PRELIMINARY ECOLOGICAL APPRAISAL

Goldborough Road BESS

ECO20016
2
December 2023

rpsgroup.com

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
1	Draft	Paul Turner	Tim Oliver Georgia Kelly	Tim Oliver	15/11/23
2	Issue	Tim Oliver	Georgia Kelly	Tim Oliver	07/12/23

Approval for issue

Tim Oliver 7 December 2023

Prepared by:

RPS

Paul Turner
Senior Ecologist

90 Victoria Street
Redcliffe
Bristol
BS1 6DP

T 01454 853000
E paul.turner@rpsgroup.com

EXECUTIVE SUMMARY

- RPS were commissioned by Enso Energy to undertake a Preliminary Ecological Appraisal (PEA) of a site of a proposed BESS and cable route on land adjoining Goldborough Road, Wallaston Cross, Pembrokeshire. The PEA comprised a desk study, Phase 1 habitat survey, and a species scoping survey.
- The survey recorded the range of habitats present within and adjoining the site. The species scoping survey assessed the potential of the site to support legally protected species and species of principal importance or other species which could present a constraint to the development of the site.
- The proposed BESS facility and new access road is located within a single grass ley / improved pasture which is bounded by hedgerows and a wooded stream.
- The proposed cable route passes through arable fields/grass leys, species-poor semi-improved grassland and the field boundary hedgerows. Two narrow sections of woodland are also present on the alignment of the cable route.
- A number of international nature conservation designation site occur within 10km of the proposed development. The boundary of the nearest designated site, Milford Haven Waterway SSSI / Pembrokeshire Marine SAC lies approximately 1.2km to the east of the site and approximately 260m east of the cable route at the closest point. A wooded stream located outside the boundary of the proposed BESS development is hydrologically connected to this designated site.
- Pembrokeshire Bat Sites and Bosherton Lakes SAC and its constituent SSSIs. Horseshoe bats, one of a qualifying features of this SAC, have extensive foraging ranges and the locality of the site has the potential to be used as foraging by these species.
- The site and adjoining habitats have potential to be used several protected species specifically:
  - **Bat species**: Bats will forage and commute along hedgerows and woodland edge habitat in the locality with an assemblage of species assumed to feed on the boundary of the BESS and on the alignment of the cable route.
  - **Bats (roosts):** Two semi-mature ash trees with dense ivy, located very close to the cable route, could have features with the potential to be used by roosting bats.
  - **Badger**: there is a badger main sett located on the line of the proposed cable route and two status setts in the vicinity.
  - **Dormouse:** the woodland and hedgerow are habitats (primarily off-site) have suitability for dormouse and have the potential to support a population. The record centre hold no records of this species within 2km from the site.
  - **Otter**: there is a very low likelihood of otter using hedgerows and adjacent woodland edge as laying up sites. It is assumed that otters will be frequently using habitats in the wooded valley to the south of the cable route and will be moving through the landscape at night.
  - **Breeding Birds:** the site will support a small assemblage of breeding birds in the boundary hedgerows. Ground nesting birds may nest in the arable and/or grassland with a low tussocky sward. Barn owl are resident in the local area and an individual was roosting on the boundary of the proposed BESS during the walkover survey.
  - **Wintering Birds**: the areas of arable and pasture to the west of Pembroke River will provide feeding and roosting areas for some of the wintering populations associated with intertidal habitat in the Milford Haven Waterway. The cable route crosses through these terrestrial habitats. The proposed BESS and cable route will also form a small part of the local wintering feeding habitat used by farmland passerines. The habitats directly affected by the BESS have low value for wintering birds.

- Consistent with legislation and planning policy, the development will need to include mitigation measures that fully offset the identified effects and include additional measures that will achieve a long-term enhancement.
- The step-wise approach, as set out in PPW 11, should be followed for site selection and site layout design to avoid / minimise adverse effects on biodiversity. Where effects are unavoidable it will need to be compensated through proportionate mitigation to fully address any adverse effects and provide additional enhancement.
- This Net Benefit for Biodiversity (NBB) should be an integral part of the landscape scheme and future site management in line with PPW requirements for ecosystem resilience.
- Given the relatively small scale of the BESS development footprint and the temporary nature of the cable installation works, many potential impacts on protected / notable species may be avoidable through the site design and sensitive construction practices.
- Specific measures recommended in this preliminary report are:

  – Avoid any loss or degradation of higher value habitat – woodland, hedgerows and watercourses

  – Protect woodland habitat crossed by the cable route through the use of Horizontal Direction Drilling (HDD)

  – Create and manage buffers of biodiversity value between the BESS footprint and the woodland, watercourse and hedgerows

  – Maintain stand-offs from woodland, watercourse and hedgerows during construction with physical barriers.

  – Implement of best practice environmental protection measures should be employed throughout construction to ensure of-site habitats are not affected.

  – Avoid light spill from artificial lighting onto hedgerows and woodland through location of lighting units and specifications.

  – Adopt environmentally sensitive lighting consistent with the most recent guidance published by Institute of Light Professionals and the Bat Conservation Trust.

  – Minimise length of hedgerow removal required for the cable installation. Where the creation of gaps is unavoidable use infill replacement planting with locally native species that increase the woody species diversity.

  – Retain and protect semi-mature trees within/close to the working area.

  – Review all opportunities to avoid sett disturbance. Where sett disturbance is possible, a Welsh Government badger disturbance licence would need to be obtained for the cable route and would be informed by a detailed survey of the sett entrances affected and associated badger activity.

  – Where possible, remove potential nesting habitats (hedgerows, ground vegetation) outside of the bird breeding season. At all other times habitat removal should be subject to nesting bird checks by a suitably qualified ecologist no more than 48 hours prior to disturbance and any active nests protected with a suitable stand-off.

  – Design and implement of a Precautionary Working Method Statement defining the species protection measures that will be followed wherever field margins and hedgerows will be lost or disturbed.

Contents

Tables

Drawings

Appendices

Appendix A Relevant Species Protection Legislation
Appendix B Detailed Designated Sites Information

1 INTRODUCTION

1.1 Purpose and Scope of this Report

1.1.1 RPS Planning and Development were commissioned by Enso Energy on behalf of Pembroke Green Limited to undertake a Preliminary Ecological Appraisal (PEA) of land adjoining Goldborough Road, Wallaston Cross, Pembroke, South Wales.

1.1.2 Pembroke Green Limited propose to develop the site for use as a Battery Energy Storage System (BESS) and to install a c1.8km cable to connect the site to the national grid.

1.1.3 The aim of the PEA is to provide an initial assessment of the site's ecological value, and the potential effects on the site as a result of the proposed development. The assessment comprises the following elements:

- A desk-based search for designated sites and records of protected species and other species that could present a constraint to development.
- Phase 1 habitat survey of the habitats present on site.
- An assessment of the site for potential to support protected species or other species that could present a constraint to development, and appropriate recommendations for further survey work if necessary.

1.1.4 The findings of the PEA are presented in this report and the accompanying Habitats Map based on the Phase 1 Habitat Survey. This report is referred to as a Preliminary Ecological Appraisal Report (PEAR) in accordance with CIEEM (2017).

1.1.5 This assessment is considered 'preliminary' until any required protected species, habitat or invasive species surveys are completed, and the results incorporated into a final Ecological Appraisal or Ecological Impact Assessment (EcIA) which supports the planning application. Where additional surveys are considered necessary this has been identified in the PEAR.

1.1.6 The PEAR also provides outline options for avoidance / mitigation / compensation measures as appropriate; and makes recommendations for appropriate biodiversity enhancements in line with national and local planning policy.

1.1.7 This report pertains to these results only. Recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RPS. This report and the supporting surveys and desk-based assessment have been carried out and prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013).

1.2 Site Description

BESS Development Area and Context

1.2.1 The proposed development site is located to the south of Pembroke Power Station and comprises the proposed BESS facility and new access road, and the cable route connecting the battery storage facility to the National Grid sub-station within Pembroke Power Station.

BESS Site and Access Road

1.2.2 The proposed BESS facility site is approximately centred on Ordnance Survey Grid Reference SM927 010 and comprises part of a grass ley/improved pasture. The field is bounded by mature regularly cut hedgerows on three sides. The proposed short access road connecting the BESS to an is unnamed road is located within the same field as the proposed BESS.

1.2.3 The surrounding land use within approximately 2km of the around the proposed BESS facility is largely a mix of arable and pasture fields with mature field boundary hedgerows.

1.2.4 A 15m wide wooded ditch/watercourse forms the western boundary of the site. The watercourse joins a larger wooded stream valley approximately 385m to the southwest, and which in turn flows into the Pembroke River (part of the Milford Haven Waterway SSSI) around 1.1km to the east.

1.2.5 There are further areas of woodland and scrub about 700m to the northwest and 620m north. There are also several large field ponds within 1km in all directions.

1.2.6 The small hamlet of Wallaston Green lies about 275m to the southwest, and there is an operational solar farm 390m to the west. The boundary of Pembroke Power Station is approximately 1.1km to the north, with Milford Haven oil terminal is approximately 1km to the northwest.

Cable Route

1.2.7 The cable route is approximately 1.84km and runs the southeast corner of the power station site to the eastern side of the proposed BESS facility. The cable route crosses eight fields (grass ley / arable / pasture) and dissects seven field boundary hedgerows.

1.2.8 The alignment also passes through two narrow blocks of semi-natural woodland / scrub in which small spring fed watercourses flow down into the main watercourse in the base of the main wooded valley to the south.

1.2.9 The intertidal habitats associated with the Pembroke River are located between 350m and 450m to the east of the cable route at the closest point.

1.3 Legislation and Policy

1.3.1 Relevant legislation, policy and guidance are referred to in this report where appropriate. Their context and application are explained in the relevant sections of this report. The relevant legislation, policy and guidance include:

- Environment (Wales) Act 2016,
- The Conservation of Habitats and Species Regulations 2017,
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019,
- The Wildlife and Countryside Act 1981 (as amended),
- The Protection of Badgers Act 1992,
- The Countryside and Rights of Way Act 2000 (as amended),
- The Natural Environment and Rural Communities Act 2006,
- Planning Policy Wales Edition 11,
- Technical Advice Note 5 (TAN5),
- Pembrokeshire Local Biodiversity Action Plan, and
- Pembrokeshire Nature Recovery Action Plan.

1.3.2 A summary of legislation relevant to protected or other species identified as potential constraints in this report is provided in Appendix A.

2 METHODS

2.1 Desk Study

2.1.1 Ecological information and species records was obtained from West Wales Biodiversity Information Centre (WWBIC), the government 'MAGIC' website (https://www.magic.defra.gov.uk), the Natural Resources Wales website (https://naturalresources.wales/evidence-and-data/maps/) and the Joint Nature Conservation Committee website (http://jncc.defra.gov.uk).

2.1.2 The following data was requested/obtained to inform the desk study:

- Records for protected species or other species of conservation interest recorded within the last ten years and within 2 km of the site.
- Bat records within the last ten years and within 5 km of the site.
- Non-statutory sites of nature conservation interest within 2km of the site e.g. Sites of Importance for Nature Conservation (SINCs) and Local Wildlife Sites (LWSs).
- Local and National statutory sites of nature conservation interest within 2km of the site e.g. Sites of Special Scientific Interest (SSSIs), Local Nature Reserves (LNRs) and National Nature Reserves (NNRs).
- International statutory designated sites within 10km (Special Protection Areas (SPAs) and Special Area of Conservation (SACs).

2.1.3 General information on the occurrence and distribution of wildfowl within nearby Designated sites was obtained from The BTO website (https://app.bto.org/webs-reporting/lowtides.jsp)

2.1.4 A 1:25,000 OS map was used to identify nearby features such as ponds or green corridors that could provide habitat for protected species, or connectivity to other areas of suitable habitat, which would influence the assessment.

2.2 Site Survey

2.2.1 The survey was undertaken over two days on 2nd and 3rd October 2023 by Georgia Kelly AIEEM. The Phase 1 Habitat Survey followed the standard methodology (JNCC, 2016), and as described in the Guidelines for Preliminary Ecological Assessment (CIEEM, 2017).

2.2.2 The site survey element of the ecological appraisal consisted of two components: a Phase 1 Habitat Survey and a scoping survey for protected species and other species of conservation concern which could present a constraint to development.

2.2.3 The on-site habitats were assessed for their suitability to support protected species or other species of conservation importance that could pose a planning constraint. The suitability of adjacent off-site habitats, and the Site's connectivity with suitable habitats in the surrounding area was considered when assessing the Site's potential to support protected species.

2.2.4 Habitats or features with the potential to be used by species the receive legal protected or are listed as Species of Principal Importance on Section 7 were noted. A preliminary search was made of suitable habitat for evidence of use by badger.

2.2.5 The presence/absence of any invasive non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 was recorded.

2.3 Limitations

Desk Study

2.3.1 The desk study data is third party controlled data, purchased for the purposes of this report only. RPS cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

Survey

2.3.2 At the time of the survey access was not permitted to the northern end of the cable route immediately to the south of Pembroke Power Station. This section of the cable route was viewed from the adjacent field and it was possible to assess the general habitat type and notes were made on plant species identifiable from a distance. A search of this land for evidence of use by faunal species and stands of invasive plant species was not possible.

2.3.3 The Phase 1 habitat survey was carried out at the end of the optimal survey season (April to mid October). Many herbaceous species would not be visible at this time of year and it is likely that some species within the grassland, particularly the semi-improved grassland will not have been recorded. Given the levels of agricultural improvement of the grassland with the site (all has been grazed by livestock quite extensively) the survey timing has not been a constraint on evaluating the conservation value of the on-site habitats.

2.3.4 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment.

2.3.5 The protected/notable species scoping assessment provides a preliminary view of the likelihood of these species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area (based on the desk study) and any direct evidence on the site. It should not be taken as providing a full and definitive survey of any protected/notable species group.

Accurate Lifespan of Ecological Data

2.3.6 Most ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for two years, assuming no significant considerable changes to the site conditions.

3 RESULTS

3.1 Desk Study

Designated Sites

3.1.1 A summary of the statutory and non-statutory designated sites within the search area is given in Table 3-1. More detailed information on the features of interest in each of the sites is given in Appendix B.

