

The City and County of Swansea
**Mumbles Coastal Protection
Scheme**
Extended Phase 1 Habitat Survey

Issue | 23 July 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 252724

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ARUP

Contents

	Page
1 Introduction	1
1.1 Project Background	1
1.2 Objectives	1
1.3 Legislative Context	1
2 Methodology	3
2.1 Desk Study	3
2.2 Field Survey	3
2.3 Limitations	4
3 Results and Conclusion	5
3.1 Statutory Designated Sites	5
3.2 Non- statutory Designated Sites	7
3.3 Habitats	9
3.4 Other notable species	12
4 Conclusion	13
4.1 Site Summary	13
4.2 Recommendations	13

Figures

Figure 1. Phase 1 Habitat Survey.

Figure 2. Designated sites within 2 and 5km of the site boundary.

Appendices

Appendix A

Legislation

Appendix B

Target Notes

Appendix C

Photographs

1 Introduction

1.1 Project Background

Ove Arup & Partners Ltd. (Arup) have been commissioned by The City and County of Swansea to carry out an Extended Phase 1 Habitat survey of a coastal area to the south of the Mumbles promenade. The commissioned survey is in relation to proposed works along the Mumbles Promenade regarding coastal sea defence reparations. The information within this report can be used to support any marine licence or planning application, and with respect to any impact on designated sites.

A larger area of the Mumbles area was surveyed in 2017¹ and then updated in 2019². This report provides an extension to these two surveys, extending the survey extent to the south of the Mumbles Promenade, including Verdi's Café and the intertidal area (Figure 1, Target Note 9).

1.2 Objectives

The objectives of this report are to outline the habitats and species recorded on site, which form a material consideration within the design of the project and to support any licence, consent or planning application.

1.3 Legislative Context

A framework of international/European, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. The following legislation exists to protect habitats and species of nature conservation importance:

- i. The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitat Regulations) which transposes Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) and the Birds Directive (Council Directive 2009/147/EC on the conservation of wild birds) (the Wild Birds Directive) into UK law;
- ii. The Wildlife and Countryside Act 1981 (as amended) (WCA);
- iii. The Environment (Wales) Act 2016;
- iv. The Countryside and Rights of Way Act 2000;
- v. The Hedgerow Regulations 1997; and
- vi. The Protection of Badgers Act 1992.

These pieces of legislation include a number of offences relating to protected species and requirements for licences to allow construction works to proceed. In

¹ Arup, 2017. Preliminary Ecological Appraisal Report.

² BSG Ecology, 2019. Mumbles Promenade Ground Investigations - Extended Phase 1 Habitat Survey. April, 2019.

addition, the Habitats Regulations set out the requirement for the consideration of the potential effects of a project on European designated sites.

Actions which are prohibited by legislation can be made lawful on the approval and granting of a licence from Natural Resources Wales (NRW), subject to conditions.

Full details of the legislation are provided in Appendix A.

2 Methodology

2.1 Desk Study

The following websites were used to gather information on designated sites:

- Natural Resources Wales (NRW) website³;
- MAGIC (Multi-Agency Geographic Information for the Countryside) website⁴;
- Joint Nature Conservation Committee (JNCC)⁵.

The MAGIC website was used to identify statutory designated sites within the vicinity of the Project. A search radius of 5km and 2km was employed for European and national sites, respectively. A larger radius of 30km was considered for the marine Special Area of Conservation in the Bristol Channel due to the mobility of the site's designated features.

Further to this, the NRW and JNCC websites provided details and descriptions of protected sites, with cross-reference to maps and citations.

This desk-top assessment has been carried out based on relevant and available information to gain a more thorough understanding of the site. Non-statutory site information was used from the previous assessment¹.

2.2 Field Survey

2.2.1 Phase 1 Habitat Survey

A field survey was undertaken at the site on 2nd July 2019 by two experienced Arup ecologists. The field survey included recording data of the intertidal habitats/species and a search for evidence of protected species, such as birds and mammals (including marine species).

