) and the site supports several nationally rare invertebrate species, including scarce chaser (*Libellula fulva*) and large mouthed valve snail (*Valvata macrostoma*).
River Avon SAC	SU 147123 to SZ 163923	498	0.14	Lowland river system with sections running through chalk and clay. Water-course of plain to montane levels with *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Site supports Desmoulin's whorl snail (*Vertigo moulinsiana*), sea lamprey (*Petromyzon marinus*), brook lamprey (*Lampetra planeri*), Atlantic salmon (*Salmo salar*) and bullhead (*Cottus gobio*).
Dorset Heathlands Ramsar site	SY 887835	6730	3.89	Site has a high species richness and high ecological diversity of wetland habitat types and transitions. Supports one nationally rare and 13 nationally scarce wetland plant species and at least 28 nationally rare wetland invertebrate species.
Dorset Heaths SAC	SY 887835	5731	3.89	Wet heath supporting rare plant species such as white beak-sedge (*rhynchospora alba*) and marsh gentian (*Gentiana pneumonanthe*). Dry heath supporting rare invertebrates, such as the Southern damselfly (*Coenagrioon mercuriale*), and all six native reptile species.
Sites of national conservation value				
Avon Valley (SSSI) (This SSSI is a constituent part of the Avon Valley international designations)	SU 147123 to SZ 163923	1385	3.00	The flood-plain and associated river terraces contain a variety of habitats ranging from herb-rich hay meadows and pastures, through a range of riparian fens and mires to riparian woods, dune grassland and heathland. These habitats support an outstanding flora, including several nationally rare and scarce species.

Table 27.6 Designated sites within the Onshore Development Area

Site name	Grid reference	Total site area (ha)	Area within Onshore Development Area boundary (ha)	Description and reason for notification
River Avon System (SSSI) (This SSSI is a constituent part of the Avon Valley international designations)	SU 147123 to SZ 163923	498	0.14	The site is valued for supporting five aquatic water crowfoot species and an extensive population of Desmoulins whorl snail. The site supports good breeding populations of kingfisher (*Alcedo atthis*), reed warbler (*Acrocephalus scirpaceus*) and sedge warbler (*Acrocephalus schoenobaenus*). Water vole (*Arvicola amphibious*), water shrew (*Neomys fodiens*) and otter (*Lutra lutra*) also use the site.
Highcliffe to Milford Cliffs (SSSI)	SZ 240928	110	0.42	Cliffs provide access to the standard succession of the fossil rich Barton Beds and Headon Beds of Eocene age (approximately 50 million years old). Significant assemblages of plant, mammal, reptile and bird fossils have been found within this geological site.
Holt & West Moors Heaths (SSSI) (This SSSI is a constituent part of the Dorset Heaths international designations)	SU 030358	766	3.89	Heathland lying on acidic soil, clays and gravels, with areas of bog in waterlogged areas. Rare and uncommon plant species present within the site include white beak-sedge (*Rhynchospora alba*) and sphagnum mosses (*Sphagnum magellanicum*) and (*S.pulchrum*). Site supports several notable species including hobby (*Falco subbuteo*), nightjar (*Caprimulgus europaeus*), sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*).
Moors River System (SSSI)	SU 057133 to SZ 131959	297	2.14	Chalk rivers system supporting species rich assemblages of aquatic invertebrates, including several rare and uncommon river species. Associated habitats include swamp, tall herb fen and fen woodland. Scarce chaser (*Libellula fulva*), hairy dragonfly (*Brachytron pratense*) and keeled skimmer (*Orthtrum coerulescens*) are present on site.
St Leonards and St Ives Heaths (SSSI)	SU 127014	86	1.78	Lowland dwarf shrub heath supporting Dartford warbler (*Sylvia undata*), nightjar, woodlark (*Lullula arborea*), sand lizard and smooth snake.
Non-statutory sites - county conservation value				
Breakhill Copse (*SNCI*)	SY 26639 94692	36.7	2.02	Areas of remnant heath amongst woodland.

Table 27.6 Designated sites within the Onshore Development Area

Site name	Grid reference	Total site area (ha)	Area within Onshore Development Area boundary (ha)	Description and reason for notification
Breakhill Heath (*SNCI*)	SY 26726 94729	2.8	0.72	Areas of remnant heath amongst woodland.
Golden Hill (*SNCI*)	SY 26256 95521	1.8	0.56	Woodland where there is a significant element of ancient semi natural woodland surviving.
Great Woar Copse (*SNCI, AW*)	SY 23803 96119	10.4	1.02	Semi-natural ancient woodland.
Beckley Moor Copse (*SNCI, AW*)	SY 26678 95851	21.2	2.57	Semi-natural ancient woodland.
Avon Common Plantation (*SNCI*)	SY 13396 99242	7.6	1.06	Areas of remnant heath within a Forestry Plantation.
Fillybrook Plantation (*SNCI*)	SY 1938 99079	2.6	0.10	A series of rides and a clearance with remnant dry and damp heath.
Hurn Forest (*SNCI*)	ST 11471 00277	17.1	1.24	Areas of remnant heath within a Forestry Plantation.
St Leonards Hospital (*SNCI*)	ST 10351 01935	20.4	1.34	Grassland supporting a large population of green-winged orchid (*Anacamptis morio*) and heathland.
East Moors Wood (*SNCI*)	ST 10348 02520	2.0	0.26	An area of carr woodland notable for its population of white sedge (*Carex curta*).
West Moors Plantation (*SNCI*)	ST 09388 03092	104.2	4.91	Heathland under replanted conifers.
West Moors Meadows (*SNCI*)	ST 09183 03559	3.5	0.24	Rush pasture and semi-improved neutral grassland.
The Nursery (*SNCI*)	ST 08286 04899	14.1	1.04	Coniferous plantation over relic heathland and acid grassland.

Table 27.6 Designated sites within the Onshore Development Area				
Site name	Grid reference	Total site area (ha)	Area within Onshore Development Area boundary (ha)	Description and reason for notification
Mannington Substation (*SNCI*)	ST 07540 05281	7.4	0.80	Varied habitats.
Ancient woodland – county conservation value				
Danes Stream Coppice	SY 25382 97228	3.00	0.38	Ancient and semi natural woodland, designated as being land which has been continuously wooded since AD1600 in England.
Great Woar Copse	SY 23805 96077	8.30	1.07	
Beckley Moor Copse	SY 22742 96091	8.80	1.28	

407000 413000 419000 425000 431000

104000 98000 92000

Dorset Heathlands Ramsar, SAC and SPA

Avon Valley SAC

Dorset Heathlands Ramsar, SAC and SPA

Dorset Heathlands SAC and SPA

Dorset Heathlands Ramsar, SAC and SPA

Avon Valley Ramsar and SPA

New Forest Ramsar, SAC and SPA

Dorset Heathlands Ramsar, SAC and SPA

Avon Valley SAC

New Forest Ramsar, SAC and SPA

New Forest Ramsar, SAC and SPA

Dorset Heathlands SAC and SPA

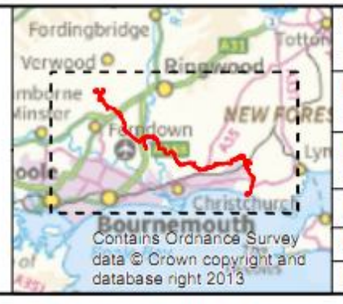
Dorset Heathlands Ramsar, SAC and SPA

Avon Valley Ramsar and SPA

0 2.5 5 km

Legend

- Special Protection Area (SPA)
- Ramsar Site
- Special Area of Conservation (SAC)
- 1.5km Buffer
- Onshore Development Area



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Ref. No.: 11532	**Data Source** OS Natural England	
Fig. No.: Figure 27.2		
Author: NS		
Rv.No.: 01	**Checked:** TD	**Approved:** PF

Navitus Bay Development Ltd

Onshore Cable Route - Designated Areas of International Importance

NAVITUSBAY

407000 413000 419000 425000 431000

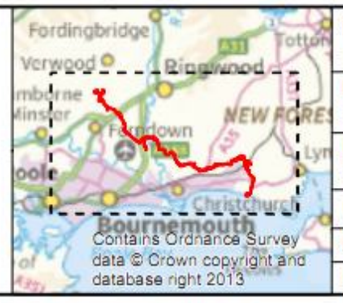
104000 98000 92000

Horton Common SSSI
Holt & West Moors Heaths SSSI
Holt & West Moors Heaths NNR and SSSI
Holt & West Moors Heaths SSSI
Lions Hill SSSI
Avon Valley (Bickton-Christchurch) SSSI
Slop Bog & Uddens Heath SSSI
Moors River System SSSI
St Leonards & St Ives Heaths SSSI
St Leonards & St Ives Heaths SSSI
Parley Common SSSI
Parley Common SSSI
Parley Common SSSI
Avon Valley (Bickton-Christchurch) SSSI
St Leonards & St Ives Heaths SSSI
Hurn Common SSSI
The New Forest SSSI
The New Forest SSSI
The New Forest SSSI
The New Forest SSSI
Town Common SSSI
The New Forest SSSI
Moors River System SSSI
Burton Common SSSI
The New Forest SSSI
Avon Valley (Bickton-Christchurch) SSSI
Highcliffe to Milford Cliffs SSSI

0 2.5 5 km

Legend

- Onshore Development Area
- 1.5km Buffer
- National Nature Reserve (NNR)
- Site of Special Scientific Interest (SSSI)



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Navitus Bay Development Ltd

Onshore Cable Route - Designated Areas of National Importance

NAVITUSBAY

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107000 104000 101000 98000 95000 92000

ID Number	Site Name
1	Ashley Meadows
2	Avon Common Plantation
3	Avon River Meadow 7
4	B3347 Ringwood Road
5	Barewood Copse
6	Barrett's Copse
7	Barton Common
8	Barton Common North
9	Bashley Copse
10	Bashley Wood
11	Beckley Common
12	Beckley Moor Copse
13	Beckton Bunny
14	Biddle's Meadow
15	Blackbush Copse
16	Bransgore Wood
17	Breakhill Copse
18	Breakhill Heath
19	Broadmoor Coppice
20	Brockhills Lane Balancing Pond and Woodland
21	Carrick Way Woodland
22	Chewton Common
23	Chewton Glen Farm
24	Chewton Glen Farm Meadow
25	Cranemoor Common South

ID Number	Site Name
26	Cranemoor Wood North
27	Cranemoor, Marlpit & Meetinghouse Woods and Mire
28	Crooked Willows Farm
29	Danes Stream Coppice
30	East Moors Wood
31	East Parley Common
32	Eastclose Copse
33	Fillybrook Plantation
34	Fillybrook-Crabs Field
35	Fir Grove Copse
36	Golden Hill
37	Grange
38	Great Woar Copse
39	Great Woar Copse South
40	Hatchard's Copse and Meadows
41	Hobb's Copse, Bransgore
42	Hollow Wood
43	Hordle Grange Wood
44	Horton Common
45	Hurn Airport-NE Industrial area
46	Hurn Forest
47	Lake Grove Road Meadowland
48	Locksbridge Copse
49	Lowerside copse
50	Mannington Copse

ID Number	Site Name
51	Mannington Sub-station
52	Martin's Copse
53	Matchams Park
54	Newlands Wood
55	Oasemsley Copse
56	Parsonage Wood
57	Pennington's Carr & Copse
58	Pinehurst Park Sports Field
59	Pithouse Farm
60	Pond Copse, New Milton
61	Prinks Wood
62	River Mude Copse
63	Shears Wood
64	Sopley Common Plantation
65	St Anne's Cottage
66	St Leonards Hospital
67	Stanley's Copse
68	Stanley's Park Wood
69	Summergates
70	The Nursery
71	Uddens Water East
72	Valesmoor Farm Meadow
73	Walkford Moor Copse
74	Walkford Moor Copse & Castlefield Copse