Table 3-1 Statutory Nature Conservation Designations within 10km of the Site

Designated Sites (*International sites in bold with component SSSIs*)	Distance from development at closest point			Description and Features of Interest
	BESS Facility	**Access Road**	**Cable Route**	
Pembrokeshire Marine SAC	1.28km E	1.1km E	0.26km E	• **Annex I habitats for which the site is designated:** Coastal lagoons; Atlantic salt meadows; estuaries, large shallow inlets and bays, mudflats and sandflats not covered by seawater at low tide; reefs; sandbanks; sea caves. • **Annex II species for which the site is designated:** Shore Dock *Rumex rupestris.*
• Milford Haven Waterway SSSI	1.28km E	1.1km E	0.26km E	The waterway has extensive rocky shores, with sandy beaches, mudflats, muddy creeks, muddy gravels, sheltered mud, moderately exposed sand, sheltered rock, species-rich rock pools, eelgrass beds, native oyster *Ostrea edulis*, saline lagoons, saltmarsh communities and reedbed. Terrestrial habitats include ancient woodland with rich ground flora and many lichens, a rich assemblage of flowering plants, mosses and liverworts. The site supports significant numbers of over-wintering wildfowl and waders, otters and provide feeding habitat for nearby internationally and nationally important bat breeding sites. There are also nationally scarce saltmarsh invertebrates
• Freshwater East Cliffs to Shrinkle Haven (part)	9.67km E	9.86km E	9.06km E	A coastline of low cliffs with a range of habitats including undulating exposed cliffs with crevice communities, bird-cliff plant communities around inlets, clifftop maritime grassland, small streams and wetland communities, sand dune systems scrub and woodland. The site supports numerous notable higher plants and a rich lichen assemblage on cliffs and notable invertebrates.
• Angle Peninsula Coast SSSI (part)	4.96km W	4.85km W	5.16km W	A mix of high cliffs, with ridges, slabs of bedrock and pinnacles interspersed by small narrow boulder and cobble beaches with one sandy beach known. The stie has a range of intertidal habitats including lower shore rocks, mid-shore boulders and bedrock, cliff caves, shaded rocky faces and overhangs, biologically rich rockpool communities and lichen communities on intertidal rocks. A small breeding population of chough, and foraging greater and lesser horseshoe bats.

Designated Sites (*International sites in bold with component SSSIs*)	Distance from development at closest point			Description and Features of Interest
	BESS Facility	**Access Road**	**Cable Route**	
• Castlemartin Range SSSI (part)	3.29km SW	3.24km SW	3.46km SW	A coastal plateau of limestone cliffs and a range of coastal habitats including exposed limestone sea-cliffs of European importance for their maritime vegetation. Site supports nationally scarce cliff plants; species-rich maritime grassland and maritime heath; sand dunes; dune slacks; neutral grassland and old hay meadows. Species of interest include otters, lichens, higher plants, bryophytes and a rich invertebrate fauna. Chough population, breeding seabird colony, significant numbers of wintering waders, and large numbers of greater and lesser horseshoe bats.
Pembrokeshire Bat Sites and Bosherton Lakes SAC	3.2km SE	3.3km SE	2.9km S	**Annex I habitats that are a primary reason for designation:** Hard oligo-mesotrophic waters with benthic vegetation of Chara spp./Calcium rich nutrient-poor lakes, lochs and pools. **Annex II species that are a primary reason for designation:** Greater horseshoe bat *Rhinolophus ferrumequinum.* **Annex II species present as a qualifying feature, but not a primary reason for designation:** Lesser Horseshoe Bat *Rhinolophus hipposideros.* **Annex II species present as a qualifying feature, but not a primary reason for designation:** Otter *Lutra lutra.*
• Orielton stable block and cellars SSSI	3.2km SE	3.3km SE	2.9km S	A significant nursery roost of lesser horseshoe bat.
• Stackpole SSSI and NNR	6.05km SE	6.26km SE	5.82km SE	An exceptionally biologically diverse site with a wide range of internationally and nationally important habitats and species including: sea cliffs, sandy bays, open and wooded dunes, grassland (calcareous, neutral, clifftop maritime), scrub (limestone / calcareous scrub, ericaceous maritime heath), a nationally important freshwater lake system, ancient and secondary woodland, rich lichen communities. Notable higher plants and aquatic plant assemblages, a rich invertebrate assemblage; at least ten bat species including horseshoe bats, otter, breeding birds, winter waterfowl.
• Stackpole courtyard and flats and walled garden SSSI	6.85km SE	7.0km SE	6.57km SE	Large nursery colonies of greater and lesser horseshoe bats, and common pipistrelle bats, as well as important transitory roosts. Other bat species roosting in the buildings are brown long-eared bat *Plecotus auritus*, natter's bat *Myotis nattereri*, Daubenton's bat, and whiskered bay *Myotis mystacinus*.
• Park House Outbuildings SSSI	7.19km SE	7.38km SE	6.89km SE	Large nursery colony of lesser horseshoe bats. Greater horseshoe bat have also been recorded using the buildings.

Designated Sites (*International sites in bold with component SSSIs*)	Distance from development at closest point: BESS Facility	Access Road	Cable Route	Description and Features of Interest
				Other bat species using the buildings are common pipistrelle and brown long-eared bat.
				•
Skomer, Skokholm and the Seas of Pembrokeshire SPA (overlaps with parts of West Wales Marine SAC and Pembrokeshire Marine SAC)	6.17km S	6.26km S	6.4km S	**Qualifying features:** • **Breeding bird assemblage:** • **Regularly occurring migrant bird species:** • **Assemblage of at least 20,000 waterfowl or seabirds in any season:**
				•
West Wales Marine SAC (overlaps with some marine parts of Pembrokeshire Marine SAC)	4.73km W	4.72km W	5.03km W	**Annex II species for which the site is designated:** *Harbour porpoise Phocoena phocoena*
				•
Castlemartin Coast SPA	2.65km W	2.53km W	2.84km W	**Qualifying features:** **Breeding birds:** chough
• Castlemartin Range SSSI (part)	3.29km SW	3.24km SW	3.46km SW	See description under **Pembrokeshire Marine SAC above**
• Broomhill Burrows SSSI (part)	2.58km W	2.46km W	2.77km W	A large dune system with a diverse range of habitats including: shingle ridges, sandy foreshore, strandline vegetation, grey dune and dune grassland, dune slacks and wet dune hollows, springs slacks and fen, and sea cliffs with gorse and heather scrub. Diverse plant and invertebrate species assemblages
• Stackpole SSSI and NNR (part)	6.05km SE	6.26km SE	5.82km SE	See description under Pembrokeshire Marine SAC above
				•
Limestone Coast of South Wales SAC	2.58km W	2.46km W	2.77km W	• **Annex I habitats that are a primary reason for designation:** Fixed dunes with herbaceous vegetation (grey dune); caves; European dry heaths; Semi-natural dry grasslands and scrubland facies on calcareous substrates. Submerged or partially submerged sea caves; vegetated sea cliffs of the Atlantic and Baltic coasts.

Designated Sites (*International sites in bold with component SSSIs*)	Distance from development at closest point BESS Facility	Access Road	Cable Route	Description and Features of Interest
				• **Annex II species that are a primary reason for designation:** Greater horseshoe bat*;* early gentian*;* petalwort
• Broomhill Burrows SSSI (part)	2.58km W	2.46km W	2.77km W	See description under Castlemartin Coast SPA
• Stackpole SSSI	6.05km SE	6.26km SE	5.82km SE	See description under Pembrokeshire Marine SAC above
• Stackpole Quay to Trewent SSSI	8.23km SE	8.38km SE	7.85km SE	See description under Pembrokeshire Marine SAC above
• Castlemartin Range SSSI (part)	3.29km SW	3.24km SW	3.46km SW	See description under Pembrokeshire Marine SAC above
Other National Designated Sites outside of SACs and SPAs				
• Castlemartin Corse SSSI	2.61km SW	2.53km SW	2.81km SW	Calcareous fen with a large and diverse reedbed, calcareous flushes and grazed fen-meadow, supporting rare plant communities and numerous scarce fen plants, some at their only known location in Pembrokeshire. This site also has a notable assemblage of invertebrates.
• Gweunydd Somerton Meadows SSSI	460m SE	660m SE	570m SE	Sixteen fields of unimproved mesotrophic grassland, neutral semi-improved grassland, marshy grassland, swamp and standing water, woodland, scrub and hedges. Grasslands vary from moderately to very herb-rich. Several locally uncommon plants are present. The grassland supports a diverse range of fungi. The site also supports small breeding populations of marsh fritillary butterfly *Euphydryas aurinia* and the shrill carder bee *Bombus sylvarum* as well as supporting a rich dragonfly fauna.

Abbreviations used in Table 3.1: **SAC** - Special Area of Conservation. **SPA** – Specially Protected Area. **SSSI** – Site of Special Scientific Interest. **NNR** - National Nature Reserve.

Species Records

3.1.2 A summary of the protected species records held by the Local Records Centre is provided in Table 3-2. This provides records of species which are legally protected species or other species of conservation interest which have been recorded within 2km (5km for Horseshoe bats) of the proposed development within the past 10 years and for which there is suitable habitat on or adjacent to the site.

Table 3-2. Species Records within 2km of the Site (5km for horseshoe bats) within the last 10 Years.

Species	Scientific Name	Species Status	No. of Individual Locations where Species Recorded
Bats			
Greater Horseshoe Bat	*Rhinolophus ferrumequinum*	EPS, WCA5, S7, LBAP	25
Lesser Horseshoe Bat	*Rhinolophus Hipposideros*	EPS, WCA5, S7, LBAP	21
Common Pipistrelle	*Pipistrellus pipistrellus*	EPS, WCA5, S7, LBAP	8
Soprano Pipistrelle	*Pipistrellus pygmaeus*	EPS, WCA5, S7	5
Pipistrelle Bat	*Pipistrellus sp.*	EPS, WCA5	3
Daubenton's Bat	*Myotis daubentonii*	EPS, WCA5	1
Noctule Bat	*Pipistrellus noctula*	EPS, WCA5, S7	6
Brown Long-eared Bat	*Plecotus auritus*	EPS, WCA5, S7	6
Long-eared Bat	*Plecotus sp.*	EPS, WCA5, S7	1
Whiskered Bat	*Myotis mystacinus*	EPS, WCA5	3
Whiskered / Brandt's Bat	*Myotis mystacinus / brandtii*	EPS, WCA5	1
Natterer's Bat	*Myotis nattereri*	EPS, WCA5	1
Serotine Bat	*Eptesicus serotinus*	EPS, WCA5	1
Myotis Bat	*Myotis sp.*	EPS, WCA5	4
Other Mammals			
Eurasian Badger	*Meles meles*	PBA	27
European Otter	*Lutra lutra*	EPS, WCA5, S7, LBAP	19
West European Hedgehog	*Erinaceus europaeus*	S7	5
Polecat	*Mustela nivalis*	S7	4
Reptiles			
Slow Worm	*Anguis fragilis*	WCA5 part, S7	3
Grass Snake	*Natrix helvetica*	WCA5 part, S7	5
Common Lizard	*Zootoca vivipara*	WCA5 part, S7	4
Amphibians			
Common Toad	*Bufo bufo*	WCA5 part, S7	8
Palmate Newt	*Lissotriton helveticus*	WCA5 part	6
Common Frog	*Rana temporaria*	WCA5 part	15

Abbreviations: **EPS**: European Protected Species. Fully protected under the Conservation of Habitats and Species Regulations 2012. **WCA5**: Fully protected under the Wildlife and Countryside Act 1981 – as amended. **WCA5 Part:** Protected from killing and injuring under the Wildlife and Countryside

Act 1981 – as amended. **S7**: Listed as a species of principal importance for conservation in Wales under Section 7 of the Environment (Wales) Act 2016. **LBAP:** Local Biodiversity Action Plan priority species in Pembrokeshire. **PBA**: Protection of Badgers Act 1992

3.1.3 The following RSPB (Wales) red and amber list, and Wildlife and Countryside Act Schedule 1 bird species for which potentially suitable habitats occur within the site have been recorded within 2km of the site:

- **Red List:** Short-eared Owl Asio flammeus, Dunlin Calidris alpina, Black-headed Gull Chroicocephalus ridibundus, Hen Harrier Circus cyaneus, Cuckoo Cuculus canorus, whitethroat Curruca communis, Yellowhammer Emberiza citrinella, Merlin Falco columbarius, Kestrel Falco tinnuculus, Herring Gull Larus argentatus, Common Gull Larus canus, Great Black-backed Gull Larus marinus, Bar-tailed Godwit Limosa lapponica, Black-tailed Godwit Limosa limosa, Linnet Linaria cannabina, Grasshopper Warbler Locustella naevia,Spotted Flycatcher Muscipapa striata, Curlew Numenius arquata, Common Ringed Plover Charadrius hiaticulspota, Golden Plover Pluvialis apricaria, Willow Warbler Phylloscopus trochilus, Marsh Tit Poecile palustris, Eurasian Bullfinch Pyrrhula pyrrhula, Winchat Saxicola rubera, Stonechat Saxicola rubicola, Woodcock Scolopax rusticola, Starling Sturnus vulgaris and Lapwing Vanellus Vanellus.
- **Amber List:** Long-tailed Tit Aegothalos caudatus, Skylark Alauda arvensis, Meadow pipit Anthus pratensis, Swift Apus apus, Pintail Anas acuta, Teal Anas crecca, Mallard Anas platyrhynchos, Greenfinch Chloris chloris, Marsh Harrier Circus aeruginosus, Snipe Gallinago Gallinago, Oystercatcher Haematopus ostralegus. Swallow Hirundo rustica, Lesser Black-backed Gull Larus fuscus, Jack Snipe Lymnocryptes minimus, Wigeon Mareca penelope, Red Kite Milvus milvus, Grey Wagtail Motacilla cinerea, Whimbrel Numenius phaeopus, Wheatear Oenanthe oenanthe, House Sparrow Passer domesticus, Goldcrest Regulus regulus, Shoveler Spatula clypeata, Garganey Spatula querquedula, Shelduck Tadorna tadorna, Redshank Tringa tetanus, Redwing Turdus iliacus, Song Thrush Turdus philomelos, Fieldfare Turdus pilaris and Mistle Thrush Turdus viscivorus,
- **WCA1:** Barn Owl *Tyto alba*, Cetti's Warbler *Cettia cetti*, Whooper Swan *Cygnus cygnus*, Greenshank *Tringa nebularia*, and Wood Sandpiper *Tringa glareola*.

3.2 Phase 1 Habitat Survey

3.2.1 Habitats within and adjoining the site are described in Table 3-3. An evaluation is provided of the potential for the habitats to be affected by the proposed development.

3.2.2 The location and extent of habitats is shown on the Habitat Plan (Drawing 1). The corresponding locations for Target Notes referenced in Table 3-3 are shown on the Habitat Plan.

Table 3-3 BESS and Access Route - Habitat Descriptions and Evaluation

Habitat Description	Photograph
BESS Site and Access	
Grass Ley / Improved Grassland The proposed BESS facility location is within a field of sown pasture (TN F1). The grassland has an even sward dominated by perennial ryegrass *Lolium perenne*, with occasional / rare creeping bent *Agrostis stolonifera*, broad-leaved dock *Rumex obtusifolius*, white clover *Trifolium repens*, dandelion *Taraxacum officinale* agg., and chickweed *Stellaria media*. There are several piles of dead wood overgrown with nettles along the south-western edge of the field. The north-western and south-western boundaries of the proposed BESS fall within the field, but the north-eastern and south-eastern boundaries are defined by the field boundary hedgerows (see descriptions below).	
Grass Ley / Improved Grassland The proposed access road runs west from the BESS within the same field as the BESS (see description above). The route of the access road is currently used for vehicle access into the field and has a high proportion of bare ground.	