The Phase 1 Habitat Survey (JNCC, 2010)⁶ is a standard technique for rapidly obtaining baseline ecological information over a large area of land. It is primarily a mapping technique and uses a standard set of habitat definitions for classifying areas (including intertidal) of land on the basis of the vegetation and species present.

Target Notes have been made to record species composition within habitats and to highlight any ecological features of interest.

³ <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en>

⁴ <http://magic.defra.gov.uk/MagicMap.aspx>

⁵ <https://jncc.gov.uk/>

⁶ Joint Nature Conservation Council, 2010. *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*. (ISBN 0 86139 636 7).

2.3 Limitations

The findings presented in this study represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys are limited by factors which affect the presence of plants and animals, such as the time of year, migration patterns and behaviour.

The survey was undertaken at low tide (12:25 GMT), at a sea level height of approximately 1.4m with the habitats in the vicinity of MLWS. Whilst a survey at a spring tide would have exposed more of the intertidal area, the results of this survey are considered representative of the habitats present.

3 Results and Conclusion

3.1 Statutory Designated Sites

The search using MAGIC highlighted two European and four national statutory designated sites within 5km and 2km of the site boundary, respectively. A third marine European site, Bristol Channel Approaches Special Area of Conservation (SAC), has been considered given the mobility of its designated features. All designated sites are detailed in Table 1 below and shown on Figure 2.

Table 1. Statutory designated sites with 5km and 2km of the site for European and national sites, respectively.

Site Name	Features	Distance from Proposed Works
European sites		
Gower Ash Woods SAC	Annex I habitats that are a primary reason for selection of this site: - Tilio-Acerion forests of slopes, screes and ravines. Annex II habitats present as a qualifying feature, but not a primary reason for selection of this site: - Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>).	3.1km west
Limestone Coast of South West Wales SAC	Annex I habitats that are a primary reason for selection of this site: - Vegetated sea cliffs of the Atlantic and Baltic Coasts; - Fixed coastal dunes with herbaceous vegetation. Annex II habitats present as a qualifying feature, but not a primary reason for selection of this site: - European dry heaths; - Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>); - Caves not open to the public; - Submerged or partially submerged sea caves.	4.8km west

Site Name	Features	Distance from Proposed Works
	Annex I species that are a primary reason for selection of this site: - Greater horseshoe bat (<i>Rhinolophus ferrumequinum</i>); - Early gentian (<i>Gentianella anglica</i>). Annex II species present as a qualifying feature, but not a primary reason for selection of this site: - Petalwort (<i>Petalophyllum ralfsii</i>).	
Bristol Channel Approaches SAC	Annex II species that are a primary reason for selection of this site: - Harbour porpoise <i>Phocoena phocoena</i>	25.0km west (not included in Figure 2).
National sites		
Blackpill, Swansea Site of Special Scientific Interest (SSSI)	This site provides an overwintering and passage site for a larger number of waders. Although forming part of a complex which includes the Gwendraeth, Burry and Severn Estuaries, it supports significant proportions of some species in its own right. Counts for ringed plover (<i>Charadrius hiaticula</i>) and sanderling (<i>Calidris alba</i>) exceed 1% of both British and Western European populations, making the Bay of international importance in this respect. Other species, such as oystercatcher (<i>Haematopus ostralegus</i>), grey plover (<i>Pluvialis squatarola</i>), bar-tailed godwit (<i>Limosa lapponica</i>), knot (<i>Calidris canutus</i>) and dunlin (<i>C. alpina</i>) are all of local significance. The topography and seasonal remoteness of the foreshore at low tide are important for the maintenance of the scientific interest, while suitable roosting spots, outside of the SSSI, are necessary on the highest tides.	0.2km north-west
Oystermouth Old Quarry (Geological) SSSI	This site shows the 'Black Lias' facies of the Upper Limestone Shales. These uppermost Brigantian marine shales and muddy limestones contain a common Carboniferous limestone fauna of brachiopods, corals and the trilobite <i>Griffithides</i> .	1.0km north-west
Bracelet Bay (Geological) SSSI	Rock outcrops within this site provide excellent exposures of geological structures formed during the	0.3km south east