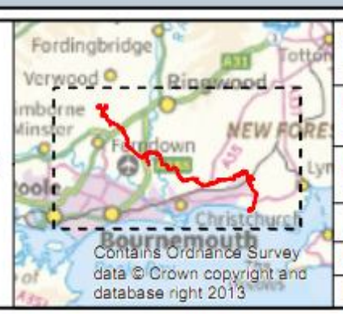
ID Number	Site Name
75	Week Wood
76	West Moors Meadows
77	West Moors Petroleum Depot
78	West Moors Plantation
79	Woolsbridge Farm Carr
80	Ice House Plantation
81	Unknown
82	Unknown
83	Unknown
84	Unknown
85	Unknown

0 2.5 5 km

Onshore Development

1.5km Buffer

Sites of Importance for Nature Conservation (SINC) (Hampshire) / Sites of Nature Conservation Importance (SNCI) (Dorset)



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Ref. No.: 11536		**Data Source** OS ECOSA Desk Study, 2011 (HBIC and DERC); Dorset County Council; Hampshire County Council
Fig. No.: Fig. 27.4		
Author: NS		
Rv.No.: 01	**Checked:** TD	**Approved:** PF

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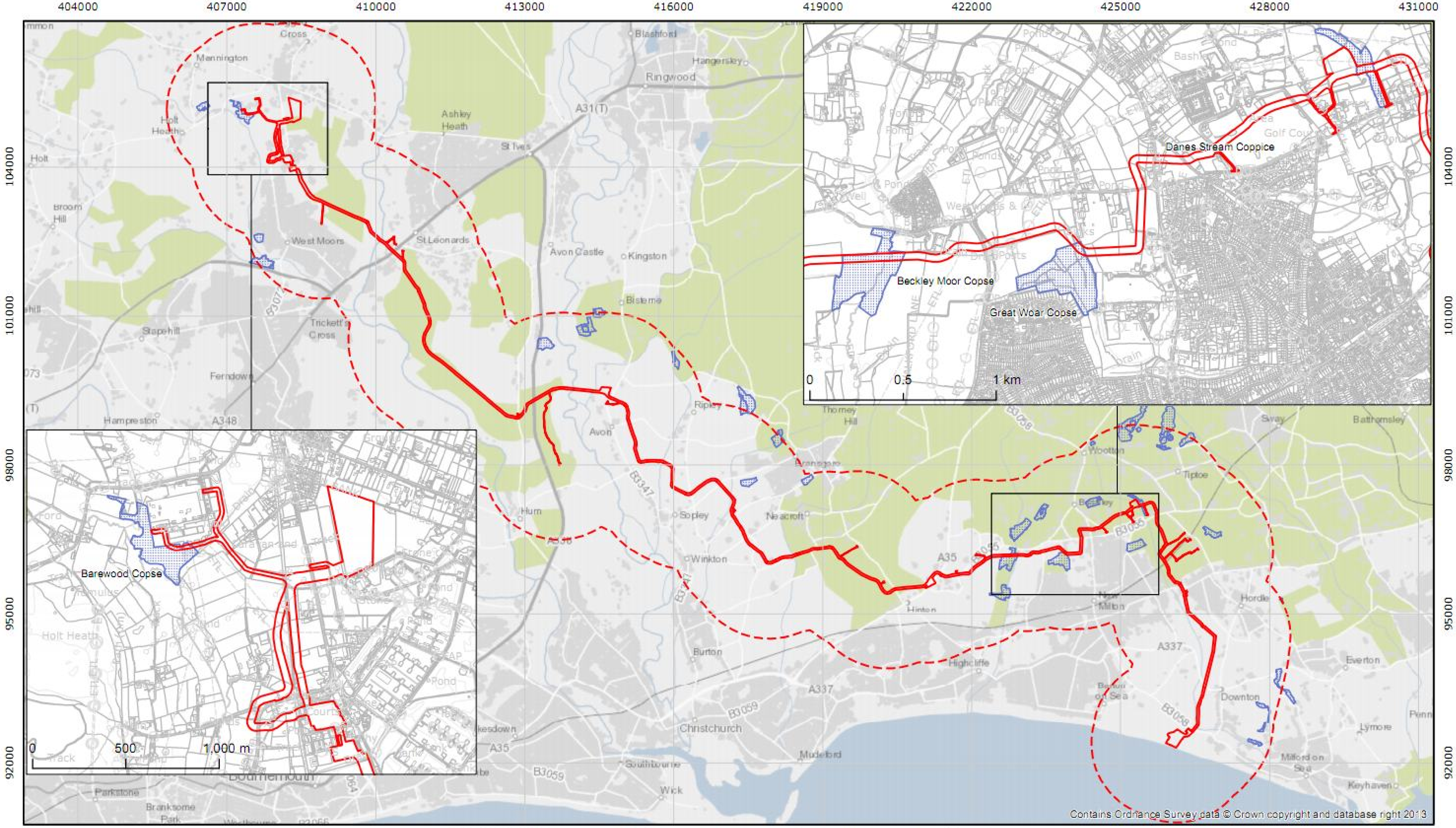
Navitus Bay Development Ltd

Onshore Cable Route - Designated Areas of County Importance

NAVITUSBAY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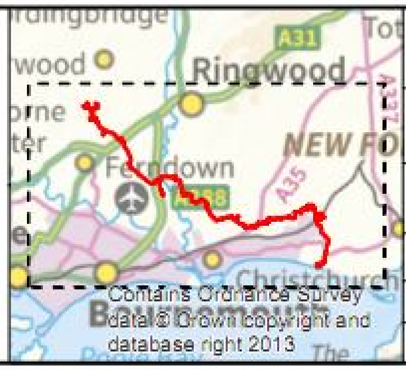
Broom Hill
Blashford
Hangersley
Ringwood
A31(T)
Ashley Heath
St Ives
West Moors
St Leonards
Avon Castle
Kingston
Bisterne
Stapehill
Tricketts Cross
Ferndown
Hampreston
A348
Ripley
Avon
Thorney Hill
Bransgore
B3347
Sopley
Neacroft
Hurn
Winkton
A35
Hinton
Burton
Highcliffe
A337
B3059
Christchurch
Mudeford
Southbourne
Wick
Bournemouth
Parkstone
Branksome Park
Sway
Battramsley
Wootton
Tiptoe
Bashley
New Milton
Hordle
Barton on Sea
B3058
Downton
Everton
Lymore
Milford on Sea
Keyhaven
Barewood Copse
0
500
1,000 m
Danes Stream Coppice
Beckley Moor Copse
Great Woar Copse
Golf Course
0.5
1 km
Contains Ordnance Survey data © Crown copyright and database right 2013

Legend

- Onshore Development Area
- 1.5km Buffer
- Ancient Woodland

0 2 4 km



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Date: 11/08/2013

Ref. No.: 11537

Fig. No.: Figure 27.5

Author: NS

Rv.No.: 01 **Checked:** TD **Approved:** PF

Coordinate System: British National Grid

Datum: OSGB 1936

Data Source

OS
Natural England

N

Navitus Bay Development Ltd

Onshore Cable Route - Ancient Woodland Areas

NAVITUSBAY

426000

427000

94000

93000

Breakhill Copse (SNCI)

Honeylake Wood

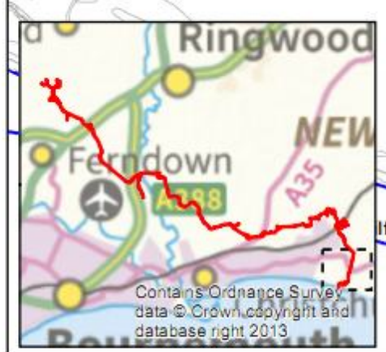
Highcliffe to Milford Cliffs (SSSI - for Geological Interest)

lford Cliffs (SSSI)

A

I

SI



Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Semi-Natural Broadleaved Woodland
- Plantation Broadleaved Woodland
- Semi-improved Neutral Grassland (*SI*)
- Improved Grassland (*I*)
- Eutrophic Running Open Water (*E*)
- Shingle / Cobbles Intertidal Coastland
- Soft Cliff Maritime
- Arable (*A*)
- Hard Standing (J6)
- Woodland Blocks

Fig. No.: Figure 27.6a		**Date:** 10/08/2013
Author: NS	**Checked:** TD	**Approved:** PF
Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11523	

0 250 500 m

N

NAVITUSBAY

425000 426000 427000

97000 96000 95000

The New Forest (SSSI)

Danes Stream Coppice (SNCI)

Stanley's Copse

Stanley's Copse

Golden Hill (SNCI)

Breakhill Copse (SNCI)

A SI SI SI SI

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Semi-Natural Broadleaved Woodland
- Semi-natural Mixed Woodland
- Scattered Broadleaved Trees
- Semi-improved Acid Grassland (*SI*)
- Semi-improved Neutral Grassland (*SI*)
- Improved Grassland (*I*)
- Poor Semi-improved Grassland (*SI*)
- Dry Heath / Acid Grassland Mosaic
- Standing Open Water
- Eutrophic Running Open Water (*E*)
- Amenity Grassland (*A*)
- Species Poor Defunct Hedge
- Dry Ditch
- Buildings
- Hard Standing (J6)
- Farmland and plantation (J3.1, J7, J8)
- Woodland Blocks
- Ancient Woodland (AW)

Fig. No.: Figure 27.6b		**Date:** 10/08/2013
Author: NS	**Checked:** TD	**Approved:** PF
Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11524	

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Beckley Moor Copse
(SNCI & AW)

Great Woar Wood
&
Great Woar Copse
(SNCI & AW)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Hard Standing (J6)
- Farmland and plantation (J3.1, J7, J8)
- Woodland Blocks
- Ancient Woodland (AW)

Fig. No.: Figure 27.6c		**Date:** 10/08/2013
Author: NS	**Checked:** TD	**Approved:** PF
Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11525	

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New Close Wood

Allensworth Wood

Dark Firs

Tilley's Plantation

Burton Common (SSSI)

Cranemoor W North (SNC

The New Forest (SSSI)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Hard Standing (J6)
- Woodland Blocks

Fig. No.: Figure 27.6d		**Date:** 10/08/2013
Author: NS	**Checked:** TD	**Approved:** PF
Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11526	

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River Avon (SCA)
&
River Avon System
(SSSI)

Avon Valley
(Ramsar & SPA)

River Avon System (SSSI)

Avon Valley (Bickton-Christchurch) (SSSI)

Avon Valley
(Bickton-Christchurch)
(SSSI)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Scattered Scrub
- Improved Grassland (*I*)
- Running Open Water
- Arable (*A*)
- Hard Standing (J6)
- Designated Sites

Fig. No.: Figure 27.6e		**Date:** 10/08/2013
Author: NS	**Checked:** TD	**Approved:** PF
Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11527	

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St Leonards & St Ives Heaths (SSSI)

Slape Copse

Avon Valley (Ramsar & SPA)

River Avon System (SSSI)

River Avon (SCA) & River Avon System (SSSI)

Avon Valley (Bickton-Christchurch) (SSSI)

Long Acre Plantation

Avon Common Plantation (SNCI)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Plantation Coniferous Woodland
- Semi-improved Acid Grassland (*SI*)
- Acid Dry Dwarf Heathland
- Running Open Water
- Hard Standing (J6)
- Woodland Blocks
- Designated Sites

Fig. No.: Figure 27.6f		**Date:** 10/08/2013
Author: NS	**Checked:** TD	**Approved:** PF
Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11528	

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Hurn Forest

St Leonards & St Ives Heaths (SSSI)

St Leonards & St Ives Heaths (SSSI)

St Leonards & St Ives Heaths (SSSI)