Habitat Description	Photograph
Boundary Hedgerow (H1) The north-eastern boundary hedgerow (TN H1) of the BESS is uniformly cut to approximately 2m high and 2m wide with a dense scrubby structure and encloses a bank at its base up to 1m high at its northern end. The canopy is dominated by Blackthorn *Prunus spinosa*, with the following six species occurring rarely: Hawthorn *Crataegus monogyna*, Willow *Salix* sp., Gorse *Ulex europaeus*, elder *Sambucus nigra*, dog-rose *Rosa canina* and bramble *Rubus fruticosus* agg. The adjoining grassland extends to the hedge base with some ruderal and tall herb species scattered close to the hedge, specifically: hogweed *Heracleum sphondylium*, bracken *Pteridium aquilinum*, common nettle *Urtica dioica*, spear thistle *Cirsium arvense*, foxglove *Digitalis purpurea* and hart's-tongue fern *Asplenium scolopendrium*.	
Boundary Hedgerow (H2) The south-eastern boundary hedgerow (TN H2) of the BESS is very similar to the north-eastern boundary hedgerow in size, structure and composition. The hedgerow is also dominated by blackthorn but has only three other shrub species occurring rarely: hawthorn, willow and bramble; and occasional / rare ruderals/ tall herbs along the base including bracken, common nettle, bramble, spear thistle and hedge bindweed *Calystegia sepium*. There is a semi-mature multi-stemmed ash *Fraxinus excelsior* at the southern end of the hedgerow (TN T1). The tree is ivy-covered with a diameter at breast height (DBH) of ~50cm with multiple stems of ~30cm diameter.	

Habitat Description	Photograph
Boundary Hedgerow (H3). The proposed access road runs parallel to a field boundary hedgerow to the south. The hedgerow encloses a low bank and is scrubby and uniformly cut to ~3m high and ~2m wide. The hedgerow is similar in composition to other nearby hedgerows being dominated by blackthorn with rare occurrences of hawthorn, willow, bramble and dog rose. The hedge base flora is characterised by frequent common nettle and bramble with rare occurrences of spear thistle, herb Robert *Geranium robertianum*, wood avens *Geum urbanum*, hart's-tongue fern, foxglove, meadowsweet *Filipendula ulmaria*, hedge bindweed, Yorkshire fog *Holcus lanatus*, and false oat-grass *Arrhenatherum elatius*.	
Boundary Hedgerow (H4) The proposed access road connects to an unnamed road to the west through an opening in the western boundary hedgerow of Field F1 (TN H4). The hedgerow is similar to the other boundary hedgerows of the field, being uniformly cut to around 2m x 2m and dominated by blackthorn. Occasional shrub / tree species are hawthorn, willow, dog rose, elm *Ulmus* sp, and ash with bramble also present. The hedgerow has a more pronounced hedge base flora along its eastern side on the road verge, with species including frequent common nettle and bramble, occasional Yorkshire fog, and rare, cock's-foot *Dactylis glomerata*, false oat-grass, spear thistle, herb Robert, wood avens, hart's-tongue fern and meadowsweet.	

Habitat Description	Photograph
Scrub/ Broadleaved Woodland and Watercourse A narrow wooded minor watercourse (TN W1) forms the south-western boundary of the BESS. The wooded strip is a wide hawthorn hedgerow at the northern end which expands to the south on either side of the watercourse. The canopy is characterised by abundant willow with occasional hawthorn, and rare ash. Bramble and gorse are also present in the shrub layer. The ground flora in the narrow field margin is characterised by Yorkshire fog, bracken, bramble and ivy with a small number of ruderals including hogweed, common nettle, hedge bindweed, and spear thistle. The watercourse channel is less then 1m wide at the northern end widening to 1.5m to the south. The shallow running water was ~10cm deep at the time of the survey. The banks were moderately steep and up to 1m. The bankside vegetation is characterised by the aquatic / marginal species with frequent water cress *Nasturtium officinale*, soft rush, bittersweet *Solanum dulcamara*, and hemlock water dropwort *Oenanthe crocata*.	

Table 3-4 Cable Route - Habitat Descriptions and Evaluation

Habitat Description	Photograph
Cable Route	
Arable / Reseeded Grassland From the eastern side of the BESS, the proposed cable route passes through an arable field (TN F2). The field has some remaining crop stubble and new growth of recently sown ryegrass with occasional ephemerals.	
Grass Ley / Improved Grassland Field F3 has an established and longer sward dominated by a mix of Yorkshire fog and perennial ryegrass. Some crop stubble is present along the western field edge. Other species occurring rarely, including crane's-bill, speedwell *Veronica* sp, ragwort *Jacobea* sp., ground ivy *Glechoma hederacea*, willowherb *Epilobium* sp., meadow grass *Poa* sp, and field madder *Sherardia arvensis*.	

Habitat Description	Photograph
Grass Ley / Improved Grassland Field F4 has a sward dominated by a mix of Yorkshire fog and perennial ryegrass with ruderals occurring at low frequency, including crane's-bill, thistle *Cirsium* spp., smooth sowthistle *Sonchus oleraceus*, speedwell, scented mayweed *Matricaria chamomilla* and wild oat *Avena fatua*.	
Arable / Reseeded Grassland Field F5 had been recently sown with a crop/grass with stubble remaining amongst the emerging vegetation. Ephemeral species were occasional.	

Habitat Description	Photograph
Improved Grassland The cable route passes through a narrow strip of improved grassland along the northern edge of field F5. The grassland is very species-poor being characterised by abundant perennial ryegrass with a few ruderals and other common grasses occurring infrequently. This is most likely remnant sown pasture which has been left uncultivated along the field edge.	
Semi-improved Grassland The cable route crosses two fields of semi-improved grassland (TN F6 and F7) of very similar composition. The fields are grazed by sheep and horses maintaining a uniform sward with abundant grasses and low diversity of forbs. Species include common bent *Agrostis capillaris*, Yorkshire fog, perennial ryegrass, crested dog's-tail *Cynosurus cristatus*, and the grassland herbs, yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata*, and common mouse-ear. Ruderals and negative indicator species included white clover, broad-leaved dock, common nettle, spear thistle and creeping buttercup *Ranunculus repens*.	

Habitat Description	Photograph
Semi-improved Grassland A third field of semi-improved grassland (TN F8) is also horse and sheep grazed and is similar in composition to fields F6 and F7, but with a higher proportion of ruderals particularly towards the northern edge where there are patches of soft rush *Juncus effusus*.	
Semi-improved Grassland At the northern end of the cable route the last field (TN F9) was not accessible during the walkover survey. From the adjacent field it could be seen that the area along the proposed cable route comprised semi-improved grassland similar to Field F8.	

Hedgerows on Cable Route

Hedgerow H7 is scrubby boundary hedge between arable fields, enclosing a bank to 1m high and uniformly cut to ~2m high and ~2m wide. The hedgerow is species-poor being dominated by blackthorn with rare occurrences of hawthorn hazel *Corylus avellana*, ash, elder and willow. There are some small gaps in the canopy especially at the southern end where bramble dominates.

The field is cultivated almost to hedge base, and the hedge base flora is species-poor with frequent false oat-grass, occasional common nettle and bramble, and rare dog rose, red campion *Silene dioica* and hogweed.

Hedgerows (cont.)

Hedgerow H8 adjoins a narrow hard-surfaced country lane and is densely structured and recently managed hedgerow to ~2m high and ~2m wide. It is species-poor being dominated by blackthorn with rare occurrences of hawthorn, gorse and elm.

The hedge base flora in the adjacent field is species-poor with occasional cock's-foot, soft brome *Bromus hordeaceus*, and false oat-grass, and rare common nettle dog rose, hogweed and hart's-tongue fern.

Along its northern side the lane verge comprises rank grassland with abundant false oat-grass, occasional common nettle, red campion, cock's-foot and red fescue, with small numbers of plants of honeysuckle *Lonicera periclymenum*, crane's-bill, Hart's-tongue fern, herb Robert, spear thistle, hogweed, ground ivy, ribwort plantain, dandelion, greater plantain *Plantago major*, ivy and bracken.

Hedgerow H9 is a second densely structured managed roadside hedgerow ~2m high and ~2m wide. It is species-poor with a canopy comprising a mix of blackthorn, hawthorn and bramble with a few gorse shrubs.

On its northern side the semi-improved grassland is grazed to the hedge base. Along its southern side the verge comprises rank grassland with abundant false oat-grass, occasional common nettle, red campion, cock's-foot and red fescue, with rare honeysuckle, crane's-bill, Hart's-tongue fern, herb Robert, spear thistle, hogweed, ground ivy, ribwort plantain, dandelion, greater plantain, ivy and bracken.

Hedgerows (cont.)

Hedgerow H13 located between fields (F6 and F7) supports with co-dominant blackthorn and hawthorn, frequent bramble, and rare occurrences of elm, willow, elder, ash, sycamore *Acer pseudoplatanus* and hazel. There are less than five woody species per 30m section.

The adjoining fields are grazed to the base of the hedge with occasional spear thistle and common nettle, and a few plants of red campion, ground ivy, soft brome and bracken.

Hedgerow H14 is a scrubby hedgerow between fields (F7 and F8) of sheep and horse grazed semi-improved grassland. The hedgerow has low species diversity with abundant blackthorn, hawthorn and bramble, occasional willow and rare occurrences of gorse.

The hedgerow is grazed to the base with a hedge base flora of frequent bracken, occasional common nettle, and rare foxglove, red campion, ground ivy, wood false-brome *Brachypodium sylvaticum*, soft brome, hart's-tongue fern, spear thistle, ivy and bracken.

Hedgerows (cont.)

Hedgerow H15 is a scrubby hedgerow between fields (F8 and F9). The hedgerow is species-poor with co-dominant blackthorn and hawthorn, frequent bramble.

The hedgerow adjoins pasture on both sides and is grazed up to is base. Ground flora at the base of the hedge comprised occasional common nettle and ivy, and rare examples of wood false-brome, hart's-tongue fern, herb Robert, spear thistle, red campion, ground ivy, and bracken.

Broadleaved Scrub Woodland

The cable route is aligned through a linear 'finger' of broadleaved woodland on either side of Goldborough Road (TN W4 and W5). This habitat extends to the south and is connected to the off-site wooded valley.

The woodland is scrubby with abundant blackthorn and less frequent willow, gorse, hazel, dog rose and bramble. Immature sycamore occurred rarely.

Along the verge of Goldborough Road, the ground flora diverse with the steep sided banks supporting bramble, ivy, bracken, herb Robert, hart's-tongue fern, common nettle, false oat-grass, soft brome, red campion, wood avens, meadowsweet, hogweed, soft shield fern *Polystichum setiferum*, and wood sage *Teucrium scorodonium*.

Dense scrub

A linear finger of dense scrub (TN W6) lies between fields F2 and F3 with a canopy characterised by frequent shrub willow and occasional hazel and hawthorn. There are a small number of semi-mature oak trees and a single semi-mature ash tree.

The ground was densely shaded and had a sparse cover of common nettle, ivy, bracken and false oat-grass.

Bramble Scrub

At the northern end of the cable route, it passes through a patch of dense bramble thicket with scattered larger woody shrubs (assessed from aerial photographs).

Hardstanding

The cable route crosses two hard surface country lanes: Goldborough Road which has recently been resurfaced, and a second unnamed lane.

A construction compound is present to the north of Field F4, north of the cable route.

Table 3-5 Habitat Descriptions and Evaluation – Off-site Habitats

Habitat Description	Habitat Description	Habitat Descri
Broadleaved Scrub Woodland and Stream A linear woodland 30-40m across with spring fed watercourse linked to the main wooded valley lies. The general structure of the woodland is scrubby with frequent to abundant blackthorn and rare or occasional hawthorn, willow and ash, elder, hazel, sycamore and gorse. Most of the trees (ash and sycamore) are small but there are a few larger semi-mature ash close to the field edge. The ground flora on the edge of the woodland (closest to the cable route) was characterised by locally frequent / abundant bracken, ivy, false oat-grass and common nettle. A few woodland ground flora species were noted (hart's-tongue fern, herb Robert, and red campion) as well as the ruderals cleavers *Gallium aparine*, hedge bindweed, hogweed, and rosebay willowherb *Chamerion angustifolium.* The stream (W2) has a 1m wide channel with shallow flowing water (~10cm deep) and steep banksides. Semi-mature trees, dense bracken and bramble are present along the woodland edge.	 	

Broadleaved Scrub Woodland and Stream (Continued)

Parts of the wooded stream valley to the south of the cable route is a very steep bank sloping down to the stream at the valley bottom and supporting dense blackthorn scrub and occasional gorse, hawthorn and hazel. Dense bramble and stands of bracken are also part of this habitat.

Dense Scrub

Close to the northern end of the cable route a small stand of scrub where several hedgerows converge (TN S4). The scrub consists of a very mature hawthorn, with blackthorn, immature shrub willow and bramble.

Off-site Hedgerows

The cable route runs parallel with a hedgerow (TN H5) at the western end. The hedgerow is continuous and uniformly cut to ~2m high and ~2m wide with a canopy of abundant blackthorn with rare hawthorn, willow ash and bramble. The hedge has a shallow dry ditch at the base.

The hedge base flora is characterised by frequent false oat-grass with occasional common nettle, and bracken, and rare herb Robert, hedge bindweed, red campion, hogweed, and ivy.

A shallow dry ditch with grassy banks is present along the north of the hedgerow.

The boundary hedgerows between fields F2 and F3 are continuous managed hedges ~2m high and ~2m wide with canopies of dominated by blackthorn with rare hawthorn, gorse, dog rose and bramble.

The hedge base flora is characterised by frequent false oat-grass with occasional common nettle, and bracken, and rare herb Robert, hedge bindweed, red campion, hogweed, and ivy.

Off-site Hedgerows Contd

Hedgerow H6 outside of the cable route between fields F3 and F4 is a managed field boundary ~2m high and ~2m wide with a canopy dominated by blackthorn with occasional bramble and rare elder, hazel and dog rose.

The hedge base flora is characterised by frequent false oat-grass with occasional common nettle, and ivy, and rare bracken and red campion.

Hedgerow H10 alongside a country lane is similar in structure and composition to H9 with the addition of rare elm and willow in the canopy.

Off-site Hedgerows Contd

Hedgerows H11 and H12 lies to the west of the cable route and forms the boundary between two grazed semi-improved grassland fields. The hedgerow is scrubby and uniformly cut to ~2m wide and ~2m high with a canopy of co-dominant blackthorn and hawthorn, frequent bramble and rare dog rose, willow, elder and ash.

The adjacent fields are grazed to the hedge base with a hedge base flora of occasional common nettle, red campion, and bracken, and rare red dead nettle *Lamium purpureum*, hart's-tongue fern, herb Robert and ground ivy.