Site Name	Features	Distance from Proposed Works
	Variscan mountain building episode (orogeny) which took place during the Carboniferous Period.	
Langland Bay (Rotherslade) (Geological) SSSI	This site two kilometres west of Mumbles Head on the South Gower peninsula, a series of well exposed sections records the best evidence available for the limit of Late Devensian glaciation on east Gower.	1.2km south west

3.1.1.1 European Sites

There are two European designated sites within 5km of the site boundary. A third marine European site, included for the mobility of the site's designated feature: harbour porpoise *Phocoena phocoena*, is included also. Full details are provided in Table 1.

3.1.1.2 National Sites

There are four nationally designated sites within 2km of the site boundary. These four sites, all Sites of Special Scientific Interest, are designated for a variety of reasons, primarily geology or ornithology. Full details are provided in Table 1.

For the purposes of this report the following Geological SSSIs have been disregarded since they lack any biodiversity features: Oystermouth Old Quarry (Geological) SSSI, Bracelet Bay (Geological) SSSI and Langland Bay (Rotherslade) (Geological) SSSI.

3.2 Non- statutory Designated Sites

There is one locally designated statutory site (Local Nature Reserve (LNR)) and three locally designated non-statutory sites (Site of Importance for Nature Conservation (SINCs)) within 1km from the site boundary. These are detailed in Table 2 and shown on Figure 2.

Table 2. Locally designated sites within 1km from the site boundary.

Site Name	Features	Distance from Proposed Works
Swansea Bay SINC	The site stretches across the whole bay, from the dunes near Swansea Marina to Mumbles Pier. The SINC is designated for a variety of features, including wading birds, e.g. turnstone, dunlin, knot and ringed plover, as well as passerines, e.g. linnet. A number of plant species are also featured	Within site boundary

Site Name	Features	Distance from Proposed Works
	including Babington's orache <i>Atriplex glabriuscula</i> , Frosted orache <i>Atriplex laciniata</i> , sea purslane <i>Sesuvium portulacastrum</i> , sea rocket <i>Cakile maritima</i> , sea bindweed <i>Calystegia soldanella</i> and perennial wall rocket <i>Diplotaxis tenuifolia</i> . Invertebrates are also listed including golden-ringed dragonfly <i>Cordulegaster boltonii</i> and butterflies. Key habitat features in the SINC include neutral grassland containing uncommon species, reedbeds, maritime cliffs and slopes, coastal sand-dunes, shingle, semi-natural upland block, <i>Sabellaria alveolata</i> (honeycomb worm) reefs, saltmarsh mudflats, muddy gravels, sandy shore and blue mussel beds.	
Mumbles Hill Local Nature Reserve (LNR)	Habitats present in this LNR include maritime heath, limestone grassland, limestone scrub and woodland, each supporting different plants and animals. Over 200 species of plants and fungi, 40 species of birds and hundreds of species of butterflies, bees and bugs have been recorded on the hill. Small mammals such as voles, foxes and shrews also can be seen. Resident birds include green woodpecker <i>Picus viridis</i> , skylark <i>Alauda arvensis</i> and jay <i>Garrulus glandarius</i> whilst migratory birds include house martins <i>Delichon urbicum</i> , swallows <i>Hirundo rustica</i> and garden warblers <i>Sylvia borin</i> .	Adjacent to site boundary to west
Langland Bay to Mumbles Head SINC	This SINC is designated for a variety of features, including birds e.g. turnstone <i>Arenaria interpres</i> , dunlin <i>Calidris alpina</i> , chough <i>Pyrrhocorax pyrrhocorax</i> , ringed plover <i>Charadrius hiaticula</i> , little egret <i>Egretta garzetta</i> , linnet <i>Linaria cannabina</i> , kestrel <i>Falco tinnunculus</i> and peregrine falcon <i>F. peregrinus</i> . A number of plants species are also featured including sea-purslane <i>Halimione portulacoides</i> , yellow-wort <i>Blackstonia perfoliata</i> , distant sedge <i>Carex distans</i> , greater knapweed <i>Centaurea scabiosa</i> , sea carrot <i>Daucus carota</i> and common rock-rose <i>Helianthemum nummularium</i> . Invertebrates are also featured including moths, butterflies and bees. Key habitat features in the SINC include lowland mixed deciduous woodland, structurally-diverse and species-rich scrub, unimproved lowland calcareous grassland and maritime cliffs and slopes.	260m south