SI

SI

Moors River System (SSSI)

Moors River System (SSSI)

Avon Comm
Plantation (S

Hurn Common (SSSI)

Fillybroo
Plantatio
(SNCI)

Town Common (SSSI)

Town Common (SSSI)

Town Common (SSSI)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Semi-Natural Broadleaved Woodland
- Plantation Coniferous Woodland
- Dense / Continuous Scrub
- Scattered Scrub
- Coniferous Recently Felled Woodland (*F*)
- Unimproved Acid Grassland
- Semi-improved Acid Grassland (*SI*)
- Unimproved Neutral Grassland
- Semi-improved Neutral Grassland (*SI*)
- Poor Semi-improved Grassland (*SI*)
- Acid Dry Dwarf Heathland
- Wet Dwarf Shrub Heath
- Dry Heath / Acid Grassland Mosaic
- Acid / Neutral Flush / Spring
- Buildings
- Hard Standing (J6)
- Farmland and plantation (J3.1, J7, J8)
- Woodland Blocks
- Designated Sites

Fig. No.: Figure 27.6g		**Date:** 10/08/2013
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Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11529	

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West Moors Plantation (SNCI)

Moors River System (SSSI)

St Leonards Hospital (SNCI)

East Moors Wood (SNCI)

Pond (P55)

Moors River System (SSSI)

Parley Common (SSSI)

Moors River System (SSSI)

Parley Common (SSSI)

St Leonards & St Ives Heaths (SSSI)

Hurn Forest (SNCI)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Semi-Natural Broadleaved Woodland
- Plantation Coniferous Woodland
- Semi-natural Mixed Woodland
- Plantation Mixed Woodland
- Dense / Continuous Scrub
- Coniferous Recently Felled Woodland (*F*)
- Unimproved Acid Grassland
- Semi-improved Acid Grassland (*SI*)
- Unimproved Neutral Grassland
- Semi-improved Neutral Grassland (*SI*)
- Improved Grassland (*I*)
- Poor Semi-improved Grassland (*SI*)
- Continuous Bracken
- Acid Dry Dwarf Heathland
- Dry Heath / Acid Grassland Mosaic
- Standing Open Water
- Running Open Water
- Buildings
- Hard Standing (J6)
- Bare Ground
- Farmland and plantation (J3.1, J7, J8)
- Woodland Blocks
- Designated Sites

Fig. No.: Figure 27.6h		**Date:** 10/08/2013
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Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11530	

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Mannington Substation (SNCI)

Mill Nursery Plantation

Barewood Copse (SNCI & AW)

Holt & West Moors Heaths (SSSI)

The Nursery (SNCI)

Sturt Farm Woodland

Dorset Heathlands (Ramsar, SPA & SAC) & Holt and West Moors Heaths (SSSI)

MOD Training Ground Wood

West Moors Meadows (SNCI)

Moors River System (SSSI)

Navitus Bay Development Ltd

Onshore Cable Route Phase 1 Habitats

Legend

- Onshore Development Area
- Area Not Surveyed
- Semi-Natural Broadleaved Woodland
- Plantation Broadleaved Woodland
- Plantation Coniferous Woodland
- Semi-natural Mixed Woodland
- Plantation Mixed Woodland
- Coniferous Recently Felled Woodland (*F*)
- Unimproved Acid Grassland
- Semi-improved Acid Grassland (*SI*)
- Unimproved Neutral Grassland
- Semi-improved Neutral Grassland (*SI*)
- Improved Grassland (*I*)
- Poor Semi-improved Grassland (*SI*)
- Tall Non-Ruderal Vegetation
- Dry Heath / Acid Grassland Mosaic
- Standing Open Water
- Arable (*A*)
- Amenity Grassland (*A*)
- Buildings
- Hard Standing (J6)
- Farmland and plantation (J3.1, J7, J8)
- Woodland Blocks
- Ancient Woodland (AW)
- Designated Sites

Fig. No.: Figure 27.6i		**Date:** 10/08/2013
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Scale@A3: 1:10,000		**Revision No.:** 01
Coordinate System: British National Grid		**Data Sources:** OS ECOSA Phase 1 Habitat Survey and Natural England
Datum: OSGB 1936	**Ref. No.:** 11531	

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Table 27.7 Habitats of ecological value within the Onshore Development Area

Habitat	Area within Onshore Development Area (ha)	Likely value of habitat	Justification
Broadleaved and mixed woodland	10.00	County	As a habitat type of principal importance under S41 of the NERC Act, broadleaved and mixed woodland is considered to be of national importance. However, the areas of woodland within the Onshore Development Area boundary are small in comparison with the amount of woodland found within the counties of Dorset and Hampshire, and the areas impacted are smaller parts of larger woodland habitat blocks which will retain their integrity. The area of woodland within the Onshore Development Area boundary would therefore be considered to be of county nature conservation value.
Coniferous woodland	13.40	Zone of Influence	Coniferous plantation woodland is a relatively common habitat within the counties of Dorset and Hampshire. These plantations are managed for the production of commercial timber. This habitat has limited conservation value as ground flora is restricted due to lack of light and carpets of needles. This habitat is valued at the zone of influence level only.
Improved and semi-improved grassland	40.43	Zone of Influence	These grasslands have been subject to agricultural improvement, mainly for use as grazing pasture. They are generally species poor and of limited value to wildlife. These habitats are valued at the zone of influence level only.
Dry heath/acid grassland and shrub heath	10.39	County	As a habitat of principal importance under S41 of the NERC Act, heathland with associated unimproved grassland and gorse scrub is recognised as a habitat type of National Importance, supporting several specialist species, not found in other habitat types. South and south-west England is an important region for this habitat type within the UK. However, the amount of this habitat within the Onshore Development Area boundary and not included within designated sites, is small (0.073%) relative to that within the counties of Dorset and Hampshire and this area of this habitat type is, therefore, considered to be of county nature conservation value only.
Open and standing water	0.24	Zone of Influence	The amount of open and standing water within the Onshore Development Area boundary is small; included is a single pond and areas of bog in Hurn Forest, Avon Common Plantation, West Moors Plantation and West Moors MOD site. Ponds are a habitat type of principal importance under S41 of the NERC Act, however due to the small area of this habitat within the Onshore Development Area this habitat is valued at the zone of influence only.

Table 27.7 Habitats of ecological value within the Onshore Development Area			
Habitat	Area within Onshore Development Area (ha)	Likely value of habitat	Justification
Rivers and streams	0.26	County	Rivers and streams are a habitat type of principal importance under S41 of the NERC Act and the habitat type is of national importance. The Onshore Cable Corridor would cross two rivers, the River Avon and Moors River. The River Avon is designated as an SAC and is of International Importance; the Moors River is an SSSI and therefore of national importance, see Table 27.6. Several smaller water-courses cross the Onshore Development Area boundary, including Danes Stream (two locations), two tributaries of Danes Stream, Walkford Brook, Bure Brook, a tributary of Bure Brook, five tributaries of River Mude, Burley Brook, Ripley Brook, a tributary of River Avon (Banana Bog), six tributaries of Moors River and three tributaries of Mannington Brook. As the length of these smaller water-courses within the Onshore Development Area boundary is a small proportion of their total length, they are evaluated to be of county conservation value.
Cultivated disturbed ground (Arable)	10.49	Zone of Influence	Arable habitat is cultivated disturbed ground planted with monocultures that support very few native species and have limited value for wildlife. This habitat may have some value to arable weed species; however the habitat is common and widespread both locally and within the UK. The area of this habitat within the Onshore Development Area boundary is considered to be of conservation value at the zone of influence level only.
Roads and paths	7.82	NA	This area consists mainly of tarmac roads which support no native species and has negligible value to nature conservation.
Hedgerows	129 hedgerows are crossed by the cable route.	County	Hedgerows are a habitat type of principal importance under S41 of the NERC Act and as such the habitat type is of national importance. The quality of hedgerows as habitat for wildlife, within the Onshore Development Area boundary, is variable. Some are in poor condition with large gaps, while others have a denser structure and support a variety of woody species that are of value to wildlife, especially birds and small mammals. Hedgerows also have value as corridors of ecological connectivity across farmland landscapes. The Onshore Cable Corridor would cross approximately 129 hedgerows, with approximately 15 km of hedgerow length within the development. These areas of hedgerow habitat are evaluated as of County Importance.
Not Surveyed	60.76		Remaining areas will be surveyed in 2013, if access is granted/obtained.

Fauna

27.47. A description of the fauna recorded during the on-going survey programme is provided in the paragraphs below; a nature conservation evaluation for populations of these species within the Onshore Development Area boundary is given in Table 27.8.

Badger

27.48. Ninety-five badger setts have been identified within the study area to date, comprising four main setts, six annex setts, 15 subsidiary setts and 70 outlier setts. Thirty-seven of the outlier setts were disused at the time of the survey. Several badger signs were also recorded including latrines, hairs, foot prints, snuffle holes and runs. Setts and signs were predominantly within or in close proximity to broadleaved woodland.

27.49. Of the setts recorded to date as currently active (well used or partially used) at the time of the survey, 16, including one main sett, were within the Onshore Development Area. Forty-two setts were located outside, but within 15 m, of the Onshore Development Area boundary. For reasons of welfare, locations of badger setts are not shown. NE has been provided with the locations of the badger setts located during the on-going survey programme.

Otter and water vole

27.50. No evidence of otter or water vole activity was found to date on the 32 water-bodies identified as having potential to support these species within the Onshore Development Area. Although neither species was recorded during the survey, there is the potential for them to be present in this area, particularly associated with the River Avon.

Bats

27.51. No bat roosts were identified to date within the Onshore Development Area or within 15 m of the boundary.

27.52. Bat activity surveys to date have recorded at least ten species of bat foraging and/or commuting within suitable habitat within the Onshore Development Area. The majority of bats recorded to date are common pipistrelle *Pipistrellus pipistrellus* (67% of records) and soprano pipistrelle *Pipistrellus pygmaeus* (22% of records). The other species recorded included Nathusius' pipistrelle *Pipistrellus nathusii*, myotis species, plecotus species, noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri,* serotine *Eptesicus serotinus* and barbastelle *Barbastella barbastellus*. The highest levels of bat activity were associated with Danes Stream and Ripley Brook.

Dormouse

27.53. No evidence of dormice presence was recorded to date during the on-going survey programme.

Great crested newt and other amphibians

27.54. No great crested newts were recorded to date in any of the water-bodies surveyed.

27.55. Smooth newts (*Lissotriton vulgaris*) were recorded in 22 of the surveyed water-bodies and palmate newts (*Lissotriton helveticus*) in 30 water-bodies. Common frog (*Rana temporaria*) and common toad (*Bufo bufo*) were recorded in 16 and nine of the surveyed water-bodies respectively. Only one pond falls within the Onshore Development Area boundary and this pond was found to support palmate newt and common frog.

Reptiles

27.56. Populations of the common British reptile species; common lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), grass snake (*Natrix natrix*) and adder (*Vipera berus*) were recorded in Hurn Forest and West Moors Plantation during on-going reptile surveys. Sand lizard was also recorded in Hurn Forest.

27.57. Five of the six native British species of reptiles have been recorded during surveys to date. Adder was recorded at two sites, common lizard at six sites, slow worm at ten sites, grass snake at four sites and sand lizard at two sites. Reptiles to date have been found mainly in areas of semi-improved grassland, coarse grassland and heathland. All five species recorded were noted at the West Moors MoD site; although smooth snake was not recorded during the survey, there is the potential for it to be present in this area.

Aquatic invertebrates

27.58. During aquatic invertebrate surveys completed to date, a total of 13 species of Coleoptera (specifically water beetles) and five species of Odonata (dragonflies and damselflies) were recorded. Three species were recorded which are species of conservation concern (Nationally Scarce/IUCN lower risk).