3.3 Fauna

3.3.1 The potential value of the site and adjoining habitats for protected and Priority Species is described in Table 3-6 below.

Table 3-6 Protected Species Evaluation

Species / taxa	Suitable Habitat within or Adjoining the Site
Bats (Roosts)	The alignment of the proposed cable route passes very close to (within 5m) two semi-mature ash trees, both located within linear blocks of woodland (W4 and W6). The trees were covered with dense ivy which could conceal features with potential to be used by roosting bats. There are several semi-mature ash trees on the edge of the nearby off-site woodland to the south of the cable route. The closest of these is located at least 30m from the cable route. There are no other trees which could be used by roosting bats within or close to the proposed development. There are no buildings within or adjacent to the site.
Bats (Foraging and Commuting)	At least 10 bat species have been recorded with the local area including greater and lesser horseshoe bat. There are nationally important roosts of greater and lesser horseshoe bat within the Pembrokeshire Bat sites SAC, specifically. • a lesser horseshoe nursery roost 3.2km to the south-east, • lesser and greater horseshoe bat nursery roots 6.57km away and • a lesser horseshoe bat nursery roost 6.89km from the site. Bats from these roosts are likely to use the on-site hedgerows and woodland edge as light lines occasionally and in at least small numbers. The woodland edge along the boundary of the BESS, and the hedgerows within and on the boundaries of the BESS and cable route all provide suitable foraging habitat and flight lines for bats. These features are likely to be used regularly by at least small numbers of common bat species, and potentially by less common or rare species including greater and lesser horseshoe bats. The off-site woodland edge and wooded stream valley is likely to be a valuable local foraging feature for many bat species. Larger trees within the woodland may also have features used by roosting bats. Activity levels associated with arable and sown grass leys is expected to be very low. Grazed semi-improved grassland that has not be recently seeded has the potential to be associated with slightly higher levels of foraging activity. The on-site hedgerows are unlikely to be key foraging areas for horseshoe bats from nearby roosts given their intensive management and proximity to arable fields.
Badger	Two badger setts were identified during the site walkover. The larger sett is located on the edge of an arable field (F3) directly on the cable route and consisted of five entrances (four active, one inactive). Given the number of active entrances and the absence of nearby larger sett, it has been classified as a main sett.

Species / taxa	Suitable Habitat within or Adjoining the Site
	The smaller sett consisted of two entrances (one active) on the southern edge of an field F2 and is located approximately 100m south of the cable route. Snuffle holes with occasional dung pits were found along the woodland edge to the south of the cable route and along hedgerow H7. There is potential for new setts to be created within the scrub and woodland adjoining the site. The grassland and woodland will form part of the badger's foraging area for the resident social group.
Hazel Dormouse	The stands of woodland in the local area are of sufficient size to support a self-sustaining population. The network of hedgerows with connection to the woodland would contribute to the available resource if there is a local dormouse population. While the hedgerows with the site have some suitability as a habitat for dormouse, they are considered sub-optimal due to the limited diversity of shrubs, (being largely dominated by blackthorn and or hawthorn) which reduces the abundance and availability of food during parts of their active season (spring through to late autumn). There are no local records of dormouse within 2km of the site bit have been recorded in the wider area.
European Otter	Otter is resident in the nearby Milford Haven waterway and is active in the local area. There is no suitable aquatic habitat for otters within the site. The managed hedgerows have very limited value as resting up places for otter moving through the landscape. The wooded watercourse on the western boundary of the BESS is less than 15m wide and will be very unlikely to be used by otter during daytime hours. The linear blocks of woodland (with associated small watercourses) and the main wooded valley have the potential to be used by otter moving through the landscape, with the larger areas of woodland and dense scrub offering good shelter and cover in which otters could lay up during the day.
Birds - Wintering	The nearby Milford Haven Waterway SSSI is the closest designation with wildfowl interest (0.26km from the cable route and 1.38km from the BESS site). WeBS data for mudflats at Pembroke River (the closest part of the SSSI to the proposed site and cable route) confirms the intertidal habitats are used by reasonable numbers of the following wildfowl and wader species: shelduck, wigeon, curlew, dunlin, and redshank. Some of these species could also feed in arable fields and grassland in the local area. The grass leys and grassland fields within and adjoining the proposed BESS site have a very low likelihood by listed species. The fields in which the cable will be installed are located over 250m from Milford Haven Waterway SSSI. Use of the fields by gulls is likely. A few wader species (curlew and lapwing) are expected to intermittently use farmland in the locality, especially during high tides. Occasional use of fields crossed by the cable by waders is possible. WeBS data for designated sites further from the proposed development includes • Castlemartin Range SSSI (3.46km away): oystercatcher, curlew and lapwing • Stackpole SSSI and NNR (5.82km to the south) supports more than 29 species of waterfowl, some of which may feed on arable and grassland fields. • Skomer etc SPA (6.4km to the south): lesser black-backed gull.

Species / taxa	Suitable Habitat within or Adjoining the Site
	Due to the distance from the proposed development, the habitats within the site are not considered of value for the bird populations associated with these designated sites. functionally linked to reduces the potential for habitats the proposed development to be to these designated areas for populations of qualifying species.
Birds - Breeding	The hedgerows and woodland within and adjacent to the site are likely to be used by a reasonable assemblage of farmland birds including some species which are of conservation concern. The hedgerows lack the mature trees. All the hedgerows are intensively managed and none are wide with a dense mature structure that would confer higher value for farmland bird species. The absence of wide uncultivated field margins also reduces the value of the hedgerows for wildlife. The agricultural grassland and pasture which has the potential to be ground nesting birds particularly skylark and meadow pipit.
Barn owl	A barn owl was seen perching on a multi-stemmed semi-mature tree on the boundary of the proposed BESS site during the site walkover. The grass leys / improved grassland are sub-optimal foraging habitat for barn owl and will support limited populations of the small mammals on which barn owls feed, would be expected to be present in the bases of the hedgerow bases. The short grazed semi-improved grassland is also sub-optimal foraging habitat but the prey species are more likely to occur.
Reptiles	The arable fields and hedgerows with narrow strips of hedge base flora have very low potential value for reptiles. Of the three more commonly occurring species, slow worm would be the most likely to occur with the tall grass and bramble at the base of the hedgerows and alongside the edges of woodland the principal potential habitat. The grazed semi-improved grassland has very low potential value as reptile habitat.
Great Crested Newt.	Great crested newt is not considered to occur in Pembrokeshire based on an assessment of their range and conservation status in Wales (NRW, 2018). The site is over 90km west of the known range of GCN within Wales. This species is extremely unlikely to be present.
Invertebrates	The records of invertebrates in the surrounding 2km search area confirm high diversity in suitable habitat. Colonies of marsh fritillary and shrill carder bee occurs at Gweunydd Somerton Meadows SSSI with further records of shrill carder bee in suitable habitat in the surrounding landscape. There are also many records of Section 7 moth species from the SSSI, an area of unimproved grassland bounded by woodland. In contrast the intensively farmed grass leys and species-poor semi-improved grassland will have very low potential value for invertebrates and be associated with a limited species assemblage. The hedgerows provide the main habitat of value invertebrates within the site but with only a small total length of hedgerow within the site they would still be expected to support a relatively restricted range of invertebrate species.

4 ASSESSMENT

4.1 Habitats

4.1.1 The hedgerow network and semi-natural broadleaved woodland are the two Section 7 Priority Habitats within the site and cable route.

4.1.2 The development will result in localised loss for the creation of a new road access into the proposed development but hedgerows adjoining the BESS will be retained. The installation of the cable route may require the clearance of short sections of each hedge dissected by the route.

4.1.3 The alignment of the cable route crosses two fingers of scrub/woodland. The proposed directional drilling beneath these habitats would avoid the potential for adverse effects.

4.1.4 Permanent habitat loss will be limited to the grass ley / improved grassland within the footprint of the BESS.

4.1.5 Localised strips of grass ley and improved grassland will be subject to temporary disturbance during the installation of the cable. These fields are subject to intensive agricultural management and the effects of temporary disturbance on these habitats will be negligible.

4.1.6 Temporary disturbance of semi-improved grassland could result in localised effects on species the composition of low value habitats.

4.2 Fauna

4.2.1 The potential effects on species from the proposed development are presented in Table 4.1.

Table 4-1 Potential Effects on Fauna

Species / taxa	Potential Adverse Effects of Proposed Development in the Absence of Mitigation
Bats (Roosts)	The proposed use of directional drilling of the cable route beneath the woodland will enable the tree to be retained. Indirect disturbance from noise or artificial lighting during cable installation could adversely affect bats if there are roosts in the tree within scrub/woodland W4 and W6. Once the cable is installed there will be no operational impacts on roosting bats.
Bats (Foraging and Commuting)	Direct disturbance by noise or light could adversely affect bats foraging or flying along the boundary hedgerows and woodland adjacent to the BESS site. The proposed use of directional drilling for the cable installation will protect woodland on the alignment of the cable route. The removal of short sections of hedge for cable installation will create gaps up to 5m in length in seven hedgerows with low potential for this to change the behaviour (flight lines / foraging habitat) of individual bats. Reducing the extent of hedgerow loss will minimise the potential effect. Around the operational BESS noise and light during cable installation could adversely affect bats using the retained linear woodland and adjoining hedgerows.
Badger	The installation of the cable route via HDD (c20m below ground level) could result in indirect disturbance to the badger sett on the alignment of cable route. At 20m below ground level there would be no direct damage to the sett or obstruction of access, but depending on the technique employed noise and / or vibration could disturb badgers within sett chambers and high levels of vibration could affect the structure of tunnels and chambers.
Dormouse	The presence of dormouse in the short sections of hedgerow crossed by the cable route, but presence in the adjacent woodland and hedgerow network is possible. If present, there

Species / taxa	Potential Adverse Effects of Proposed Development in the Absence of Mitigation
	would be no adverse effects on the population from the removal of short sections of hedgerow following infill planting with native shrub species including hazel.
Otter	There is a low likelihood that otter could use the linear block of woodland within the site, crossed by the cable route and located close to the cable route working area. Noise and lighting during BESS construction and cable installation has the potential to adversely affect otter using these adjacent habitats. Once operational light spill from the BESS could affect the context of the immediately adjoining wooded habitat and reduce its potential to be used by otter to move through the landscape.
Birds - wintering	Works resulting in elevated levels of noise or lighting in sensitive areas, such as piling or floodlighting, would have potential negative impacts on wildfowl and wildfowl using the site as a supplementary feeding area to their main habitat. There are no anticipated effects from the construction of the BESS on wintering bird populations associated with the Milford Haven Waterway SSSI including the adjacent Pembroke River. The relatively small construction area is bounded on three sides by hedgerows and a wooded strip and lacks the open aspect selected by flocks of these species to avoid predation. There will be temporary disturbance in fields during cable installation which could result in very short term changes in behaviour if the cable works are undertaken between autumn and early spring. Noise or lighting associated with the construction of the BESS would have potential to affect the behaviour of flocks of farmland passerines in the immediate vicinity of the development area.
Birds - breeding	Most of the boundary hedgerows and all of the woodland will be retained. There is the potential for removal of short sections of hedgerow in the semi-improved grassland fields. Removal of sections of hedgerow on the line of the cable route during the breeding season (typically March to August inclusive) could result in the loss of active nests. In addition ground nesting birds (including skylark and meadow pipit) could nest in the fields crossed by the cable route during the breeding season. Works resulting in elevated levels of noise or lighting close to hedgerows or woodland or extended use of heavy plant would have a potential adverse effect on birds nesting nearby.
Barn owl	No features with the potential to provide nest sites will be affected. The tree where a roosting barn owl was observed provides relatively open cover and limited and shelter indicating that this species is likely to have a number roosting sites in the locality. Alternative roost sites are likely to be used following development. No habitats likely to be frequently used as foraging habitat will be lost.
Reptiles	Boundary hedgerows will be retained. Disturbance of field margins / hedge base flora, and localised removal of hedgerows for cable installation carries a very low risk of harming small numbers of slow worm.
Great Crested Newt	Considered to be absent. No Impact.
Invertebrates	The loss of part of a grass ley/improved pasture, and temporary disturbance of further grass leys/improved grassland and semi-improved grassland will have a minimal adverse effect on invertebrates.

5 RECOMMENDATIONS

5.1 Designated Sites

5.1.1 Potential for adverse effects of the development are identified for the following nearby designated sites:

- Pembrokeshire Marine SAC and its component SSSIs: Milford Haven Waterway SSSI, Castlemartin Range SSSI
- Pembrokeshire Bat sites SAC and its component SSSIs

5.1.2 A more detailed assessment of the potential impacts will form part of the ES. HRA screening is likely to be required to further quantify potential effects and if necessary, inform a full HRA assessment.

5.2 Habitats

5.2.1 Mitigation or enhancement measures proposed as part of the development will be provided in the Ecology Chapter of the Environmental Statement (ES). Outline recommendations are provided below subject to confirmation in the ES.

Avoidance

5.2.2 BESS site layout and the construction working areas should avoid any impact on the wooded watercourse with the establishment of stand offs between the working area and this higher value habitat. Stand offs should be enhanced as buffer zones in the development proposal and form an important part of the landscape scheme.

Minisation

5.2.3 Where hedgerow removal for the cable is unavoidable, the length of loss should be kept to a minimum and subject to replacement planting of native species. Where possible use directional drilling to avoid the removal of sections of hedgerow.

5.2.4 Where possible a stand-off should be implemented from hedgerows to protect the root systems of the shrubs and health of the habitat.

5.2.5 Best practice measures will be followed during construction to protect the retained and adjoining habitats from adverse impacts. This will include safe storage of materials and pollution prevention measures. Materials should be stored on hardstanding or bare ground. All environmentally sensitive working practices should be detailed in clear action lists in the Construction Environment Management Plan (CEMP).

Mitigation/Restoration

5.2.6 Any sections of hedgerow that are removed for the cable should be replaced with suitable native hedgerow planting, including hazel, to enhance the number of native species mix within the individual hedgerow.

Compensation

5.2.7 The landscape scheme should include the creation of neutral grassland managed for wildflower diversity and the planting of native shrubs and trees to integrate biodiversity value into the operational site. These habitats will need to be managed and monitored. Their biodiversity value

will need to fully offset the biodiversity loss associated with the removal of grass ley/improved grassland and additional enhancements.

5.2.8 A series of enhancements for biodiversity should be proposed for retained habitats within the red line boundary and if necessary additional habitats in the wider site. The biodiversity enhancements need to be provided over a minimum of 30 years. Following the initial targeted habitat creation/ enhancement, ongoing management actions aligned to biodiversity objectives would build on existing value and maintain the gains achieved over the operational life of the development.

5.3 Species

Bats

5.3.1 Stand-offs from retained hedgerows and woodland edge will enable bats to continue to use features. The stand-offs should be maintained using fixed physical barriers and not subject to any artificial light.