Site Name	Features	Distance from Proposed Works
Underhill Woods East SINC	This SINC has a number of key species features, comprising moth species, such as knot grass <i>Acrionicta rumicis</i> , garden tiger <i>Arctia caja</i> , mottled rustic <i>Caradrina morpheus</i> and small phoenix <i>Ecliptopera silaceata</i> . The key habitat features also include woodland containing an assemblage of ancient woodland indicator species.	620m west

3.3 Habitats

The Phase 1 Habitat survey was conducted during low tide in order to cover a large proportion of the intertidal area.

Common terrestrial and intertidal habitats were recorded during the intertidal Phase 1 Habitat survey. The site broadly consists of a shallow intertidal bay comprised of mud and sand, with overlying cobbles providing attachment for algal species and peripheral boulders forming sea defence structures.

The terrestrial habitat consists of a sea defence, slip ways and adjacent roads, scattered trees and paths with commercial properties bordering the sea wall. The area, including the upper foreshore, is heavily disturbed by the public, including dog-walkers. Ten habitat types were identified within the site and immediately adjacent to the site:

1. Open water 'sea';
2. Intertidal mud / sand;
3. Intertidal shingles / cobbles;
4. Intertidal boulders / rocks;
5. Boulders / rocks above high tide mark;
6. Introduced shrub;
7. Poor semi-improved grassland;
8. Buildings;
9. Hard standing;
10. Sea wall; and
11. Broadleaved scattered trees.

The habitats have been mapped and are provided on Figure 1. Important features have also been mapped as Target Notes (Appendix B) on Figure 1 and photographs of these features are provided in Appendix C.

3.3.1 Intertidal mud / sand

The majority of the intertidal area is comprised of intertidal mud / sand, with overlaying areas of shingle/cobble (described below). This area is completely covered at high tide. As a result of its inundation it supports large numbers of invertebrates, namely sand mason worm *Lanice conchilega* and other polychaete worms *Polychaeta* spp., as evident from their casts. Where exposure was restricted algal species were observed on the substrate, e.g. *Ulva* spp.

Cockles *Cerastoderma edule* and razor clams *Ensis* sp. were observed in the substrate. A dead smoothhound *Mustelus mustelus* was observed on the upper foreshore.

Two adult Mediterranean gulls *Ichthyaeetus melanocephalus*, which are listed on Schedule 1 of the Wildlife and Countryside Act 1981, were observed on the intertidal sand to the east end of the site (Figure 1, Target Note 4). No evidence of breeding from these species was noted.

3.3.2 Intertidal shingles / cobbles

Overlaying the mud/sand substrate were large areas of shingle/cobble (in part shown in Photograph 1). This rocky habitat increases the number of biotopes providing attachment and shelter for a greater diversity of species than the mud/sand itself. The greatest diversity of species was noted on the offshore bank of cobbles (Figure 1, Target Note 6). Cobble habitat around Verdi's Café (Figure 1, Target Note 9) had lower diversity given the cobbles' mobility; this habitat provides limited habitat for sheltering and foraging intertidal/marine species.