27.59. The raft spider *Dolomedes fimbriatus* is nationally scarce, and southern heathlands form one of its main strongholds in the UK, where it actively hunts live prey amongst tussocks in swampy areas (Harvey et al., 2002). The diving beetle *Rhantus suturalis* occurs in lowland ponds and ditches amongst vegetation (Foster, 2010), and although recorded from a number of sites with peat, it is not restricted to acidic habitats. The water scavenger beetle *Helochares punctatus* is confined to low-lying peaty areas, particularly wet heaths (Foster, 2010).

27.60. Table 27.8 provides the scoping assessment of each of the species within the Onshore Development Area identified during the desk-study and survey programme. Details on the values of each species and justification are also presented and follow the methodology outlined in Assessment Methodology Section.

27.61. Table 27.9 provides information on each of the designated sites, habitats and fauna identified during the desk-study and survey programme. Table 27.9 also highlights which of these features identified have been included in the impact assessment and justifies their inclusion or exclusion in line with the proposed embedded mitigation measures as part of the project design.

Table 27.8 Nature conservation value of species populations within the Onshore Development Area		
Species	Value	Justification
Badger	Zone of Influence	The badger is a native species common and widespread in the UK, including in the counties of Dorset and Hampshire. It is not considered to be threatened or declining and is given legal protection due to issues of persecution.
Otter	None	No otters or evidence of otters were recorded during the surveys to date.
Water Vole	None	No water voles or evidence of water voles were recorded during the surveys to date.
Bats	County	As a European Protected Species bats are of International Importance (details presented in Table 27.6). However, no bat roosts have been identified to date within, or adjacent to, the Onshore Development Area boundary and although habitats within the boundary are used by at least ten species of bat for foraging and/or commuting, this habitat constitutes only a small proportion of the available foraging habitat in the local area. Consequently the population of bats using the habitat within the Onshore Development Area boundary is considered to be of county importance.
Dormouse	None	No dormice or evidence of dormice was recorded during the surveys to date.
Great Crested Newt	None	No great crested newts were recorded to date in water-bodies on the Onshore Cable Corridor or within 250 m of the cable corridor.
Other Amphibians	Local	Common amphibian species were recorded in a number of locations during the current survey programme. These species, although having suffered recent declines, remain common and widespread across Dorset and Hampshire and within the UK.
Common reptiles (slow worm, common lizard, grass snake, adder)	Local	Reptile populations have suffered significant declines in the UK due to habitat loss, degradation and fragmentation. Even within protected sites, reptiles have suffered through lack of appropriate habitat management, sometimes leading to declines and local extinctions. The common reptile species are listed as species of principal importance under S41 of the NERC Act and as such are generally of National Importance (see Table 27.6). However, the common species of native reptiles are widespread in suitable habitats in Dorset and Hampshire, such that the populations present within the Onshore Development Area boundary represent a very small proportion of the county totals. Consequently the population of common reptiles within the Onshore Development Area boundary is considered to be of local value.

Table 27.8 Nature conservation value of species populations within the Onshore Development Area		
Species	Value	Justification
Sand Lizard	County	The sand lizard is the rarest lizard in the UK. Although it is widespread and common in many parts of Europe, it is confined to pockets of heathland and coastal sand dunes in southern England, north-west England and north Wales, where sandy substrates and microclimate are favourable. The loss of heathlands and sand dunes during the 20th century caused a great reduction in the range of sand lizards in the UK, and countless populations were lost. As a European Protected Species under the Habitat Regulations, sand lizard is generally of international importance (details presented in Table 27.6). Hampshire and Dorset hold a significant proportion of the total population of sand lizards within the UK. However, only low numbers of this species were recorded during the survey to date within the Onshore Development Area boundary, and consequently this population is considered to be of county value.
Aquatic Invertebrates	County	Three scarce species were recorded to date, however, only a small proportion of the total local populations are likely to be present within the small lengths of water-course that run through the Onshore Development Area.

Table 27.9 Summary of features and activities included in the impact assessment			
Feature	Included	Excluded	Justification & activities
Designated sites			
River Avon SAC		✓	River Avon is a designated site of international importance. Avoidance of impacts would be achieved by embedded mitigation. Trenchless crossing techniques would be used to install cables beneath habitats and the river bed. Additionally, the Environment Agency's Pollution Prevention Guidance would negate the risk of pollutant loss (both chemical and through losses of fine material) into the designated site.
Avon Valley Ramsar Site		✓	The Avon Valley is a designated site of international importance. Avoidance of impacts would be achieved by embedded mitigation. Trenchless crossing techniques will be used to install cables beneath the river bed. To enable this to be achieved no access is required to any habitats within the designated site. Additionally, the Environment Agency's Pollution Prevention Guidance would negate the risk of pollutant loss (both chemical and through losses of fine material) in to the designated site. Potential disturbance of over-wintering waterfowl (particularly Bewick's swan (*Cygnus columbianus bewickii*)) would be negated through scheduling of works outside of the winter period (details presented in Chapter 28, Onshore Ornithology).
Dorset Heaths SAC	✓		The Dorset Heaths SAC is a designated site of international importance. The West Moors MoD site lies within the designation boundary. Impacts on the habitats in this area would mostly be avoided through the use of trenchless crossing techniques. However, excavations would be required in the north-eastern corner of West Moors MoD site.
Dorset Heathlands Ramsar site	✓		The Dorset Heathlands Ramsar site is a designated site of international importance. The West Moors MoD site lies within the designation boundary. Impacts on the heathland habitats in this area would mostly be avoided through the use of trenchless crossing techniques. However, excavations would be required in the north eastern corner of West Moors MoD site.
Avon Valley (SSSI)		✓	The Avon Valley is a designated site of national importance. Avoidance of impacts would be achieved by embedded mitigation. Trenchless crossing techniques would be used to install cables beneath the river bed. Additionally, the Environment Agency's Pollution Prevention Guidance would negate the risk of pollutant loss (both chemical and through losses of fine material) in to the designated site; it would also prevent disturbance of breeding birds (especially as working areas are screened from the designation boundary by areas of trees).
River Avon System (SSSI)		✓	The River Avon System is a designated site of national importance. Avoidance of impacts would be achieved by embedded mitigation. Trenchless crossing techniques would be used to install cables beneath the river bed. Additionally, the Environment Agency's Pollution Prevention Guidance would negate the risk of pollutant loss (both chemical and through losses of fine material) to the designated site.

Table 27.9 Summary of features and activities included in the impact assessment			
Feature	Included	Excluded	Justification & activities
Designated sites			
Holt and West Moors Heaths SSSI	✓		The Holt and West Moors Heaths SSSI is a designated site of national importance. The West Moors MoD site lies within the designation boundary. Impacts on the habitats in this area would mostly be avoided through the use of trenchless crossing techniques. However, excavations would be required in the north-eastern corner of West Moors MoD site. Further assessment of the impacts of this activity is provided in Impact Assessment section of this chapter. Through embedded and additional mitigation potential effects on cited bird species would be avoided/negated (details presented in Chapter 28, Onshore Ornithology).
Highcliffe to Milford Cliffs SSSI		✓	Highcliffe to Milford Cliffs SSSI is a designated site of national importance. The embedded mitigation measure of the use of a trenchless crossing technique to install the cable between the sub-tidal area and the landfall point would ensure no damage to the SSSI would occur and no surface works would be required in the designated area.
Moors River System SSSI		✓	The Moors River System SSSI is a designated site of national importance. Avoidance of impacts on the main channel of the Moors River and its marginal habitats would be achieved by the use of trenchless crossing techniques. There is also a small blind ended tributary channel of the Moors River, which is part of the SSSI, which is within the Onshore Development Area in Hurn Forest (Figure 27.6h). This tributary would be crossed, close to its termination, using open cut trenching. An area of approximately 0.18 ha would be affected which is 0.08% of the designated site. Because pollution of the watercourse will be avoided by the embedded mitigation of adopting Environment Agency's Pollution Prevention Guidelines, the area would be re-instated following construction and the area impacted is small, there is unlikely to be a significant impact on the integrity of the designated site. For these reasons the Moors River System SSSI is excluded from further impact assessment.
St Leonards & St Ives Heaths SSSI	✓		The St Leonards and St Ives Heath SSSI is a designated site of national importance. The cable route crosses St Leonards & St Ives Heaths SSSI. Open trenching techniques proposed for use within the area would result in the temporary loss of habitat and displacement of fauna from within the working area. Further impact assessment of this receptor is provided in the Impact Assessment section.
Breakhill Copse SNCI	✓		The cable route crosses Breakhill Copse SNCI, a site of county importance. Open trenching techniques proposed for use within the area would result in the temporary loss of habitat. Further impact assessment of this receptor is provided below in the Impact Assessment section.
Breakhill Heath SNCI	✓		The Onshore Cable Corridor crosses Breakhill Heath SNCI, a site of county importance. Open trenching techniques proposed for use within the area would result in the temporary loss of habitat. Further impact assessment of this receptor is provided in the Impact Assessment section.
Golden Hill SNCI		✓	Golden Hill SNCI is within the proposed development area. However, through the use of trenchless crossing techniques potential impacts on this site would be avoided.

Table 27.9 Summary of features and activities included in the impact assessment

Feature	Included	Excluded	Justification & activities
Designated sites			
Great Woar Copse SNCI, AW		✓	Great Woar Copse SNCI is within the Onshore Development Area, however, through the use of trenchless crossing techniques potential impacts on this site would be avoided.
Beckley Moor Copse SNCI, AW		✓	Beckley Moor Copse SNCI is within the Onshore Development Area however, through the use of trenchless crossing techniques potential impacts on this site would be avoided.
Avon Common Plantation SNCI	✓		Within Avon Common Plantation SNCI a proposed construction compound would be located; access to this compound would also be through the SNCI. Further impact assessment of this receptor is provided in the Impact Assessment section.
Fillybrook Plantation SNCI	✓		Within Fillybrook Plantation SNCI open trenching works are proposed that would result in the temporary loss of habitat. Further impact assessment for this receptor is provided in the Impact Assessment section.
Hurn Forest SNCI	✓		Within Hurn Forest SNCI open trenching works are proposed that would result in the temporary loss of habitat. Further impact assessment for this receptor is provided in the Impact Assessment section.
St Leonard's Hospital SNCI	✓		Construction activity within St Leonard's Hospital SNCI would largely be avoided through the use of trenchless crossing techniques. However, there is a separate part of the SNCI designation through which the route runs and where the Onshore Cable Corridor would be installed using open trenching techniques. Further impact assessment for this receptor is provided in the Impact Assessment section.
East Moors Wood SNCI		✓	East Moors Wood SNCI is within the proposed Onshore Development Area, however, through the use of trenchless crossing techniques, potential impacts on this site will be avoided.
West Moors Plantation SNCI	✓		Within West Moors Plantation SNCI open trenching works are proposed that would result in the temporary loss of habitat. Further impact assessment for this receptor is provided in the Impact Assessment section.
West Moors Meadows SNCI	✓		Within West Moors Meadow SNCI open trenching works are proposed that would result in the temporary loss of habitat. Further impact assessment for this receptor is provided in the Impact Assessment section.
The Nursery SNCI	✓		Within The Nursery SNCI works to install an access road would result in the permanent loss of habitat. Further impact assessment for this receptor is provided in the Impact Assessment section.
Mannington Sub-station SNCI	✓		Within Mannington Substation SNCI open trenching works are proposed that would result in the temporary loss of habitat. Further impact assessment for this receptor is provided in the Impact Assessment section.