5.3.2 Horizontal directional drilling beneath the woodland fingers W4 and W6 should avoid direct impacts mature trees which may have potential bat roost features concealed in dense ivy. Once the method, timing and duration of drilling is more precisely defined, potential impacts on the trees should be reviewed.

5.3.3 It is recommended that the trees on the alignment of the HDD are subject to climbing inspections by a licensed bat ecologist to fully assess their potential to be used by roosting bats. The inspection would identify any potential roost feature in the trees. Where roost features are present and there is potential for indirect disturbance as a result of construction activities further climbing inspections or emergence / re-entry surveys should be carried out between May and September to determine the presence / likely absence of bat roosts and to characterise roosts if present.

5.3.4 Due to the proximity of the BESS to features within the hedgerow network bat activity surveys (transects and remote recording) should be undertaken between April / May and August / September to assess the use of these habitats by bats. Activity would also be assessed for the hedgerows crossed and adjacent to the cable route.

5.3.5 Light spill from artificial lighting onto hedgerows and woodland should be avoided through the use of environmentally sensitive siting and specification of lighting units consistent with the most recent guidance published by Institute of Light Professionals and the Bat Conservation Trust. Permanent loss or degradation of sections of hedgerow should be avoided to prevent impacts on bat foraging and flight lines.

Dormouse

5.3.6 There is potential for a dormouse population to utilise the wooded valley and surrounding hedgerow network, although there are no local record centre do not hold past records of this species within the search area. If dormouse occur in the locality the wooded watercourse land and hedgerows bounded the BESS and hedgerows crossed by the cable route have the potential to be used by this species.

5.3.7 It is recommended that presence/absence surveys are completed pre-commencement in habitats within and adjoining the proposed development and cable route where habitat with the potential to be used by dormouse could be directly or indirectly effected by the proposals.

Badgers

5.3.8 The use of HDD beneath the larger badger sett has the potential to cause disturbance to the sett and is likely to need to be subject to a Welsh Government licence. Any licence application will define the likely impact of the proposed works and set out the mitigation and species protection measures that will be implemented. This could include exclusion of badgers from the sett depending on the severity and duration of the impact.

5.3.9 Further pre-commencement badger activity survey should be undertaken to inform the assessment of effects and inform the licence application if required.

5.3.10 During construction, excavations should be infilled at the end of each day, or a ramp (such as a piece of timber) should be created to avoid badgers becoming trapped overnight in excavations. Construction materials should be safely stored overnight to avoid creating hazards that could harm badgers.

Otter

5.3.11 The presence of otters in the locality is known and a survey would only be needed if the development were to require direct loss or disturbance of habitats with the potential be used as resting places or support a holt.

5.3.12 It is recommended that pre-commencment otter surveys are undertaken to survey areas of scrub and woodland providing dense cover within 100m of the working area to assess presence/absence of daytime resting places.

Wintering Birds

5.3.1 It is recommended that the cable installation is completed between May and August at a time of year when there would be no potential for use of the agricultural pasture fields crossed by the cable route by roosting or foraging wader and wildfowl species that are qualifying features of the nearby designated sites.

5.3.2 In the event that autumn or winter working is unavoidable, the potential for disturbance effects is limited given the limited extent of open excavation (c100m), the very temporary nature of these works and in the context of existing agricultural management of fields.

Breeding Birds

5.3.3 Establishing a stand-off between the construction works and all areas of woodland, scrub and hedgerows would avoid direct impacts on habitats that will be used by most nesting birds and minimise the potential for indirect effects during construction activities.

5.3.4 In the final development sensitive lighting design should maintain the hedgerows and woodland on the boundary of the BESS as dark corridors to prevent a degradation in the potential value of the off-site habitats. Any requirements for temporary lighting during construction should seek to achieve the same outcome.

5.3.5 Species protection will need to be integrated into the development programme. Establishment of the working area in winter would avoid the potential for ground nesting birds to be nesting in the development area.

5.3.6 Removal of sections of hedgerow and trenching on the line of the cable route could result in the loss of active nests during the breeding season. Where work cannot be undertaken outside of the bird nesting season, an ecologist would need to confirm the absence of nests of ground nesting birds in grassland and arable fields, and of other species in hedgerows to be removed. The ecologist's check should be made no more than 48 hours before the proposed disturbing activity.

Any active nest sites within the development boundary would need to be protected from damage through exclusion zones.

5.3.7 Replacement of temporary hedgerow loss would ensure there is no net loss of nesting habitat.

Reptiles

5.3.8 Measures to protect reptiles should be undertaken where works are undertaken within areas of field margin and hedgerows or scrub. This should include two-phase cutting of the grassland under Ecological Clerk of Works supervision, undertaken between April-September when conditions are warm and dry.

Great Crested Newt

5.3.9 The site lies outside of the range of the great crested newt and there are no ponds within or adjacent it the site. No further surveys or actions are necessary.

6 CONCLUSIONS

6.1.1 Habitats within the site comprise grass ley / improved grassland, arable, semi-improved grassland (species-poor), species poor hedgerows and field margins, and three narrow fingers of broadleaved scrubby woodland with associated springs and minor watercourse channels.

6.1.2 Off-site habitats close to the site are mostly arable, semi-improved grassland and hedgerows. A wooded valley with watercourse lies to the south of the site with direct connectivity to Milford Haven Waterway SSSI.

6.1.3 Measures to avoid adverse effects on all higher value features and minimise other effects should be incorporated into the layout. Landscape proposals and future management of the BESS development should full offset biodiversity loss and provide additional enhancement. This would include replacement higher value grassland habitat (with greater importance for biodiversity than the low value pasture that will be permanently lost.

6.1.4 The development proposal will need to be designed to maintain and enhance biodiversity, in line with the requirements of the most up to date PPW and the Environment (Wales) Act 2016 to ensure the development provide a net benefit for biodiversity compared to the existing value. The resilience of ecosystems in the developed site is a key requirement and the landscape scheme needs to deliver diversity, extent, condition, connectivity and adaptability to change to achieve this.

6.1.5 The cable route passes very close to two trees which could contain features that could be used by roosting bats. Inspections of the trees are recommended to confirm their potential to support roosting bats during the works and all trees should be protected from disturbance wherever possible.

6.1.6 A badger main sett lies on the alignment of the section of cable to be installed through HDD. The extent to which vibration from drilling could affect badger sett chambers located above the cable installation will be fully reviewed. A badger disturbance licence should be obtained where disturbance cannot be avoided through design. Follow up pre-commencment badger surveys should be undertaken to assess levels of activity on the alignment of the cable route.

6.1.7 Artificial lighting in the completed development (and during construction) should be designed to avoid light spill on retained on-site including hedgerows and the wooded valley.

6.1.8 During the construction phase best practice, measures should be followed to protect retained habitats and populations of resident species as detailed in a CEMP.

6.1.9 For the cable route, the cutting back of the short sections of hedgerow should be undertaken as advance works outside of the nesting bird season (March-August inclusive). Stripping of vegetation for the cable trench will require confirmation of the absence of active nests of ground nesting birds ahead of ground disturbance.

6.1.10 Precautionary working methods will be undertaken to protect any reptiles present from injury where works are undertaken within field margins, hedgerows or scrub.

REFERENCES

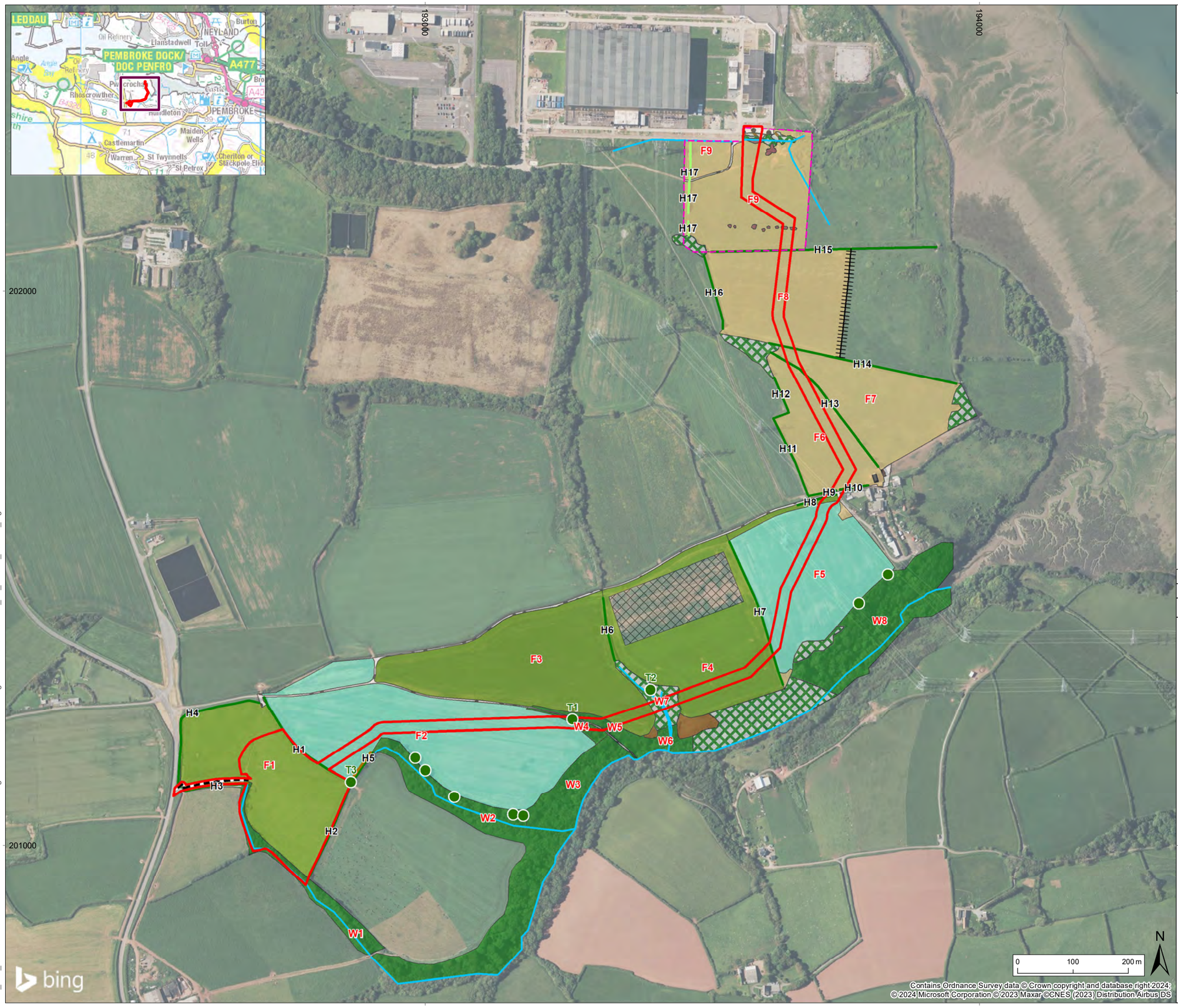
CIEEM (2017). Guidelines for Preliminary Ecological Assessment. 2nd Edition Chartered Institute of Ecology and Environmental Management, Winchester.

JNCC (2016). Handbook for Phase 1 Habitat survey: a technique for environmental audit (revised reprint). Joint Nature Conservation Committee, Peterborough.

NRW (2018). Review of the Current Conservation Status (CCS) of the Great Crested Newt in Wales, with specific references to its long term prospects and within its stronghold in North East Wales. Report No. 259.

DRAWINGS

Drawing 1	**Habitat Plan**
Drawing 2	**Badger Survey Plan (Confidential)**



Notes
1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

Legend

- Site boundary
- Not accessed during survey

Phase 1 Habitat Description (Code)

- Broad-Leaved Semi-Natural Woodland (A1.1.1)
- Dense/Continuous Scrub (A2.1)
- Improved Grassland (B4)
- Poor Semi-Improved Grassland (B6)
- Bramble
- Continuous Bracken (C1.1)
- Tall Ruderal (C3.1)
- Hardstanding
- Arable (J1.1)
- Species-Poor Intact Hedge (J2.1.2)
- Building (J3.6)
- Bare Ground (J4)
- Species-Poor Intact Hedge (J2.1.2)
- Species-Poor Defunct Hedge (J2.2.2)
- Dry Ditch (J2.6)
- Fence (J2.4)
- Unpaved Track (J4)
- Running Water (G2)
- Scattered Tree - Broadleaved (A3.1)

Rev	Description	By	CB	Date

MAKING COMPLEX EASY

Atholl Exchange, 1st Floor, 6 Canning Street, Edinburgh EH3 8EG
T: +44(0)131 555 5011 E: rpsed2@rpsgroup.com

Client: Pembroke Green Limited

Project: Goldborough Road

Title: Phase 1 Habitat Survey Plan

Status	Drawn By	PM/Checked By
Issue	LM	GK
Project Number	**Scale @ A3**	**Date Created**
ECO20016	1:6,500	FEB 2024
Figure Number		**Rev**
1		06

rpsgroup.com

W:_GIS_OtherOfficeWork\794-ENV-ECO20016 Goldborough Road EIA\Tech\Drawings\ECO20016-0001-02_P1_Habitat_Results_Fig1.mxd

APPENDICES

Appendix A

Relevant Legislation

A.1 REPTILES

All common UK reptile species (Adder Vipera berus, Grass Snake Natrix Helvetica, Common Lizard Zootoca vivipara and Slow Worm Anguis fragilis) are protected through part of Section 9(1 and 5) of the Wildlife & Countryside Act 1981 (as amended). This prohibits:

- Intentional or reckless injuring or killing;
- Selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
- Publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things.

Slow Worm, Common Lizard and Grass Snake are also listed as Species of Principal Importance within the Environment (Wales) Act 2016.

A.2 BIRDS

All birds, their nests and eggs are afforded protection under the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. It is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; and
- intentionally take or destroy the egg of any wild bird.

Schedule 1 birds cannot be intentionally or recklessly disturbed when nesting and there are increased penalties for doing so. Licences can be issued to visit the nests of such birds for conservation, scientific or photographic purposes but not to allow disturbance during a development even in circumstances where that development is fully authorised by consents such as a valid planning permission.

A number of widespread bird species are also listed as being of principal importance for the conservation of biodiversity in Wales.

A.3 BATS

All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. All British bats are also included on Schedule 2 of The Conservation of Habitats and Species Regulations 2017 as European Protected Species. It is an offence to:

- intentionally or recklessly kill, injure or capture bats;
- deliberately or recklessly disturb bats (whether in a roost or not); and
- damage, destroy or obstruct access to bat roosts

A roost is defined as 'any structure or place which [a bat] uses for shelter or protection'. As bats tend to reuse the same roosts, legal opinion is that a roost is protected whether or not bats are present at the time of survey.

A licence will therefore be required by those who carry out any operation that would otherwise result in offences being committed.

The following bat species are listed as Species of Principal Importance within the Environment (Wales) Act 2016: Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Common Pipistrelle, Brown Long-eared, Greater Horseshoe, and Lesser Horseshoe.

A.4 BADGER

Badgers are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from baiting and deliberate harm or injury. The act makes it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so;
- Intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access routes.