Algal species recorded amongst the cobbles included occasional bladder wrack *Fucus vesiculosus* and serrated wrack *F. serratus* towards the lower foreshore. *Ulva* spp. were infrequent amongst the cobbles and laver *Porphyra umbilicalis* was recorded on the edge of the cobble habitat.

An orange sponge (Porifera) was common towards the lower foreshore (Photograph 2).

Invertebrate species within this habitat included sand mason worms amongst the cobbles in the mud/sand substrate. The rocks themselves supported chitons (Polyplacophora), brittle stars (Ophiuroidea), tubeworms (Serpulidae), common starfish *Asterias rubens*, Bryozoa species, a species of phyllodocid polychaete worm and beadlet anemone *Actinia equina* (Photograph 3). Crabs were abundant amongst the cobbles with numerous juveniles recorded; species recorded included shore crab *Carcinus maenas*, edible crab *Cancer pagurus*, broad-clawed porcelain crab *Porcellana platycheles* and hermit crabs (Paguridae).

Gastropod species recorded included dog whelk *Nucella lapillus*, netted dog whelk *Tritia reticulatus*, limpet *Patella vulgata*, flat top shell *Steromphala umbilicalis*, painted top shell *Calliostoma zizyphinum*, barnacle species including the invasive *Austrominius modestus*, topshell (Cantharidinae) and periwinkle *Littorina littorea*.

3.3.3 Intertidal boulders / rocks

Boulders / rocks were observed along the slipways near Verdi's (Figure 1, Target Note 9) and around the southern slipway (Figure 1, Target Note 5). These rocks largely act as erosion protection and support for the coastal structures providing shelter and attachment for a number of intertidal species. Diversity was generally lower than the cobble habitat, however species are likely to be present but unobserved within the rock habitat.

Algal species observed included upper foreshore species, e.g. channel wrack *Pelvetia caniculata* at higher elevations and bladder wrack and *Ulva* spp. on the lower boulders.

Invertebrate species observed included: beadlet anemone, mussel *Mytilus edulis*, Bryozoa, barnacles, chitons, topshells and periwinkles.

3.3.4 Sea wall and boulder / rocks above high tide mark

The length of the upper foreshore habitat was bounded by a concrete sea wall. The southern side of the site had a more sloped sea wall, progressing to intertidal boulders, whereas the sea wall around Verdi's was a vertical structure with cobbles/boulders at the base.

Ecologically, the vertical sea walls around Verdi's had relatively low diversity having a smooth surface devoid of attachment features with gutweeds *Ulva* spp. present on the lower wall and some brown algal species; *Fucus* spp. The southern sea wall had a similarly low diversity; however, a number of lichen species, including *Verrucaria maura*, were noted on the upper sea wall, as well a small diversity of plants, largely grasses, at the top of the wall.

3.3.5 Hard standing

The majority of the terrestrial habitat was of bare ground comprising tarmac hardstanding, in the form of car parks, pathways and open areas, e.g. around Verdi's.

3.3.6 Introduced shrub

Bordering the hardstanding and car parks were rows of introduced shrubs, including in places Cotoneaster sp.

3.3.7 Broadleaved scattered trees

Within the introduced shrub were a number of broad-leaved trees, including one tree with low bat roost potential (Figure 1, Target Note 1; Photograph 4). These trees during the breeding bird season (March to August, inclusive) could have nesting bird potential also.

3.3.8 Poor semi-improved grassland

A bank strip of grassland adjacent to the coastal road. Scattered shrubs, e.g. *Cotoneaster* sp., were present along the bank. Grassland species included cock's foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus*, with forbs such as wild strawberry *Fragaria vesca* and red valerian *Centranthus ruber*.

3.3.9 Buildings

A number of buildings, associated with the slipway at Verdi's. Negligible bat potential, however birds may breed on rooftops during the breeding bird season, e.g. gulls Laridae.