Table 27.9 Summary of features and activities included in the impact assessment			
Feature	Included	Excluded	Justification & activities
Designated sites			
Danes Stream Coppice AW		✓	Danes Stream Coppice SNCI is within the Onshore Development Area; however, through the use of trenchless crossing techniques potential impacts on this site would be avoided.
Non-statutory site outside of the development area		✓	Non-statutory sites would not suffer impacts during to the proposed installation, operation and maintenance and decommissioning of the transmission cable due to the implementation of the Environment Agency Pollution Prevention Guidelines.
Habitats			
Lowland Mixed Deciduous Woodland	✓		Approximately 10 ha of broadleaved woodland would be cleared to enable the installation of the transmission cable, although the Onshore Cable Corridor will be minimised in these areas, where practicable. The minimum widths would be set out in the ES and the residual area of woodland lost assessed. During the construction phase soil stripping and trenching could also impact broadleaved woodland adjacent to the site through severance of the root system of trees. This is a habitat of principal importance under Section 41 of the NERC Act and the area within the Onshore Development Area boundary has been evaluated as being of county importance, therefore further impact assessment of this receptor is provided in the Impact Assessment section.
Lowland Heathland	✓		Impacts on heathland during vegetation clearance and soil stripping during construction, in Hurn Forest and West Moors Plantation are certain. This is a habitat of principal importance under Section 41 of the NERC Act and the area within the Onshore Development Area boundary has been evaluated as being of County Importance, therefore, further impact assessment of this receptor is provided in the Impact Assessment section.
Ponds		✓	A single pond is within the Onshore Development Area. Through narrowing of the working corridor in this area, where feasible damage to the pond will be avoided. Implementation of the Environment Agency's Pollution Prevention Guidelines would negate potential impacts on this and other ponds adjacent to the working area. No further assessment of this receptor is required.
Rivers and Streams	✓		Impacts on the River Avon and Moors River would be avoided through the embedded mitigation of trenchless crossing techniques. Open trenching techniques at the construction phase could cause impacts on other streams on the route including Danes Stream and Ripley Brook. This is a habitat of principal importance under Section 41 of the NERC Act and the area within the Onshore Development Area boundary has been evaluated as being of county importance, therefore, further impact assessment of this receptor is provided in the Impact Assessment section.

Table 27.9 Summary of features and activities included in the impact assessment			
Feature	Included	Excluded	Justification & activities
Designated sites			
Hedgerows	✓		During construction vegetation clearance of hedgerows would occur where the Onshore Cable Corridor would cross. The Onshore Cable Corridor would be minimised in these areas, where practicable. The minimum widths will be set out in the ES and the residual length of hedgerow affected assessed. During the construction phase soil stripping and trenching could also impact hedgerows adjacent to the site through severance of the root system of hedgerow trees. This is a habitat of principal importance under Section 41 of the NERC Act and the area within the Onshore Development Area boundary would be evaluated as being of County Importance. Further impact assessment of this receptor would be provided in the ES.
Coniferous Woodland		✓	Coniferous woodland is scoped out of the assessment process because of the assigned conservation value of zone of influence.
Improved and semi-improved grassland		✓	Improved and semi-improved grassland is scoped out of the assessment process because of the assigned conservation value of zone of influence.
Cultivated disturbed ground (arable)		✓	Cultivated disturbed ground is scoped out of the assessment process because of the assigned conservation value of zone of influence.
Roads and paths		✓	Roads and paths are scoped out of the assessment process because they are of no conservation value.
Fauna			
Badger	✓		During construction and decommissioning, activities could impact badger setts along the Onshore Cable Corridor which have been identified within or close to the Onshore Development Area boundary. Although this species only has a zone of influence conservation value, further impact assessment is provided in the Impact Assessment section to reflect the legal status of badger.
Otter		✓	Not recorded to date within the Onshore Development Area boundary.
Water Vole		✓	Not recorded to date within the Onshore Development Area boundary.
Bats	✓		There are no known confirmed roost sites for bats within or adjacent to the development area to date. However, foraging and commuting habitat is present. Temporary habitat loss would affect bat foraging and commuting habitat comprising mainly hedgerow and woodland habitats. In addition, foraging bats could move between coastal habitats and the Navitus Bay Wind Park. The bat population has been evaluated as being of county importance; all bats are European protected species and some bats are species of principal importance under Section 41 of the NERC Act. For these reasons further impact assessment of this receptor is provided in the Impact Assessment section.

Table 27.9 Summary of features and activities included in the impact assessment			
Feature	Included	Excluded	Justification & activities
Designated sites			
Dormouse		✓	Not recorded within the Onshore Development Area to date.
Great Crested Newt		✓	Not recorded within the Onshore Development Area to date.
Other Amphibians		✓	Other amphibians are scoped out of the assessment process because of the assigned conservation value of zone of influence.
Sand Lizard	✓		Sand Lizard is a European protected species that was recorded in West Moors MoD site and in Hurn Forest. This population has been evaluated as being of county importance and could be affected by direct mortality and habitat loss as a result of vegetation clearance and soil stripping during construction. This is a species of principal importance under Section 41 of the NERC Act. Further impact assessment of this receptor is provided in the Impact Assessment section.
Common reptiles	✓		The population of common reptiles could be affected by direct mortality and habitat loss as a result of vegetation clearance and soil stripping during construction. Although the population was only assessed as being of local importance, reptiles in England are species of principal importance under Section 41 of the NERC Act and receive protection under the Wildlife and Countryside Act. For these reasons further impact assessment of this receptor is provided in the Impact Assessment section given their legal status.
Aquatic Invertebrates	✓		Aquatic invertebrates have been evaluated as of county importance and may suffer from direct mortality and/or suffer temporary habitat loss during the construction phase. Some aquatic invertebrates are species of principal importance under Section 41 of the NERC Act. Further impact assessment of this receptor is provided in the Impact Assessment section.

27.10 Impact Assessment

27.62. Table 27.11 provides a summary of the development activities and potential mechanisms through which ecological receptors may be impacted.

27.10.1 Designated sites impact assessment

Dorset Heathlands Ramsar site, Dorset Heaths SAC and Holt and West Moors Heaths SSSI

27.63. As the Onshore Development Area crosses the West Moors MOD site there is a requirement to establish a drilling compound to enable the installation of the cable; linked to this is the necessity to install a short length of cable using an open trenching technique. This area is within the Dorset Heathlands Ramsar site, Dorset Heaths SAC and Holt and West Moors Heaths SSSI, Figure 27.2.

27.64. The Onshore Cable Corridor is located within an area currently occupied by immature birch woodland. This habitat type is not a designated feature of either the Ramsar site or SAC and, although noted on the SSSI citation, is not a key habitat type (usually being associated with loss of heathland habitats through scrub invasion). There are no wet or dry heathland habitats within the Onshore Cable Corridor.

27.65. Although birch woodland is not a feature of the designations, the potential for effects on adjacent habitats and associated fauna (e.g. reptiles and invertebrates) may result in an impact on site integrity without additional mitigation. The potential effects include temporary disturbance and/or displacement of fauna (particularly reptiles) and degradation of adjacent habitats, flora and fauna through the release of dust and pollutants into surrounding areas.

27.66. The use of trenchless crossing techniques to install the cables across the majority of the designated area prevents direct disturbance to any areas of wet or dry heathland habitats, whilst the implementation of the Environment Agency's Pollution Prevention Guidance, would reduce the risk associated with the loss of pollutants and dust into the surrounding area.

27.67. The impact on the part of the designations that encompass the West Moors MOD site, without additional mitigation, is characterised in Table 27.10.

Table 27.10 Dorset heathlands impact characterisation	
Mechanism	Temporary habitat loss and disturbance. Death or injury of associated fauna
Feature	Dorset Heathlands Ramsar site, Dorset Heaths SAC and Holt and West Moors Heaths SSSI
Value of Feature	International
Phase	Construction
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	A 1.55 ha area of birch woodland habitat will be impacted. This is approximately 0.02% of the total area of the Dorset Heathlands site
Duration	The impact would occur throughout the duration of the construction works
Reversibility	Mortality and injury of fauna are permanent. Habitat loss with mitigation is reversible
Frequency	The impact would occur once during construction phase
Timing	Construction phase (vegetation clearance stage and cable installation stage)

Table 27.11 Development activities and mechanisms with potential to impact ecological features

Development activity	Mechanism which could cause impact on receptor (feature)
Construction The removal of trees, shrubs and coarse vegetation is scheduled to take place over winter. This activity would occur within the working width in open cut trenching areas (not in trenchless crossing sections) in construction compounds, at the site of the Onshore Substation and where access routes need to be installed or widened. In open areas, and those where vegetation clearance has taken place, ground vegetation and topsoil would be removed, trenches dug and cable ducts installed. Top soil would then be replaced over the ducts. These activities would be undertaken predominately between March and October. Where trenchless crossing techniques are used, topsoil would be cleared at drilling entry and exit sites, ducts would be drilled and the cables pulled through. Following completion of each drilled section top -soil would be replaced. Construction activities at the drilling compounds could be undertaken at any time of year. During construction at the site of the Onshore Substation, the topsoil would be removed and the ground level raised prior to assembly of substation equipment. Construction would be undertaken throughout the year. Following completion of the Onshore Substation the surrounding area would be landscaped.	**Killing and injury/damage of flora and fauna** resulting in population losses. **Temporary habitat loss/damage** resulting in reduction in area of important habitat types, reduction in integrity of designated sites and/or reduction in habitat available to fauna. **Disturbance of fauna** resulting from the presence of machinery or site workforce which may result in displacement from foraging areas and/or breeding sites.
Operation and Maintenance This phase will require the attendance of maintenance crews and use of machinery intermittently along the Onshore Cable Corridor (mainly at the joint bays) and at the Onshore Substation site.	**Disturbance of fauna** resulting from the presence of machinery or site workforce which may result in displacement from foraging areas and/or breeding sites.

Table 27.11 Development activities and mechanisms with potential to impact ecological features	
Development activity	Mechanism which could cause impact on receptor (feature)
Decommissioning The majority of cables and ducts would be cut and left insitu. Above ground structures and joint bays would be removed to a depth of 0.5 metres and back filled. The Onshore Substation would be decommissioned and equipment removed.	**Killing and injury/damage of flora and fauna** resulting in population losses. **Temporary habitat loss/damage** resulting in reduction in area of important habitat types, reduction in integrity of designated sites and/or reduction in habitat available to fauna. **Disturbance of fauna** resulting from the presence of machinery or site workforce which may result in displacement from foraging areas and/or breeding sites. These effects, although the same as those identified for the construction phase, are likely to be more restricted in nature due to the limited nature of the decommissioning works (i.e. cables would be left insitu, works being focused on the joint bays and substation only).

27.68. Cable installation would result in the temporary loss of habitats within the West Moors MoD site. Without mitigation, a short-term significant impact at the International level is probable.

27.69. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees.

St Leonards & St Ives Heaths SSSI

27.70. The Onshore Cable Corridor, where it runs through part of Hurn Forest, would directly affect part of the St Leonards & St Ives Heaths SSSI during the construction and decommissioning phases. The cable installation would require the temporary loss of heathland habitats and could have direct impacts on reptiles such as sand lizard.

27.71. Impacts have been minimised during the design development stage in terms of route choice, such that the development area is centred on the main forestry access track through Hurn Forest. The working width has not, however, been narrowed within the SSSI; this is because the standard working width would ensure the removal of some areas of conifer plantation (and subsequent increase in the amount of open area present; this is considered to be of benefit for heathland flora and fauna). Other embedded mitigation measures incorporated into the Project that would minimise impacts, include the implementation of the Environment Agency's Pollution Prevention Guidance that would reduce the risk associated with the loss of pollutants and dust into the surrounding area, and the restoration of heathland habitats. This measure would result in an overall increase in this habitat type (as many areas of conifer plantation felled would be re-instated as heathland).