A sett is defined as "any structure or place that displays signs indicating current use by a badger".

A.5 DORMOUSE

Hazel Dormouse *Muscardinus avellanarius* is fully protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. The Regulations prohibit:

- Intentionally, recklessly or deliberately kill, injure or take a Dormouse;
- The deliberate disturbance of this species in such a way as to be significantly likely to affect:
  - Their ability of to survive, hibernate, migrate, breed, or rear or nurture their young; or;
  - The local distribution or abundance of Dormice.
- Damage or destruction of a breeding site or resting place (nest);
- The possession or transport of Dormice or any other part of.

Dormice are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:

- Intentional or reckless disturbance (at any level);
- Obstruction of access to any place of shelter, breeding or rest;
- Selling, bartering or exchange of these species, or parts of.

Offences can be deliberate, intentional or reckless and penalties for any of the above include fines of up to £5k and imprisonment of up to 6 months, per animal affected.

Dormice are also listed as Species of Principal Importance within the Environment (Wales) Act 2016.

A.6 WATER VOLE AND OTTER

Water vole and Otter and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to:

- Capture, kill or injure a Water Vole or Otter;
- Damage, destroy or obstruct access to a breeding site or resting place (i.e. burrow);
- Disturb a Water Vole or Otter whilst in a place of shelter;
- Possess or control a Water Vole or Otter (live or dead), any part of a Water Vole or Otter or anything derived from a Water Vole or Otter;
- Sell, barter or exchange a Water Vole or Otter (live or dead), any part of a Water Vole or Otter or anything derived from a Water Vole or Otter; and / or

- Advertise or offer for sale, barter or exchange a Water Vole or Otter (live or dead), any part of a water vole or Otter or anything derived from a Water Vole or Otter.

Offences can result from intentional or reckless actions. Penalties include fines of up to £5000 and / or imprisonment for up to six months, per offence. Under certain circumstances a licence can be granted by Natural England to permit activities that would otherwise constitute an offence.

Otters have additional protection, being listed as a European Protected Species (EPS) under Conservation of Habitats and Species Regulations 2017. This makes it an offence to deliberately or recklessly:

- Capture, injure or kill an Otter;
- Harass an Otter or group of Otters;
- Disturb an Otter in a holt or any other structure or place it uses for shelter or protection;
- Disturb an Otter while it is rearing or otherwise caring for its young;
- Obstruct access to a holt or other structure or place Otters use for shelter or protection or to otherwise deny the animal use of that place;
- Disturb an Otter in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species;
- Disturb an Otter in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.
- It is also an offence to:
- Damage or destroy a breeding site or resting place of such an animal (note that this does not need to be deliberate or reckless to constitute an offence);
- Keep, transport, sell or exchange or offer for sale or exchange any wild Otter or any part or derivative of one (if obtained after 10 June 1994).

Both species are listed as Species of Principal Importance within the Environment (Wales) Act 2016.

Appendix B

Designated Sites – Detailed Information

Table 3-1 Statutory Nature Conservation Designations within 10km of the Site

Designation	BESS Facility	Access Road	Cable Route	Description and Features of Interest
Statutory Designated Sites				
Pembrokeshire Bat Sites and Bosherton Lakes SAC (*Includes component SSSIs below*)	1.28km SE	1.43km SE	1.05km S	**Annex I habitats that are a primary reason for designation:** Hard oligo-mesotrophic waters with benthic vegetation of Chara spp./Calcium rich nutrient-poor lakes, lochs and pools. **Annex II species that are a primary reason for designation:** Greater horseshoe bat *Rhinolophus ferrumequinum.* **Annex II species present as a qualifying feature, but not a primary reason for designation:** Lesser Horseshoe Bat *Rhinolophus hipposideros.* **Annex II species present as a qualifying feature, but not a primary reason for designation:** Otter *Lutra lutra.*
• Orielton stable block and cellars SSSI	1.28km SE	1.43km SE	1.05km S	A significant nursery roost of lesser horseshoe bat.
• Stackpole SSSI and NNR	6.05km SE	6.26km SE	5.82km SE	An exceptionally biologically diverse site with a wide range of internationally and nationally important habitats and species including: sea cliffs, sandy bays, open and wooded dunes, grassland (calcareous, neutral, clifftop maritime), scrub (limestone / calcareous scrub, ericaceous maritime heath), a nationally important freshwater lake system, ancient and secondary woodland, rich lichen communities, numerous notable higher plants and aquatic plant assemblages, a rich invertebrate assemblage including rare and scarce species; at least ten bat species using surrounding woodland and lakeside habitats including greater and Lesser horseshoe bats, otter *Lutra lutra,* many birds including chough (1 pair breeding), locally important breeding colonies of seabirds a wide diversity of breeding birds, several vagrants / uncommon species and more than 30 species of winter waterfowl.

Designation	BESS Facility	Access Road	Cable Route	Description and Features of Interest
• Stackpole courtyard and flats and walled garden SSSI	6.85km SE	7.0km SE	6.57km SE	A small collection of buildings / structures with large nursery colonies of greater and lesser horseshoe bats, and common pipistrelle bats, as well as important transitory roosts. Other bat species roosting in the buildings are brown long-eared bat *Plecotus auritus*, natter's bat *Myotis nattereri*, Daubenton's bat, and whiskered bay *Myotis mystacinus*.
• Park House Outbuildings SSSI	7.19km SE	7.38km SE	6.89km SE	A complex of stone outbuildings with the largest known nursery colony of lesser horseshoe bats in west Wales. Greater horseshoe bat have also been recorded using the buildings. Other bat species using the buildings are common pipistrelle and brown long-eared bat.
Pembrokeshire Marine SAC (Includes component SSSIs below)	1.28km E	1.1km E	0.26km SE	• **Annex I habitats for which the site is designated:** Coastal lagoons; Atlantic salt meadows (*GlaucoPuccinellietalia maritimae*); Estuaries, Large shallow inlets and bays, Mudflats and sandflats not covered by seawater at low tide; Reefs; Sandbanks which are slightly covered by sea water all the time; Submerged or partially submerged sea caves. • **Annex II species for which the site is designated:** Shore Dock *Rumex rupestris.*
• Milford Haven Waterway SSSI	1.28km E	1.1km E	0.26km SE	The waterway has extensive rocky shores, with sandy beaches, mudflats, muddy creeks, muddy gravels, sheltered mud, moderately exposed sand, sheltered rock, species-rich rock pools, eelgrass *Zostera spp*. beds, overhang and under-boulder communities, species rich tide swept lower shore communities, bed of native oyster *Ostrea edulis*, saline lagoons, variety of saltmarsh communities and reedbed. Terrestrial habitats include ancient woodland with rich ground flora and many lichens, a rich assemblage of flowering plants, mosses and liverworts. The site supports significant numbers of over-wintering wildfowl and waders, otters and provide feeding habitat for nearby internationally and nationally important bat breeding sites. There are also nationally scarce saltmarsh invertebrates
• Freshwater East Cliffs to Shrinkle Haven (part)	9.67km E	9.86km E	9.06km E	A coastline of low cliffs with a range of habitats including undulating exposed cliffs with crevice communities, bird-cliff plant communities around inlets, clifftop maritime grassland, small streams and wetland communities, sand dune systems scrub and woodland. The site supports numerous notable higher plants (including rare and scarce species),a rich lichen assemblage on cliffs (including nationally rare species) notable invertebrates A high concentration of adders *Vipera berus*, slow worms *Anguis fragilis* and common lizards *Zootoca vivipera* at Old Castle Head, and a rich red algal assemblage and associated invertebrate communities.
• Angle Peninsula Coast SSSI (part)	4.96km W	4.85km W	5.16km W	A mix of high cliffs, with ridges, slabs of bedrock and pinnacles interspersed by small narrow boulder and cobble beaches with one sandy beach known. The stie has a range of intertidal habits including lower shore with *Gigartina pistillata* (a nationally scarce red seaweed), lower shore rocks dominated by algae, mid-shore boulders and bedrock, cliff caves, shaded rocky faces and overhangs, biologically rich rockpool communities and lichen communities on intertidal rocks. Cliff ledges and crevices have several plant species of interest while there is high quality maritime grassland with good invertebrate populations on the

Designation	BESS Facility	Access Road	Cable Route	Description and Features of Interest
				cliff tops and freshwater flushes along the coastal slopes and cliffs. There is a small breeding population of chough, feeding peregrine and foraging greater and lesser horseshoe bats (feeding).
• Castlemartin Range SSSI (part)	3.29km SW	3.24km SW	3.46km SW	An coastal plateau of limestone cliffs and a range of habits including: rocky shore communities of lichens seaweeds and molluscs; caves, gullies, overhangs and rockpools with a diverse range of species; exposed limestone sea-cliffs of European importance for their maritime vegetation; Exposed headlands with nationally scarce cliff plants; Species-rich maritime grassland and maritime heath; sand dunes; dune slacks; neutral grassland and old hay meadows. These habitats variously support many species of interest including breeding grey seals, otters, good lichen communities, higher plants and bryophytes (including uncommon, scarce and rare species), a rich invertebrate fauna with 27 nationally rare or scarce species, 15 - 20 pairs of chough, the largest concentration of breeding seabirds on the Pembrokeshire mainland, a good assemblage of breeding birds with some species at their only known location in Pembrokeshire, significant numberss of wintering waders, and large numbers of greater and lesser horseshoe bats.
Skomer, Skokholm and the Seas of Pembrokeshire SPA (overlaps with parts of West Wales Marine SAC and Pembrokeshire Marine SAC	6.17km S	6.26km S	6.4km S	**Qualifying features:** • **Breeding birds:** Storm petrel *Hydrobates pelagicus* (breeding), 3500 pairs, 4.1% of the GB population(1995 count); Chough (breeding), 4 pairs, 1.2% of the GB population(late 1990s count); Short-eared owl *Asio flammeus* (breeding), 6 pairs, 0.6% of the GB population, (1998 count). • **Regularly occurring migrant bird species:** Manx shearwater *Puffinus puffinus* (breeding), 150,968 pairs, 56.9% of the global breeding population (late 1990s count); Puffin (breeding), 9500 pairs, 1.1% of the global breeding population, (mid-1980s count); Lesser Black-backed gull (breeding), 20,300 pairs 16.4% of the breeding biogeographic region population, 4 year mean 1993-1997 • **Assemblage of at least 20,000 waterfowl or seabirds in any season:** In the breeding season the site regularly supports at least 394,260 individual seabirds including razorbill, guillemot, kittiwake, puffin, lesser black-backed gull, Manx shearwater and storm petrel.
West Wales Marine SAC (overlaps with some marine parts of Pembrokeshire Marine SAC)	4.73km W	4.72km W	5.03km W	**Annex II species for which the site is designated:** *Harbour porpoise Phocoena phocoena*
Castlemartin Coast SPA	2.65km W	2.53km W	2.84km W	**Qualifying features:** **Breeding birds:** between 12- 14 pairs of breeding chough (about 4% of the British population).

Designation	BESS Facility	Access Road	Cable Route	Description and Features of Interest
• Castlemartin Range SSSI (part)	3.29km SW	3.24km SW	3.46km SW	See description under **Pembrokeshire Marine SAC above**
• Broomhill Burrows SSSI (part)	2.58km W	2.46km W	2.77km W	A large dune system with a diverse range of habitats including: shingle ridges, sandy foreshore, strandline vegetation, grey dune and dune grassland, dune slacks and wet dune hollows, springs slacks and fen, and sea cliffs with gorse and heather scrub. Some of the grassland is extremely species rich and includes good assemblages of species associated with the different habitats as well as rare plants, notable lichens and notable insects including beetles bugs, bush-crickets and rare flies and moths
• Stackpole SSSI and NNR (part)	6.05km SE	6.26km SE	5.82km SE	See description under Pembrokeshire Marine SAC above
Limestone Coast of South Wales SAC	2.58km W	2.46km W	2.77km W	• **Annex I habitats that are a primary reason for designation:** Fixed dunes with herbaceous vegetation (grey dune); caves not open to the public; European dry heaths; Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*); Submerged or partially submerged sea caves; vegetated sea cliffs of the Atlantic and Baltic coasts. • **Annex II species that are a primary reason for designation:** Greater horseshoe bat *Rhinolophus ferrumequinum;* Early gentian *Gentianella anglica;* Petalwort *Petalophyllum ralfsii*
• Broomhill Burrows SSSI (part)	2.58km W	2.46km W	2.77km W	See description under Castlemartin Coast SPA
• Stackpole SSSI	6.05km SE	6.26km SE	5.82km SE	See description under Pembrokeshire Marine SAC above
• Stackpole Quay to Trewent SSSI	8.23km SE	8.38km SE	7.85km SE	See description under Pembrokeshire Marine SAC above
• Castlemartin Range SSSI (part)	3.29km SW	3.24km SW	3.46km SW	See description under Pembrokeshire Marine SAC above
Other National Designated Sites				
• Castlemartin Corse SSSI	2.61km SW	2.53km SW	2.81km SW	Calcareous fen with a large and diverse reedbed, calcareous flushes and grazed fen-meadow, supporting rare plant communities and numerous scarce fen plants, some at their only known location in Pembrokeshire. This site also has a notable assemblage of invertebrates.

Designation	BESS Facility	Access Road	Cable Route	Description and Features of Interest
• Gweunydd Somerton Meadows SSSI	460m SE	660m SE	570m SE	Sixteen fields of unimproved mesotrophic grassland, neutral semi-improved grassland, marshy grassland swamp and standing water, woodland, scrub and hedges. Grasslands vary from moderately to very herb-rich. Several locally uncommon plants are present. The grassland supports a diverse range of fungi. The site also supports small breeding populations of marsh fritillary butterfly *Euphydryas aurinia* and the Shrill Carder Bee *Bombus sylvarum* as well as supporting a rich dragonfly fauna.

Abbreviations used in Table 3.1: **SAC** - Special Area of Conservation. **SPA** – Specially Protected Area. **SSSI** – Site of Special Scientific Interest. **NNR** - National Nature Reserve. **SINC:** Site of Importance for Nature Conservation.

Designation	Description and Features of Interest
Pembrokeshire Bat Sites and Bosherton Lakes SAC (*Includes component SSSIs below*)	**Annex I habitats that are a primary reason for designation:** Hard oligo-mesotrophic waters with benthic vegetation of Chara spp./Calcium rich nutrient-poor lakes, lochs and pools. **Annex II species that are a primary reason for designation:** Greater horseshoe bat *Rhinolophus ferrumequinum.* **Annex II species present as a qualifying feature, but not a primary reason for designation:** Lesser Horseshoe Bat *Rhinolophus hipposideros.* **Annex II species present as a qualifying feature, but not a primary reason for designation:** Otter *Lutra lutra.*
• Orielton stable block and cellars SSSI	A significant nursery roost of lesser horseshoe bat.
• Stackpole SSSI and NNR	An exceptionally biologically diverse site incorporating a wide range of internationally and nationally important habitats and species including: • Sandy sea cliffs, limestone sea cliffs, sheltered sandy bays open and wooded dune systems, grassland (calcareous, neutral, clifftop maritime). • Scrub (limestone / calcareous scrub, ericaceous maritime heath). • Nationally important freshwater lake system, Bosherston Lake, with charophytes and associated marl formations. • Ancient and secondary woodland of ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*, calcareous scrub, grey willow *Salix cinerea* / alder *Alnus glutinosa* • Rich lichen communities, some internationally important, on cliffs, scrub, woodland and dunes. Species include the rare *Fulgensia fulgens* and at least 16 old forest indicators. Notable epiphytic species include – *Lobaria pulmonaria*, *Sticta limbata* and S*. sylvatica*. And the uncommon beard lichen *Usnea articulata* • Numerous higher plant of interest including pyramidal orchid Anacamptis pyramidalis, Portland spurge Euphorbia portlandica, yellow hornedpoppy *Glaucium flavum* small-flowered buttercup *Ranunculus parviflorus*, dwarf spurge *Euphorbia exigua* and a small population of small cudweed *Filago minima* yellow-wort Blackstonia perfoliata, autumn gentian *Gentianella amarella*, field gentian *G. campestris* and autumn lady's-tresses *Spiranthes spiralis* small restharrow *Ononis reclinata* and compact brome *Bromus madritensis* (both Red Data Book species) and the endemic rock sea-lavender *Limonium parvum*.

Designation	Description and Features of Interest
	• Notable aquatic plant assemblages including curled pondweed *Potamogeton crispus*, fennel pondweed *P. pectinatus*, and stonewort *Chara hispid.* • Invertebrates including Terrestrial molluscs: *Cernuella virgata, Cochlicella acuta* and *Helicella itala*, and *Theba pisana* the local *Pomatias elegans* and *Ashfordia granulata*. • A small population of the rare purse-web spider *Atypus affinis* has been recorded on the cliffs. • The dune and open clitter habitats have good populations of invertebrates including the rare *Aporus unicolor,* the rare cuckooflower bee *Coelioxys mandibularis,* the nationally rare heteropteran *Pionosomus varius,* and glow worm *Lampyris noctiluca*. Notable orthoptera include large populations of the great green bush-cricket *Tettigonia viridissima*, and a population of the scarce ground hopper *Tetrix subulata*. • Eighteen species of odonata have been recorded, including breeding populations of *Anax imperator*, *Brachytron pratense* and *Aeshna mixta*. Two nationally rare flies – *Dolichopus signifer* and *Colobaea distincta* also occur. Bosherston Lake has a rich and diverse benthic invertebrate fauna, and the hemiptera include the southern species *Ranatra linearis*, *Micronecta scholtzi*, *Cymatia coleoptrata* and the rare *Corixa affinis*. Twelve species of gastropod have been recorded including the swan mussel *Anodonta cygnaea*. Among 30 species of trichoptera is the locally rare *Ecnomus tenellus*. • At least ten bat species use surrounding woodland and lakeside habitats including Greater and Lesser horseshoe bats. Noctule bats *Nyctalus noctula* have also bred on Stackpole Warren. At least 40-50 Daubenton's bat *Myotis daubentonii* have a nursery roost at the site. • Resident otter *Lutra lutra.* • Up to 15 chough *Pyrrhocorax pyrrhocorax* have been recorded feeding on the cliff-top grassland and dunes. A single pair breed successfully. Locally important breeding colonies of seabirds include: kittiwake *Risa tridactyla*; guillemot *Uria aalge*; razorbill *Alca torda*; puffin *Fratercula arctica*, and fulmar *Fulmaris glacialis*. Colonies of cliff-nesting house martin *Delichon urbicum* and swift *Apus apus*. The scrub, woodland and marsh habitats support a wide diversity of breeding species, including raptors, several hole-nesting birds and numerous warblers. • The lakes are very attractive to passage migrants, including a number of vagrants/ uncommon species and winter waterfowl. More than 30 species of waterfowl, including ducks, grebes and rails, have been recorded and the lakes attract notably large numbers of some species especially pochard *Aythia ferina* and coot *Fulica atra*. Noteworthy passerine species that over-winter in the sheltered lakeside and Lodge Park woodland include chiffchaff *Phylloscopus collybita*, blackcap *Sylvia atricapilla* and firecrest *Regulus ignicapilla*.
• Stackpole courtyard and flats and walled garden SSSI	A small collection of buildings / structures with large nursery colonies of greater and lesser horseshoe bats, and common pipistrelle bats, as well as important transitory roosts. Other bat species roosting in the buildings are brown long-eared bat *Plecotus auritus*, natter's bat *Myotis nattereri*, Daubenton's bat, and whiskered bay *Myotis mystacinus*.
• Park House Outbuildings SSSI	A complex of stone outbuildings with the largest known nursery colony of lesser horseshoe bats in west Wales. Greater horseshoe bat have also been recorded using the buildings. Other bat species using the buildings are common pipistrelle and brown long-eared bat.

Designation	Description and Features of Interest
Pembrokeshire Marine SAC (*Includes component SSSIs below*)	**Annex I habitats for which the site is designated:** Coastal lagoons; Atlantic salt meadows (GlaucoPuccinellietalia maritimae); Estuaries, Large shallow inlets and bays, Mudflats and sandflats not covered by seawater at low tide; Reefs; Sandbanks which are slightly covered by sea water all the time; Submerged or partially submerged sea caves. **Annex II species for which the site is designated:** Shore Dock *Rumex rupestris*
• Milford Haven Waterway SSSI	The waterway has extensive rocky shores, with sandy beaches mudflats and muddy creeks. The foreshore supports good examples of intertidal marine habitats including muddy gravels, sheltered mud, moderately exposed sand, and sheltered rock. These support a diverse range of intertidal communities, with species-rich rock pools, eelgrass *Zostera spp*. beds, and overhang and under-boulder communities. Key features are: • Species rich tide swept lower shore communities with species such as breadcrumb sponge *Halichondria panicea*, gooseberry seasquirt *Dendrodoa glossularia* and star seasquirt *Botryllus schlosseri.* • Beds of native oyster *Ostrea edulis*, mixed sediment supporting segmented worms; and three saline lagoons (a rare habitat in the UK) with characteristic species rarely found in other habitats including the nationally scarce tentacled lagoon worm *Alkmaria romijni* and the crustacean *Gammarus chevreuxi*, and lagoon cockle *Cerastoderma glaucum*. • A variety of saltmarsh communities with lower mid and upper saltmarsh. There are also areas of reedbed. Species found within the saltmarsh include the nationally scarce lax-flowered sea- lavender *Limonium humile* and the one-flowered glasswort *Salicornia pusilla*. • Ancient woodland, dominated by sessile oak *Quercus petraea*, fringes parts of the main channel. Wild service-tree *Sorbus torminalis* is frequent on the lower slopes and the ground flora is rich with ancient woodland indicators. The woodland supports many lichens including the nationally rare *Arthonia astoidestra*. • A rich assemblage of flowering plants including large populations of nationally declining species dwarf eelgrass *Zostera noltei*, marsh pea Lathyrus palustris, spurge-laurel *Daphne laureola* and wayfaring tree *Viburnum lantana*. Other nationally rare or scarce flowering plants include rock sea-lavender *Limonium procerum* spp. cambrense, musk stork's-bill *Erodium moschatum*, marsh mallow *Althaea officinalis* and chamomile *Chamaemelum nobile*. • A rich assemblage of mosses and liverworts in coastal slope with the nationally rare moss *Tortula cuneifolia*, nationally scarce mosses *Bryum torquescens* and *Weissia perssonii* and the liverwort *Cololejeunea minutissima*. • The saltmarsh and mudflats support significant numbers of over-wintering wildfowl and waders on saltmarsh and mudflats particularly in hard winters. Species include little grebe Tachybaptus ruficollis, shelduck *Tadorna tadorna*, wigeon *Anas penelope*, teal *Anas crecca*, dunlin *Calidris alpina* and curlew *Numenius arquata*. • The Haven is an important site in southern Britain for the otter. • Within the vicinity of the Haven are important bat breeding sites, supporting internationally important populations of greater horseshoe bats, as well as nationally important numbers of lesser horseshoe bats.

Designation	Description and Features of Interest
	• Saltmarsh with nationally scarce invertebrates including comb footed spider *Enoplognatha mordex*, the ground and short winged mould beetles *Bembidion laterale* and *Brachygluta simplex*, the weevils *Polydrusus pulchellus* and *Notaris bimaculatus*, the hoverfly *Platycheirus immarginatus* and the cranefly *Limonia (Dicranomyia) complicata*. • Blackthorn Prunus spinosa scrub supports nationally important populations of brown hairstreak butterfly *Thecla Betula*.
• Freshwater East Cliffs to Shrinkle Haven (part)	A mainly south-facing coastline of low cliffs with steep vegetated slopes and deep fissures, interspersed by sheltered bays with sandy beaches and rocky platforms, including a raised beach at Manorbier. The range of habitats supports numerous notable higher plants, including one Red Data Book species, a rich lichen assemblage containing one Red Data Book species, and a selection of notable invertebrates which include two Red Data Book species. Key Features are: • Undulating exposed cliffs with crevice communities dominated by rock samphire *Crithmum maritimum* and rock sea-spurrey *Spergularia rupicola*, with sea plantain *Plantago maritima*, sea aster *Aster tripolium*, golden samphire *Inula crithmoides* Sea spleenwort *Asplenium marinum* and sea-purslane *Atriplex portulacoides*. • Bird-cliff plant communities around inlets with abundant spear-leaved orache *Atriplex prostrata* and sea beet *Beta vulgaris* subsp. maritima. • Clifftop maritime grassland with dominant Red fescue *Festuca rubra* abundant thrift *Armeria maritima*, and scattered sea campion *Silene uniflora*, sea mayweed *Tripleurospermum maritimum*, sea plantain *Plantago maritima* and buck's-horn plantain *P. coronopus* .This grades into a mosaic with therophyte communities, including species such as early hair-grass *Aira praecox*, tormentil *Potentilla erecta*, kidney vetch *Anthyllis vulneraria*, wild thyme *Thymus polytrichus*, spring squill Scilla verna and occasional heather *Calluna vulgaris*. Beyond this zone is heath with bell heather *Erica cinerea* western gorse *Ulex gallii*, gorse *U europaeus* blackthorn and wild privet Ligustrum vulgare. • Occasional small streams cut through the slopes, supporting small wetland communities, including water mint *Mentha aquatica*, hemp-agrimony *Eupatorium cannabinum* and common reed *Phragmites australis*. • Small sand dune systems are dominated by red fescue, with common restharrow *Ononis repens*, lady's bedstraw *Galium verum*, and marram *Ammophila arenaria*, sand couch *Elytrigia juncea*, sand sedge *Carex arenaria* and sea rocket *Cakile maritima*. • Scrub and woodland fringe the dune grassland at Manorbier and support epiphytic lichens, including *Parmelia pastillifera*, *Ramalina fraxinea*, *Normandina pulchella*, *Enterographa crassa* and *Pertusaria pertusa*. • The cliffs at Manorbier have a rich lichen assemblage on the Old Red Sandstone boulders and outcrops at the Priest's Nose, including *Buellia subdisciformis*, *Parmelia perlata* and Ramalina siliquosa. and the The nationally rare golden haired lichen Teloschistes flavicans • Rare and scarce higher plants are found throughout including the Red Data Book species, yarrow broomrape *Orobanche purpurea*, at it's only known Welsh site; nationally scarce Portland spurge *Euphorbia portlandica*, variegated horsetail *Equisetum variegatum* ivy broomrape *O. hederae* tree-mallow *Lavatera arborea* rock sea lavender *Limonium binervosum* agg. sea stork's-bill *Erodium maritimum*, Lesser water-parsnip *Berula erecta* juniper *Juniperus communis* (one of only 7 junipers known to remain in Pembrokeshire).

Designation	Description and Features of Interest
	• Birds of interest including feeding Chough a traditional peregrine Falco peregrinus eyrie o breeding fulmar and raven, whitethroat Sylvia communis, lesser whitethroat Sylvia curruca and stonechat Saxicola torquate. • There is a high concentration of adders *Vipera berus*, slow worms *Anguis fragilis* and common lizards *Zootoca vivipera* at Old Castle Head. • Many noteworthy invertebrates are present including a rich dipteran fauna with the Red Data Book species *Dolichopus signifer* and *Limonia goritensis*, and notables such as *Campsicnemus pusillus* and *Gonomyia conoviensis*, as well as the beetles *Aepus robini* and *Otiorhynchus desertus, t*he notable weevil *Sibinia sodalist,* the grayling butterfly *Hipparchia semele*, and a large population of the burrowing oil beetle *Meloe proscarabaeus*. • The foreshore habitats and communities have a rich red algal assemblages and associated invertebrate communities, including the large acorn barnacle *Balanus perforatus*; and a forest of the kelp species *Laminaria digitata* in the sub-littoral fringe at Skrinkle.
• Angle Peninsula Coast SSSI (part)	A mix of high cliffs, with ridges, slabs of bedrock and pinnacles interspersed by small narrow boulder and cobble beaches with one sandy beach known. Key features are: • Lower shore characterised by oar weed *Laminaria digitata* and dabberlocks *Alaria esculenta*, overlying encrusting coralline and filamentous red seaweeds, including *Gigartina pistillata*, a nationally scarce red seaweed. • Lower shore rocks dominated by serrated wrack *Fucus serratus*, turf-forming red algae such as pepper dulse *Osmundea pinnatifida* and *Mastocarpus stellatus* and thongweed *Himanthalia elongata*. • Areas of bedrock and boulders at the mid-shore level are dominated by an encrustation of barnacles *Chthalamus stellatus*, *C. montagui*, *Semibalanus balanoides*, and limpets with a canopy of bladder wrack *F. vesiculosus* var. linearis occurring in places. • Pygmy lichen *Lichina pygmaea* and black tar lichen *Verrucaria maura*, interspersed with patches of laver bread *Porphyra* sp. on rock at the upper limit of encrustation, and a splash zone with yellow and grey lichens. • The cliffs contain caves, shaded rocky faces and overhangs with communities of special interest including species such as breadcrumb sponge, lace sponge *Clathrina coriacea*, star sea squirt *Botryllus schlosseri*, piddock *Hiatella arctica*, the sea mat Electra pilosa, the mollusc European cowrie *Trivia monacha*, and red seaweeds including *Plumaria elegans*, *Lomentaria articulata* and *Membranoptera alata*. • Biologically rich rockpool communities mainly dominated by coralline algae *Corallina officinalis*, along with species such as the brown alga sea oak *Halidrys siliquosa*, carragheen moss *Chondrus crispus*, dulse *Palmaria palmata*, snakelocks anemone *Anemonia viridis* and purple top shell *Gibbula umbilicalis*. • Species-rich deep wrack and kelp-dominated pools occur in areas on the lower shore. These host species such as sea oak, dulse, cushion star *Asterina gibbosa* and *A. phylactica*, breadcrumb sponge, common prawn *Palaemon serratus*, and grey top shell *G. cineraria*. • Higher up the cliff, ledges and crevices support several species of interest such as golden samphire, rock sea lavender. procerum, sea aster and both Portland and woodland spurge.