27.72. The impact of the construction and decommissioning phases on the St Leonards & St Ives Heaths SSSI, without additional mitigation, is characterised in Table 27.12.

Table 27.12 St Leonards and St Ives SSSI impact characterisation

Mechanism	Temporary habitat loss and disturbance. Death or injury of associated fauna
Feature	St Leonards & St Ives Heaths SSSI
Value of Feature	UK
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	A 1.8 ha area of St Leonards & St Ives Heaths SSSI would be impacted. This is approximately 2% of the total area of the SSSI
Duration	The impact would occur throughout the duration of the construction and decommissioning works
Reversibility	Mortality and injury of fauna are permanent. Habitat loss with mitigation is reversible
Frequency	The impact would occur once during construction and once during the decommissioning phase
Timing	Construction phase (vegetation clearance stage and cable installation stage). Decommissioning

27.73. Cable installation and decommissioning would result in the temporary loss of habitats within the St Leonards and St Ives Heaths SSSI. Without mitigation, a short-term **Significant** negative impact at the UK level is probable.

27.74. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

27.75. Effects on ornithological features are addressed in Chapter 28, Onshore Ornithology. Impacts on reptiles are dealt with separately in this chapter.

Breakhill Heath and Breakhill Copse SNCI

27.76. The Onshore Cable Corridor would potentially pass through Breakhill Heath and Breakhill Copse SNCIs; these designations are contiguous. These areas are designated for patches of remnant heath found within predominantly mixed woodland habitat. Areas of remnant heath would be temporarily lost during construction through vegetation clearance and excavation. During the decommissioning phase further excavation to remove joint bays would also be required. Adjacent patches of remnant heath may also be damaged through the release of dust and pollutants from working areas.

27.77. Embedded mitigation measures have been identified to reduce or remove potential effects. The implementation of the Environment Agency's Pollution Prevention Guidance would reduce the risk associated with the loss of pollutants and dust going into the surrounding area. Discussions are ongoing regarding the potential restoration planting and this would be agreed with statutory consultees to inform the Impact Assessment that forms part of the application for development consent.

27.78. The impact of the construction phase on Breakhill Heath and Breakhill Copse SNCIs, without mitigation, is characterised in Table 27.13.

Table 27.13 Breakhill Heath and Breakhill Copse SCNI impact characterisation	
Mechanism	Habitat Loss
Feature	Breakhill Heath and Breakhill Copse SNCI
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative

Table 27.13 Breakhill Heath and Breakhill Copse SCNI impact characterisation	
Magnitude and Extent	The combined area of Breakhill Heath and Copse SNCIs within the Onshore Development Area boundary is approximately 2.74 ha, which is approximately 7% of the area designated as SNCI. The majority of this area is deciduous woodland with a small area of remnant heathland habitat
Duration	The impact would occur throughout the duration of the construction and decommissioning works
Reversibility	Habitat loss is reversible
Frequency	The impact would occur once during construction and once during the decommissioning phase
Timing	Construction phase (vegetation clearance stage and cable installation stage). Decommissioning

27.79. Cable installation and decommissioning would result in the temporary loss of habitats within Breakhill Heath and Breakhill Copse SNCI. Without mitigation, a short-term **Significant** impact at the County level is probable.

27.80. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

Non-statutory sites recognised for conifer plantations with remnant heathland

27.81. There are six non-statutory sites within the Onshore Development Area that comprise conifer plantation with remnant heathland habitats; these are Avon Common Plantation SNCI, Fillybrook Plantation SNCI, Hurn Forest SNCI, St Leonards Hospital SNCI, West Moors Plantation SNCI and The Nursery SNCI. It is the areas of remnant heathland which result in the assigning of the non-statutory designation status.

27.82. Within all of these areas the installation of the cable route would result in the temporary loss of habitats through vegetation clearance and excavation. During the decommissioning phase further excavation to remove joint bays

would also be required. Approximately 8.3 ha of the area within these non-statutory designated sites would be affected by the development; of this approximately 2.5 - 3 ha are heathland (the remainder being mostly conifer plantation or forestry track). The temporary loss of habitat accounts for 14% of the designated area within Avon Common Plantation SNCI; 4% within Fillybrook Plantation SNCI, 7.2% within Hurn Forest and St Leonards Hospital SNCI (the two SNCIs being in the same habitat block), 4.7% within West Moors Plantation SNCI and 6.9% within The Nursery SNCI.

27.83. Embedded mitigation measures that would minimise impacts include the implementation of the Environment Agency's Pollution Prevention Guidance. These measures would reduce the risk associated with the loss of pollutants and dust into the surrounding area.

27.84. The possible impact during the construction and decommissioning phases on non-statutory sites recognised for conifer plantations with remnant heathland, without further mitigation, is characterised in Table 27.14.

Table 27.14 Non-statutory sites recognised for conifer plantations with remnant heathland impact characterisation	
Mechanism	Habitat Loss
Feature	Non-statutory sites recognised for conifer plantations with remnant heathland
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	The area of the SNCIs affected is 8.3 ha
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact would occur once during the construction phase and once during the decommissioning phase (although on a smaller scale)
Timing	Construction phase (vegetation clearance stage and cable installation stage). Decommissioning

27.85. Cable installation and decommissioning would result in the temporary loss of habitats within the non-statutory sites recognised for conifer plantations with remnant heathland. Without mitigation, a short-term **Significant** impact at the County level is probable.

27.86. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

West Moors Meadows SNCI

27.87. The Onshore Cable Corridor would pass through West Moors Meadows SNCI which is designated for rush pasture and semi-improved neutral grassland. The installation of the cable and the eventual decommissioning of joint bays would result in temporary habitat loss. Approximately 3.5 ha (6.8% of the SNCI) falls within the Onshore Development Area.

27.88. Embedded mitigation measures that would minimise impacts include the implementation of the Environment Agency's Pollution Prevention Guidance. These measures would reduce the risk associated with the loss of pollutants and dust in to the surrounding area.

27.89. The impact of the construction and decommissioning phases on West Moors Meadows SNCI, without further mitigation, is characterised in Table 27.15.

Table 27.15 West Moors Meadows SNCI impact characterisation	
Mechanism	Loss of rush pasture and semi-improved neutral grassland habitat
Feature	West Moors Meadows SNCI

Table 27.15 West Moors Meadows SNCI impact characterisation	
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	The area of the SNCI within the Onshore Development Area boundary is approximately 3.50 ha, which is 6.8% of the total site
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact would occur once during the construction phase and once during the decommissioning phase (although on a smaller scale)
Timing	Construction phase (vegetation clearance stage and cable installation stage). Decommissioning

27.90. Cable installation and decommissioning would result in the temporary loss of habitats within West Moors Meadows SNCI. Without mitigation, a short-term **Significant** impact at the County level is probable.

27.91. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

Mannington substation SNCI

27.92. The Onshore Cable Corridor would pass through Mannington Substation SNCI which is designated for 'varied habitats'. The installation of the cable and the eventual decommissioning of joint bays would result in temporary habitat loss. Approximately 0.8 ha (10.9% of the SNCI) falls within the Onshore Development Area

27.93. The implementation of the Environment Agency's Pollution Prevention Guidance would reduce the risk associated with the loss of pollutants and dust in to the surrounding.

27.94. The impact of construction and decommissioning phases on Mannington Substation SNCI, without further mitigation, is characterised in Table 27.16.

Table 27.16 Mannington substation SNCI impact characterisation	
Mechanism	Loss of varied habitats
Feature	Mannington Substation SNCI
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	The area of the SNCI within the Onshore Development Area boundary is approximately 0.80 ha, which is 10.86% of the total site
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact would occur once during the construction phase and once during the decommissioning phase (although on a smaller scale)
Timing	Construction phase (vegetation clearance stage and cable installation stage) decommissioning

27.95. Vegetation clearance, soil stripping and trenching would remove a small area of the 'varied habitats' within the SNCI which may not recover without mitigation. For this reason, without mitigation, a **Significant** impact at the County level is probable.

27.96. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

27.10.2 Habitats impact assessment

Lowland mixed deciduous woodland

27.97. Embedded mitigation avoids impacts on many woodland habitats either by avoidance or through the use of trenchless crossing techniques. Woodlands directly on the route with ancient woodland status, (Figure 27.5), include: Danes Stream Coppice (Figure 27.6b), Great Woar Copse (Figure 27.6c), and Beckley Moor Copse (Figure 27.6c). Trenchless crossing would be used to avoid impacts on these ancient woodlands and on other woodlands including Golden Hill (Figure 27.6b) and Slape Copse (Figure 27.6f).

27.98. There are a further ten woodlands which fall partially within the Onshore Development Area boundary and would be directly impacted by vegetation clearance and soil stripping, to facilitate cable trenching or construction compounds. All woodlands along the cable route are listed, starting from the Landfall, in Table 27.17. For those woodlands which would be impacted the area and percentage of the total woodland block affected is listed. The total woodland area within the Onshore Development Area boundary is 10 ha, which is approximately 6% of the total woodland area through which the Onshore Cable Corridor would pass. Further design iterations should mean that the cable corridor would be minimised in these areas, where practicable.

27.99. Those woodlands where impacts cannot be avoided by embedded mitigation fall into two categories. In some woodland the cable route passes close to the woodland edge and overlaps with the working area. This type of affect is listed as 'edge' in Table 27.17 and includes: Honeylake Wood and Barewood Copse. The second category is where the development area passes through woodland and would create a gap. These woodlands include Breakhill Copse, Stanley's Copse, Dark Firs, Tilley's Plantation, Allensworth Wood, New Close Wood, East Moors Wood and Sturt's Farm Woodland. Habitat clearance for a construction compound would also be required in an area of birch woodland on the West Moors MoD site.

27.100. The loss of 9 ha of woodland habitat would be temporary. No woodlands would be completely removed so impacts on the habitat are only partial and the woodland habitats adjacent will be retained. Approximately 5% of the total woodland area would be impacted.

Table 27.17 Woodlands and areas impacted

Name of woodland	Total area of woodland in ha	Area affected (ha) within application boundary	% of woodland directly impacted	Type of effect
Honeylake Wood	8.87	0.13	1.4%	edge
Breakhill Copse	40.61	2.75	6.8%	gap
Golden Hill	2.04	Trenchless crossing	0	Trenchless crossing
Stanley's Copse	26.70	0.79	3.0%	gap
Danes Stream Coppice	3.36	Trenchless crossing	0	Trenchless crossing
Great Woar Copse	11.80	Trenchless crossing	0	Trenchless crossing
Beckley Moor Copse	30.57	Trenchless crossing	0	Trenchless crossing
Dark Firs	15.7	1.07	6.8%	gap
Tilley's Plantation	4.96	0.65	13.1%	gap
Allensworth Wood	16.53	1.05	6.4%	gap
New Close Wood	7.93	0.56	6.9%	gap
Slape Copse	1.16	Trenchless Crossing	0	Trenchless crossing
East Moors Wood	2.14	0.34	15.9%	gap
MOD Training Ground Wood	1.98	1.38	70%	compound

Table 27.17 Woodlands and areas impacted				
Sturt Farm Woodland	2.96	1.26	33.7%	gap

27.101. The impact of the site clearance on deciduous woodland habitat is characterised in Table 27.18.

Table 27.18 Deciduous woodland habitat impact characterisation	
Mechanism	Habitat loss.
Feature	Deciduous woodland habitat
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	Approximately 8.91 ha of habitat will be impacted within the Onshore Development Area boundary. This is approximately 7.4% of the total area of those woodlands affected
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact would occur once during the construction phase and once during the decommissioning phase (although on a smaller scale)
Timing	Construction phase (vegetation clearance stage and cable installation stage) decommissioning

27.102. Vegetation clearance, soil stripping and trenching would remove a small area of the deciduous woodland habitat within Hampshire and Dorset which may not recover without mitigation. Woodland cover is a declining resource and without mitigation, a **Significant** impact at the County level is probable.

Hedgerows

27.103. There are approximately 15 km of hedgerow habitat within the Onshore Development Area boundary. The installation of the cable would require the removal of up to 5 km of hedgerow during the construction phase, assuming a 40m cable corridor width.

27.104. The implementation of the Environment Agency's Pollution Prevention Guidance would reduce the risk to adjacent hedgerows by limiting the loss of pollutants and dust in to the surrounding area, as well as the restoration plans for hedgerows.

27.105. The impact of the site clearance on hedgerows is characterised in Table 27.19.

Table 27.19 Hedgerow habitat impact characterisation	
Mechanism	Habitat loss
Feature	Hedgerow habitat
Value of Feature	County
Phase	Construction
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	Vegetation clearance could result in the loss of approximately 5 km of hedgerows (assuming a 40m cable corridor)
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact would occur once during the construction period
Timing	Construction phase (vegetation clearance stage and cable installation stage)

27.106. Vegetation clearance, soil stripping and trenching would remove up to 5 km of hedgerow habitat within Hampshire and Dorset which may not recover without mitigation. In the long term, however, the Project would not result in a reduction of this habitat type. The length of hedgerow has declined across the UK, and without mitigation, a **Significant** impact at the county level is probable.

27.107. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

Lowland heathland

27.108. Approximately ten ha of heathland habitat would be temporarily lost during cable installation; areas around joint bays are likely to be disturbed again during decommissioning. The majority of this habitat occurs in small pockets or along linear features such as forestry tracks.

27.109. The implementation of the Environment Agency's Pollution Prevention Guidance would reduce the risk associated with the loss of pollutants and dust in to the surrounding area, as well as restoration of heathland which would be agreed with statutory consultees.

27.110. The impacts of the construction and decommissioning phases on lowland heathland habitat are characterised in Table 27.20.

Table 27.20 Lowland heathland habitat impact characterisation	
Mechanism	Habitat loss
Feature	Lowland heathland habitat
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of vegetation and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	Vegetation clearance could result in the loss of 10 ha of dwarf shrub heath and dry heath/acid grassland mosaic
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact would occur once during the construction phase and once during the decommissioning phase (although on a smaller scale)
Timing	Construction phase (vegetation clearance stage and cable installation stage) decommissioning

27.111. Vegetation clearance, soil stripping and trenching would remove a small area of the heathland habitat within Hampshire and Dorset which may not recover without mitigation. Lowland heathland has declined in extent and become fragmented across southern England and, without mitigation a **Significant** impact at the County level is probable.

27.112. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

Rivers and streams

27.113. Embedded mitigation avoids impacts on the major watercourse crossings through the use of trenchless crossing techniques. Both the River Avon and the Moors River would be crossed without any surface works being undertaken within river channels or in bank side habitats. Loss of pollutants into river systems would be controlled through the implementation of the Environment Agency's Pollution Prevention Guidelines. Consequently there should be no direct impacts on the River Avon and Moors River as a result of the development.

27.114. Danes Stream and Ripley Brook would be affected as they would be crossed using open trenching techniques. The working width would aim to be reduced at these crossing points to reduce impacts. Both bank side and in channel habitats would be temporarily lost during the construction phase only. As no joint bays would be constructed in these habitats no effects due to decommissioning are predicted. Loss of pollutants into these water

courses will be controlled through the implementation of the Environment Agency's Pollution Prevention Guidelines.

27.115. The impact of vegetation clearance, soil stripping and trenching on rivers and streams is characterised in Table 27.21.

Table 27.21 Rivers and streams habitat impact characterisation	
Mechanism	Loss of marginal vegetation
Feature	Rivers and streams habitat
Value of Feature	County
Phase	Construction.
Activity	Vegetation clearance and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	Small lengths (minimum widths to be determined following further design iterations) of several watercourses will be affected; downstream effects are also possible
Duration	The impact would occur during vegetation clearance and soil stripping and could be permanent
Reversibility	Habitat loss with mitigation is reversible
Frequency	The impact will occur once during the construction phase
Timing	Construction phase (vegetation clearance stage and cable installation stage)

27.116. Vegetation clearance, soil stripping and trenching would remove a small area of streambed and bank side habitats within Hampshire and Dorset which may not recover without mitigation. Although the areas directly impacted on are small the potential for downstream effects to occur may, without mitigation, result in a **Significant** impact at the County level.

27.117. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

27.10.3 Protected species impact assessment

Badger

27.118. Construction phase activities including soil stripping and trenching could result in impacts on badgers. One main sett and 15 subsidiary and outlier setts have been recorded within the Onshore Development Area. Trenching activity could have a negative impact on badgers occupying setts within the development area through direct mortality and injury and through destruction of places of shelter. Three main setts and 32 annex, subsidiary and outlier setts were recorded outside, but within 15 m of the Onshore Development boundary.

27.119. Badgers using setts within 15 m of the Onshore Development Area boundary may be impacted by disturbance from the presence of machinery and the workforce during the construction phase. Impacts from temporary loss of foraging habitat could also occur, but are unlikely to be significant because of the widespread availability of other foraging areas within the badger's home range (approximate 1 km radius of a main sett). No significant impacts are likely during the operation and maintenance phase. No significant impacts are likely during the decommissioning phase unless new setts are established post-construction. Survey for new setts would be undertaken prior to decommissioning, as listed in the embedded mitigation.

27.120. The impact of construction phase activities on badgers, without mitigation, is characterised in Table 27.22.

Table 27.22 Badger impact characterisation	
Mechanism	Killing and injury Destruction of setts Disturbance
Feature	Badger

Table 27.22 Badger impact characterisation	
Value of Feature	Zone of influence – assessment to account for legislation only
Phase	Construction
Activity	Vegetation clearance and excavation
Positive/Negative	The impact would be negative
Magnitude and Extent	One main sett and several outlier setts could be impacted by destruction or disturbance
Duration	The impact would occur for the duration of the construction phase
Reversibility	Mortality and injury to badgers and destruction of setts is not reversible
Frequency	The impact would occur once during the construction phase
Timing	Construction phase (vegetation clearance stage and cable installation stage)

27.121. During construction, without mitigation, there would be a certain **Significant** impact on badgers within the zone of influence. The impact on the badger population within the working width would be temporary as badgers are likely to re-colonise the area and build new setts following construction.

27.122. Badgers are protected under the Protection of Badgers Act 1992 and are a material consideration in the planning process.

27.123. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

Bats

27.124. At least ten species of foraging and commuting bat were recorded within the Onshore Development Area, although no roost sites were identified. Bats could be affected by the development during the construction phase and, to a lesser extent, the decommissioning phase through the temporary loss of foraging habitat and disturbance due to temporary lighting, where this is required.

27.125. The impact of site clearance and construction on bat species, without mitigation, is characterised in Table 27.23.

Table 27.23 Bats impact characterisation	
Mechanism	Habitat loss reducing the availability of habitat for foraging and commuting Disturbance
Feature	Bats
Value of Feature	County
Phase	Construction and decommissioning
Activity	Clearance of hedgerow, woodland, grassland and heathland habitats
Positive/Negative	The impact would be negative
Magnitude and Extent	The impact would affect at least ten species of bat using linear features on the site, including hedgerows, woodland edges and streams, for foraging and commuting purposes
Duration	The impact would be present from the time vegetation is removed during construction, until habitats have been restored, with a reasonable amount of tree and hedgerow growth, post construction
Reversibility	Habitat loss is reversible
Frequency	The impact would occur once during the construction phase and once during the decommissioning phase (although on a smaller scale)
Timing	Construction phase (vegetation clearance stage and cable installation stage) decommissioning

27.126. Although the population of bats foraging and commuting within the Onshore Development Area boundary has been assessed as being of county importance, this population is likely to forage and commute over a large area and is not solely dependent on the habitats that would be impacted by the development. Consequently during the construction phase the impact is not considered to be significant at the county level, however, without mitigation, there would be a probable **Significant** impact on bats at the local level. The impact would be temporary.

27.127. Bats and their roosts are protected by European legislation. Although bat foraging and commuting habitat is not specifically protected by legislation, planning policy ensures it is considered during the process. To comply with relevant planning policy and reduce the likelihood of significant impacts, mitigation measures would be adopted as part of the application.

27.128. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees

Reptiles (excluding sand lizard)

27.129. Vegetation removal and soil stripping during the construction phase and, to a lesser extent the decommissioning phase, could result in the killing and injury of reptiles occupying suitable habitats such as heathland and coarse grassland. There would also be a temporary loss of habitat available for use by reptiles within the Onshore Development Area.

27.130. During construction and decommissioning works reptiles could be affected in the following ways:

- Direct mortality and injury;
- Habitat damage and loss.

27.131. Embedded mitigation measures associated with habitat restoration of heathland and other suitable habitats would ensure that the loss of habitat is temporary; suitable habitat would also be more abundant following construction as areas of conifer plantation are converted to heathland habitats.

27.132. The impact of construction activities, without further mitigation, is characterised in Table 27.24.

Table 27.24 Reptiles impact characterisation

Mechanism	Killing and injury Habitat Loss
Feature	Reptiles (excluding sand lizard) – assessment to account for legislation only
Value of Feature	Local
Phase	Construction and decommissioning
Activity	Vegetation removal and soil stripping
Positive/Negative	The impact on reptiles would be negative
Magnitude and Extent	Four species of common reptiles could be impacted and population levels could be high in the most suitable habitat areas
Duration	The impact would be present for the duration of the construction phase and would remain until restoration of habitats suitable for reptiles was achieved. This could be a period of one to three years
Reversibility	Mortality and injury is not reversible; habitat loss is temporary
Frequency	The impact will occur once during the construction period and once during the decommissioning phase
Timing	Construction phase (vegetation clearance stage and cable installation stage) decommissioning

27.133. During construction, without mitigation, there would be a certain **Significant** impact on reptiles at the local level. The impact would be temporary as reptile populations within the Onshore Development Area boundary would be expected to recover as re-established habitats are colonised post development.

27.134. Reptiles are protected from killing and injury under the WCA, and the implementation of appropriate mitigation measures is therefore necessary

to ensure legal compliance and would be included in the ES. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees.

Sand lizard

27.135. Vegetation removal and soil stripping during the construction phase and, to a lesser extent the decommissioning phase, could result in the killing and injury of sand lizards occupying suitable heathland habitats. There would also be a temporary loss of habitat available for use by sand lizards within the Onshore Development Area.

27.136. Embedded mitigation measures associated with habitat restoration of heathland and other suitable habitats would ensure that the loss of habitat is temporary; suitable habitat would also be more abundant following construction.

27.137. The impact of construction activities, without mitigation, is characterised in Table 27.25.

Table 27.25 Sand Lizard impact characterisation	
Mechanism	Killing and injury Habitat Loss
Feature	Sand lizard
Value of Feature	County
Phase	Construction and decommissioning
Activity	Vegetation removal and soil stripping
Positive/Negative	The impact on sand lizards would be negative as a result of killing and injury and habitat loss
Magnitude and extent	Sand lizards could be impacted as population levels; surveys suggest small populations in suitable areas of habitat
Duration	The impact would be present for the duration of the construction phase and would remain until restoration of habitats suitable for reptiles was achieved. This could be a period of one to three years
Reversibility	Mortality and injury is not reversible; habitat loss is temporary
Frequency	The impact would occur once during the construction period and once during the decommissioning phase
Timing	Construction phase (vegetation clearance stage and cable installation stage). Decommissioning

27.138. The population of sand lizards within the Onshore Development Area boundary is likely to be only a small proportion of that found in the counties of Hampshire and Dorset. However, this species is rare in both the UK and Europe, being restricted to heathland and sand dune habitats. During construction and decommissioning phases, without mitigation, there would be a certain **Significant** impact on sand lizard at the county level. The impact is likely to be temporary as the population within the Onshore Development Area boundary could be expected to recover by re-colonisation from neighbouring areas of suitable habitat following habitat reinstatement.