Designation	Description and Features of Interest
	• Further inland the coastal slopes support maritime grassland dominated by red fescue and cocks-foot Dactylis glomerata; and species such as greenwinged orchid *Orchis morio*, thrift, buck's-horn plantain, birds-foot trefoil *Lotus corniculatus*, and sea campion. There area also areas of scrub with Western gorse, European gorse, blackthorn heather, and spring squill. • Freshwater flushes along the coastal slopes and cliffs support additional species such as distant sedge *Carex distans* and blunt-flowered rush *Juncus subnodulosus*. • A small breeding population of chough, and feeding peregrine • The short, grazed maritime grassland turf supports invertebrate communities. Invertebrates of particular interest include the weevils *Trachyphloeus rectus* and *Trichosirocalus dawsoni*. • Feeding and over wintering greater and lesser horseshoe bats.
• Castlemartin Range SSSI (part)	An extensive coastal plateau with 14km of limestone cliffs and a range of habits including intertidal, caves, gullies overhangs and pools in the limestone cliffs, crevices and cliff plant communities, strand line, species rich maritime grassland, species rich neutral grassland, sand dunes, fen, base-rich flush. Key Features are: • Clearly zoned shore communities • Grey seals breed in the open bays, gullies and sea caves and otters are present along the coastline. • Upper rocky shores with maritime lichens that form prominent grey, orange and black bands. Below these lichens, dense barnacle and limpet communities below which is a narrow band of shore coral weed *Corallina officinalis* and a variety of other red seaweeds. The lower shore fringe is dominated by dabberlocks and kelp with a mixed under-storey of various coralline and red algal species. The nationally scarce seaweed is also present .. • Caves, gullies, overhangs and pools, provide numerous specialist foreshore habitats that support a diverse range of species. • The damp, shaded caves and gullies are of particular note for their habitat specialists and the presence of more typically subtidal species. • Wave-cut platforms with rock pools rich in coralline algae, serrated wrack Fucus serratus and kelp, or else floored with sediments and sand-tolerant algae. • Surge gullies dominated by a variety of abundant filter feeding species and with rock boring species such as piddocks and sponges. • The exposed limestone sea-cliffs are of European importance for their maritime vegetation. With species including the nationally rare goldilocks aster *Aster linosyris* and small restharrow. • Cliff-top downs with Limited agricultural use of the range since World War II has ensured that the wide and continuous zones of sea-cliff vegetation that reflect different levels of exposure and salt deposition have been conserved. • Exposed headlands almost bare of vegetation with only thrift, rock samphire *Crithmum maritimum*, sea aster, and the nationally scarce species golden-samphire and rock sea-lavender. Other nationally scarce cliff plants include the hoary rock-rose *Helianthemum canum*, curved hard-grass *Parapholis incurva*, Portland spurge and pale dog-violet *Viola lacteal and* Chaffweed Anagallis minima..

Designation	Description and Features of Interest
	• Good lichen communities including the nationally rare scrambledegg lichen *Fulgensia fulgens* on open stony areas in the dunes; and *Collema fragile* and *Leptogium diffractum* on the cliff tops, which also support the largest Welsh populations of entire threadwort *Cephaloziella calyculata*, a nationally rare liverwort. • Species-rich maritime grassland fronting a zone of maritime heath, which grades into gorse scrub in the most sheltered sections. Spring squill is abundant in the grassland and heath and there are large populations of green-winged orchid field gentian *Gentianella campestris* and autumn gentian. • Sand dune systems at Linney and Brownslade with dune meadows supporting uncommon plants such as autumn lady's-tresses, and large populations of autumn gentian, two small ferns, adder's-tongue *Ophioglossum vulgatum* and moonwort *Botrychium lunaria* at its only known Pembrokeshire. In the wetter parts, there is a large population of marsh helleborine *Epipactis palustris* and several different species of marsh orchid. • In places, the dune slacks, which hold large populations of the nationally scarce liverwort petalwort *Petalophyllum ralfsi*i, grade into rich fen vegetationwith an abundance of blunt-flowered rush, lesser pond-sedge *Carex acutiformis* and bulrush *Typha latifolia* as well as the nationally scarce variegated horsetail and the nationally rare fen pondweed *Potamogeton coloratus*. The base rich flush systems on both Brownslade and Linney Burrows are also of considerable interest. • The dune systems support a rich invertebrate fauna and good populations of the nationally rare shield bug *Odontoscelis fuliginosa* and seed bug *Pionosomus varius*. The strand line at Frainslake beach has Pembrokeshire's only known colony of the scarce strand-line beetle *Eurynebria complanata*. • The largest areas of neutral grassland in Wales with communities forming complex mosaics. Typical species are such as bird's-foot trefoil, black knapweed *Centaurea nigra*, rough hawkbit *Leontodon hispidus* and yellow rattle *Rhinanthus minor* and a many plants typical of old hay meadows. • Populations of over seven hundred species of invertebrates, 27 of which are nationally rare or scarce. Species include the shrill carder bee *Bombus sylvarum*, and *Andrena hattorfiana (both* the nationally rare), the scarce long-horned bee *Eucera longicornis* and brown-banded carder bee *Bombus humilis,* breeding colonies of the vulnerable silver-studded blue butterfly *Plebejus argus*, the largest population of marsh fritillary butterfly *Euphydryas aurinia* in Pembrokeshire, large numbers of dark green fritillary *Argynnis aglaja*, small pearl-bordered fritillary *Boloria selene*, brown argus *Aricia agestis*, grayling *Hipparchia Semele*, and the great green bush-cricket *Tettigonia viridissima*. • The varied habitats within the Range also provide ideal conditions for populations of reptiles and amphibians. • A population of about 15 - 20 pairs of chough at one of its main breeding locations in west Wales. The coastal cliffs support the largest concentration of breeding seabirds on the Pembrokeshire mainland, with about 12,000 – 16,000 guillemots and 800 – 1,100 razorbills, mainly nesting at Stack Rocks, a small breeding population of kittiwakes and a few puffins. Other breeding seabirds include fulmar, lesser black-backed gull *Larus fuscus*, herring gull *L. argentatus* and shag *Phalacrocorax aristotelis*. • Raven, peregrine, kestrel *Falco tinnunculus*, swift, house martin and rock pipit *Anthus petrosus* also nest on the cliffs. Buzzards *Buteo buteo* nest in wooded areas. Stonechat, wheatear *Oenanthe oenanthe*, meadow pipit *Anthus pratensis*, whitethroat *Sylvia communis* and skylark *Alauda arvensis* nest in the cliff-top grassland and heath. Ringed plovers breed at currently their only known breeding location in Pembrokeshire. Other nesting species include Dartford warblers *S. undata* and barn owl *Tyto alba*,

Designation	Description and Features of Interest
	• Outside the breeding season, significant numbers of waders and gulls roost and feed in the sandy bays including up to several hundred lesser black-backed gulls, and smaller flocks of oystercatcher *Haematopus ostralegus*, curlew *Numenius arquata*, dunlin *Calidris alpina* and grey plover *Pluvialis squatarola*. Migratory flocks of whimbrel *N. phaeopus* and other wader species regularly occur and, in winter, large numbers of lapwing *Vanellus vanellus* and golden plover *P. apricaria* feed and roost here. • Large numbers of greater and lesser horseshoe bat have important winter roosts in caves along the coast. Both species are known to regularly feed over the Range and also to roost in some of the military bunkers and other buildings.
Skomer, Skokholm and the Seas of Pembrokeshire SPA (overlaps with parts of West Wales Marine SAC and Pembrokeshire Marine SAC	**Qualifying features:** **Breeding birds:** Storm petrel *Hydrobates pelagicus* (breeding), 3500 pairs, 4.1% of the GB population(1995 count); Chough (breeding), 4 pairs, 1.2% of the GB population(late 1990s count); Short-eared owl *Asio flammeus* (breeding), 6 pairs, 0.6% of the GB population, (1998 count). **Regularly occurring migrant bird species:** Manx shearwater *Puffinus puffinus* (breeding), 150,968 pairs, 56.9% of the global breeding population (late 1990s count); Puffin (breeding), 9500 pairs, 1.1% of the global breeding population, (mid-1980s count); Lesser Black-backed gull (breeding), 20,300 pairs 16.4% of the breeding biogeographic region population, 4 year mean 1993-1997 **Assemblage of at least 20,000 waterfowl or seabirds in any season:** In the breeding season the site regularly supports at least 394,260 individual seabirds including razorbill, guillemot, kittiwake, puffin, lesser black-backed gull, Manx shearwater and storm petrel.
West Wales Marine SAC (overlaps with some marine parts of Pembrokeshire Marine SAC)	**Annex II species for which the site is designated:** *Harbour porpoise Phocoena phocoena*
Castlemartin Coast SPA	**Qualifying features:** **Breeding birds:** between 12- 14 pairs of breeding chough (about 4% of the British population).
• Castlemartin Range SSSI (part)	See description under **Pembrokeshire Marine SAC above**
• Broomhill Burrows SSSI (part)	A large dune system with a diverse range of habitats including: shingle ridges, sandy foreshore, strandline vegetation, grey dune and dune grassland, dune slacks and wet dune hollows, springs slacks and fen, and sea cliffs with gorse and heather scrub.

Designation	Description and Features of Interest
	Some of the grassland is extremely species rich and includes good assemblages of species associated with the different habitats as well as the following rare plants: Hutchinsia Hornungia petraea, dune fescue *Vulpia membranacea*, sea stork's-bill Erodium maritimum and sea spurge *Euphorbia paralias* from the drier dune areas. Dune slacks have variegated horsetail *Equisetum variegatum*, whilst the strandline supports Ray's knotgrass *Polygonum oxyspermum* ssp raii and sea radish Raphanus maritimus. Where the dune gives way to Old Red Sandstone cliffs, rock sea-lavender *Limonium binervosum*, golden samphire *Inula crinthoides* and Portland spurge *Euphorbia portlandica* and the only known clump of dwarf thistle *Cirsium acaule* in west Wales. Notable lichens include Parmelia crinite and Teloschistes flavicans. Notable insects are: the rove beetle, Staphylinus caesareus, and the tortoise beetles, *Cassida vibex* and *C. murraea,* the bugs, *Nabis pseudoferus* and *Pinosomus varius;* two rare fly species, *Schoenophilus versutus* and *Aphrosylus ferox;* two rare moths, the scarlet tiger *Callimorpha dominula* and the white colon *Sideridis albicolon;* and the great green bush-cricket *Tettigonia viridissima*.
• Stackpole SSSI and NNR (part)	See description under Pembrokeshire Marine SAC above
Limestone Coast of South Wales SAC	**Annex I habitats that are a primary reason for designation:** Fixed dunes with herbaceous vegetation (grey dune); caves not open to the public; European dry heaths; Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*);Submerged or partially submerged sea caves; vegetated sea cliffs of the Atlantic and Baltic coasts. **Annex II species that are a primary reason for designation:** Greater horseshoe bat *Rhinolophus ferrumequinum;* Early gentian *Gentianella anglica;* Petalwort *Petalophyllum ralfsii*
• Broomhill Burrows SSSI (part)	See description under Castlemartin Coast SPA
• Stackpole SSSI	See description under Pembrokeshire Marine SAC above
• Stackpole Quay to Trewent SSSI	See description under Pembrokeshire Marine SAC above
• Castlemartin Range SSSI (part)	See description under Pembrokeshire Marine SAC above
• Castlemartin Corse SSSI	The best example of a calcareous fen in the old county of Pembrokeshire. The 20 hectare (50 acre) reed-bed is the largest and most diverse in Pembroke. Calcareous flushes support rare plant communities and there are numerous scarce fen plants.

Designation	Description and Features of Interest
	Seepages in sand dunes support species-rich *Schoeno-Juncetum subnodulosis* flushes at one of their few South Wales stations. Six different fen and fen-meadow plant communities are present. Tall-fen of common reed is the most extensive community. Its associates include meadowsweet *Filipendula ulmaria*, reed canary-grass *Phalaris arundinacea*, hedge bindweed *Calystegia sepium* and the rare tufted-sedge *Carex elata*. The wettest parts also support greater tussock-sedge *Carex paniculata*, wild angelica *Angelica sylvestris*, water dock *Rumex hydrolapathum* yellow loosestrife *Lysimachia vulgaris* and stands of greater pond-sedge *Carex riparia*. Scattered grey willow Salix is controlled with winter burning. The grazed fen-meadow is very diverse with eight different rushes, including abundant blunt-flowered rush. Other abundant plant species include purple-loosestrife Lythrum salicaria, common fleabane Pulicaria dysenterica, hemp agrimony Eupatorium cannabinum, marsh horsetail *Equisetum palustre*, greater bird's-foot-trefoil *Lotus pedunculatus* common reed and meadowsweet. Fen pondweed *Potamogeton coloratus*, (nationally scarce), grows in two shallow ditches in the fen-meadows (its only known locality in Pembroke), as is the case with slender sedge *Carex lasiocarpa*. Long-stalked yellow-sedge *Carex lepidocarpa* (rare) occurs here along with other notable species including Marsh helleborine *Epipactis palustris*, lesser water-parsnip and northern yellow-cress *Rorippa islandica*. Interesting invertebrates include the short-winged conehead cricket *Conocephalus dorsalis* and the slender ground-hopper *Tetrix subulata* in the fen-meadow. The great green bush cricket is abundant throughout the tall-fen.
• Gweunydd Somerton Meadows SSSI	Sixteen fields within a traditionally managed farm. Habitats include unimproved mesotrophic grassland, neutral semi-improved grassland, a marshy grassland swamp and standing water, woodland, scrub and thick hedges. Grasslands vary from moderately to very herb-rich. Locally uncommon plants include: downy oat-grass Avenula pubescens, quaking grass Briza media, smooth-stalked sedge Carex laevigata, hay scented buckler fern *Dryopteris aemula*, royal fern *Osmunda regalis*, Grey club rush *Schoenoplectus tabernaemontani*, saw-wort *Serratula tinctoria*, yellow oat grass *Trisetum flavescens* and the stonewort *Chara virgata*. The grassland supports a diverse range of fungi including *Hygrophoraceae*, coral fungi *Clavariaceae*, pink-gills *Entolomataceae*, earth tongues *Geoglossaceae* as well as several species from the genus *Dermoloma*. There are also two recently-described grassland fungi species (*Entoloma ochreoprunuloides* f. *hyacinthinum* and *Gliophorus europerplexus*). The site supports small breeding populations of two highly localised and declining invertebrates: marsh fritillary butterfly *Euphydryas aurinia* and the Shrill Carder Bee *Bombus sylvarum* as well as supporting a rich dragonfly fauna.