27.139. The sand lizard is a European protected species under the Habitats Regulations. As such, it would be an offence to kill, injure or disturb sand lizards and also to damage or destroy a breeding site or resting place. Mitigation for this species requires approval under licence from NE. Planning policy also makes the presence of protected species a material consideration in the determination of applications.

27.140. To comply with relevant legislation and planning policy and reduce the likelihood of significant impacts, additional mitigation measures are the subject of on-going discussions with statutory consultees.

Aquatic invertebrates

27.141. Impacts on aquatic invertebrate populations in the River Avon and Moors River will be avoided through the use of trenchless crossing techniques.

27.142. Pollution of water-courses, including Danes Stream, Ripley Brook, Walkford Brook, Bure Brook, Burley Brook and tributaries of the River Mude, could impact aquatic invertebrate species by killing off or reducing populations. Pollution could result, for example, from leaking pumps or machinery during the construction phase only. Increase in sediment load created by trenching operations at watercourse crossings could also affect invertebrate populations. Water quality can be monitored by recording the aquatic invertebrate families present in water courses using the British Monitoring Working Party (BWMP) methodology. A reduction in water quality could also impact other aquatic species including fish.

27.143. Spread of pollutants into river systems would be controlled through the implementation of the Environment Agency's Pollution Control Guidelines.

27.144. The impact of construction activities on aquatic invertebrates, without mitigation, is characterised in Table 27.26.

Table 27.26 Aquatic Invertebrates impact characterisation	
Mechanism	Pollution or sedimentation of watercourses
Feature	Aquatic invertebrates
Value of Feature	County
Phase	Construction
Activity	Open cut trenching crossings of watercourses
Positive/Negative	The impact would be negative
Magnitude and Extent	Small lengths (minimum of 11 m) of several watercourses will be affected; downstream effects are also possible
Duration	The impact could persist for months dependent on flow rate and pollutant type
Reversibility	Impact could be irreversible in the short term
Frequency	The impact could occur once or on multiple occasions during the construction phase
Timing	During the construction phase

27.145. Impacts on aquatic invertebrates as a result of construction activities could be **Significant** at the local level without the implementation of additional mitigation measures.

27.146. Potential Mitigation is detailed in the Potential Mitigation section of this chapter, and this will be discussed and agreed with statutory consultees.

27.6 Potential Mitigation

27.6.1 General

27.147. Consultation with statutory consultees is on-going in relation to mitigation works that will be proposed as part of the Project. This mitigation will be finalised through consultation with statutory consultees and presented in the ES that will form part of the application for development consent. An outline of the mitigation measures proposed at this stage of the application are given in this section, further details will be provided in the Ecological Mitigation and Management Plan ('EMMP') to be submitted as part of the ES that will form part of the application for development consent.

27.6.2 Mitigation measures for designated sites

Dorset Heathlands (Ramsar site and SAC, including Holt and West Moors Heaths SSSI)

27.148. The Onshore Development Area where surface works would be undertaken in the West Moors MoD site, would be restored post construction to create heathland habitat. Further details of the reinstatement work in Dorset Heathlands will be provided in the ES and will be informed by on-going consultation with statutory consultees.

27.149. The additional mitigation measures would look to maintain and/or enhance the suitability of the site for other flora and fauna associated with the heathland habitats present (including breeding birds and reptiles).

27.150. Although there would be a short term negative impact as a result of temporary habitat loss, there would be a positive long term benefit as there would be an increase in the heathland area.

St Leonards & St Ives Heaths SSSI

27.151. The embedded mitigation measures described in this chapter, allow for the restoration of habitats within the development area following construction. Similar habitat types would replace those cleared with restoration occurring by either natural re-colonisation, native species planting or replacement of turfs cut and stored during the construction phase.

27.152. Although there would be short term negative impacts during construction, the long term effect on the SSSI would be neutral.

27.6.3 Mitigation measures for habitats

Mixed deciduous woodland

27.153. The habitat restoration detailed in the embedded mitigation measures would aim for there would not be any net loss of woodland habitat from the cable construction. Replanting of trees would be agreed with statutory consultees, as well as relevant landowners.

27.154. In the short term there would be a loss of semi-mature and mature trees as a result of site clearance. However, in the long term the mix of woodland ride, scrub edge and diverse deciduous woodland planting would be of benefit to wildlife.

Heathland

27.155. The embedded mitigation measures allow for the restoration of habitats within the development area following construction. Similar habitat types will replace those cleared with restoration occurring by either natural re-colonisation, native species planting or replacement of turfs cut and stored during the construction phase. Heathland habitat would be encouraged which would mean leaving clear felled areas along parts of the route, which would be managed to help heathland establishment.

27.156. Following habitat restoration there should be a long term net gain of heathland habitats within the development area and in the local area following construction. This gain will be made through the establishment of heathland in areas within the development area.

Rivers and streams

27.157. The embedded mitigation measure of the implementation of the Environment Agency Pollution Prevention Guidelines will minimise the risk of watercourses being polluted during construction. Construction practices will be put in place to ensure that pollution events can be detected and acted upon, if necessary. Water quality will be monitored using the Biological Monitoring Working Party (BMWP) methodology for determining water quality based on the aquatic invertebrate families present. Monitoring would be used pre-construction, during construction and post construction.

Hedgerows

27.158. The embedded mitigation measures described earlier would ensure that all hedgerows removed during the construction works would be reinstated with native hedgerow species as to their previous state as a minimum. This would ensure that in the long-term there will be no net loss of hedgerow due to the Project and the value of that currently present should improve. Design iterations should ensure that the hedgerow length temporarily affected is also minimised.

27.6.4 Mitigation measures for species

Badgers

27.159. Where direct impacts on badger setts cannot be avoided, mitigation will be carried out under licence from NE. The licence will enable badgers to be excluded from setts and allow the destruction of setts within the working area. A detailed mitigation method statement will be prepared for these setts, discussed with NE and submitted for approval post consent. The mitigation that will be required as part of the licence arrangements will include the provision of an artificial sett or sett(s) where agreement can be made with the relevant landowner.

27.160. Further surveys for badgers will be undertaken prior to decommissioning works to determine if new setts have appeared which could be impacted by the works.

27.161. Following appropriate mitigation carried out under licence from NE, there would be no impact on badgers as no licence would be granted if the status or welfare of badgers in the area would be compromised.

Bats

27.162. No bat roosts have been recorded within or adjacent to the Onshore Development Area boundary. Consequently the development will not require any NE licence to enable the works with respect to bats. However, as bat species are mobile and can create new roosts, an update survey of trees with potential to support roosting bats would be carried out prior to construction, to ensure that no new roosts had been established.

Should roosts be identified in the working area consultation with NE will be undertaken with the aim of procuring a licence to enable the cabling works to take place.

27.163. Displacement or disturbance of foraging and commuting bats will be minimised by ensuring that any light spillage from security lighting required at site compounds or in working areas is minimised through the use of cowling.

27.164. The reinstatement and improvement of heathland, hedgerow and woodland habitats post-construction will benefit foraging and commuting bats. In addition, in woodlands within the development area bat roosting boxes will be installed in suitable trees adjacent to the cable route, which would be agreed with NE and relevant landowners.

Widespread reptiles

27.165. Widespread reptile populations within the Onshore Development Area boundary will be captured and translocated to a suitable receptor site prior to construction to prevent the injury or death of individuals.

27.166. Receptor sites will be established within off-site areas. These receptor sites will be established prior to the start of construction to ensure that they are of suitable quality to support reptiles prior to any reptiles being translocated. Only receptor sites with suitable habitat and without an existing reptile population, or with a small existing population where the habitat can be enhanced to increase its carrying capacity for reptiles will be used.

27.167. Following the establishment of reptile receptor sites and the reinstatement of habitats within the development area, there would be a net gain of habitat for reptiles along the cable route.

Sand lizard

27.168. Mitigation for sand lizard will be carried out under licence from NE. Receptor areas would be created for sand lizard prior to construction activities beginning; the amount of habitat created would be agreed with NE and the relevant landowner.

27.169. Exclusion fencing would be installed around the development area in relevant areas to ensure that trapped areas are not re-colonised before completion of the development. Following completion, the exclusion fencing would be removed to enable sand lizards to re-colonise the area as habitat restoration occurs.

27.170. Following appropriate mitigation carried out under licence from NE, there would not be any impact on sand lizard as there would be more suitable habitat for this species within the local area.

Aquatic invertebrates

27.171. The impacts on aquatic invertebrates as a result of the development should be neutral. Monitoring of aquatic invertebrate families will be used as a tool to determine changes in water quality during and following the construction phase.

27.6.5 Overall Assessment

27.172. The surveys and assessment are ongoing and therefore there will be further consultation to discuss the findings to date. Therefore in the chapter, the predictions of impacts are preliminary and are necessarily high-level. Impact levels are therefore set out on a precautionary basis at this stage.

27.173. Mitigation measures are being identified in discussion with relevant statutory consultees which will seek to minimise predicted impacts. Further details of the embedded mitigation to be adopted (such as associated with the construction techniques and approach) will be included within the ES. It is anticipated that with this agreed embedded mitigation, together with additional mitigation where this is practicable, the potentially significant

effects identified for the Project could be minimised or avoided within the ES. In some instances, embedded mitigation is sufficient to prevent any significant impacts from occurring.

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Glossary

TERM	DEFINITION
Ancient Woodland	Land that has been continually wooded since at least 1600AD.
Artificial Refugia	Provides a suitable habitat for relict species.
Barotrauma	Injury caused by a change in air pressure, affecting typically the ear or the lung.
Baseline Data	The collection of information on habitats and species at a site.
Carr Woodland	Woodland in a wet or boggy area, usually containing alder or willow.
Coleoptera	An order of insects that comprise the beetles.
Embedded mitigation	Mitigation that is incorporated into the project design to avoid or minimise the impact on habitats or species.
Habitat Suitability Index	An index which measures the suitability of habitat to support great crested newts.
Lepidoptera	An order of insects that comprise the butterflies and moths.
Odonata	An order of predatory insects that comprise the dragonflies and damselflies.
Phase 1 habitat survey	Field survey technique which provides a relatively rapid system to record and map semi-natural vegetation and other wildlife habitats.
Riparian	Wetlands adjacent to rivers and streams

Abbreviations

TERM	DEFINITION
AW	Ancient Woodland
BAP	Biodiversity Action Plan
BMWP	Biological Monitoring Working Party
CBC	Christchurch Borough Council
CRoW	Countryside and Rights of Way
DERC	Dorset Environmental Records Centre
DWT	Dorset Wildlife Trust
EA	Environment Agency
ECOSA	Ecological Survey and Assessment Ltd
EMMP	Environmental Monitoring and Mitigation Plan
H&IoWT	Hampshire & Isle of Wight Wildlife Trust
HBIC	Hampshire Biological Records Centre
HCC	Hampshire County Council
HDD	Horizontal Directional Drilling
HPC	Hurn Parish Council
HSI	Habitat Suitability Index
IEEM	Institute of Ecology and Environmental Management
MOD	Ministry of Defence
NE	Natural Englan

TERM	DEFINITION
NERC Act	Natural Environment and Rural Communities Act
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIPs	Nationally Significant Infrastructure Projects
RSPB	Royal Society for the Protection of Birds
S41	Section 41
SAC	Special Areas of Conservation
SINC	Site of Importance for Nature Conservation
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act