3.4 Other notable species

No signs of otter or marine mammals were recorded on site.

4 Conclusion

4.1 Site Summary

The following sections summarise those habitat and species of most conservation value within the site boundary (Figure 1).

4.1.1 Designated Sites

Swansea Bay SINC (on site) and Blackpill Swansea SSSI (north of the site) both have wading birds as part of their site features. Mumbles Hill LNR is adjacent to the site to the west designated for a variety of species and habitats.

4.1.2 Habitats

The habitats on site are relatively varied reflecting the transition from intertidal mud/sand habitat to intertidal rocky substrates and the zonation of habitats into terrestrial habitat.

The most diverse intertidal habitat on site is the intertidal cobble bed (Figure 1, TN6), which along with other cobble/boulder habitat on site could be considered as Priority Habitat (Littoral Rock: Intertidal Boulder Communities), under Section 7 of the Environment (Wales) Act 2016.

The mud/sand habitat had a large number of polychaete worms, which would form an important prey component for foraging wading birds; which, as above, are features of on-site/nearby designated sites.

4.1.3 Species

One small ash tree adjacent to Mumbles Road had low potential for roosting bats, given the presence of small cavities underneath lifting bark. (Photograph 4; Figure 1, Target Note 1; Appendix B).

A number of Cotoneaster plants were observed on site, planted as ornamental shrub. A number of cotoneaster species are listed as Schedule 9 invasive species on the Wildlife and Countryside Act 1981.

4.2 Recommendations

Impacts to Cotoneaster plants, e.g. removal or disturbance, should be avoided, in case these species are listed on Schedule 9 of the Wildlife and Countryside Act 1981. Cotoneaster are difficult to reliably identify to species-level and are best considered from a precautionary principle to be treated as a Schedule 9 species. It is an offence to plant or cause to grow any plant in the wild listed on Schedule 9. Further advice should be obtained on the treatment of Schedule 9 plants on site, if impacts are anticipated to the vegetation.

Given the low bat roost potential tree on site further surveys are not recommended. If the tree is to be felled, then soft felling is recommended⁷. In general, the below points provide advice on potential impacts to semi-natural habitat.

Night working is to be avoided to reduce impacts to any foraging/commuting bats and/or any potential otter on site. If lighting is required, design should use directional lighting to avoid marine habitat, the low roost potential ash tree (if retained) and the Mumbles Hill Local Nature Reserve and avoid lightspill, e.g. with cowl.

Impacts to the foreshore habitat from any proposed works would need to consider impacts to intertidal habitats. Any works below the Mean High Water Springs level would need to consider a marine licence. Any removal of habitat, e.g. sand, cobbles etc. may need to consider a dredging licence. The potential for the release of contaminants during invasive works also needs to be considered. Works are advised to only occur at low tide to avoid impacts to marine species, e.g. fish.

Blackpill, Swansea SSSI and Swansea Bay SINC may both be impacted from any proposed intertidal works. Impacts to these designated sites needs to consider impacts to their qualifying features, with design avoiding / mitigating impacts where appropriate and in discussion with The City and County of Swansea and NRW. In order to comply with the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended), a Habitats Regulation Assessment (HRA) Stage 1: Screening report may be required in order to identify whether the proposed project is likely to have a significant effect on the features of a European site.

In general, impacts to intertidal communities from any proposed works are advised to be avoided given the potential for impacts to the SINC habitat, Priority Habitat and direct impacts to intertidal species on site; i.e. flora and fauna on and within intertidal substrates. Localised removal of intertidal habitat to create access to the foreshore may have a lower impact on intertidal communities than more significant wide-scale impacts, however consideration of environmental and ecological impact needs to be given once proposals are finalised. Creation of access tracks/haul roads using intertidal material is not recommended, given the potential for significant impacts to the marine habitat.

If vehicles/plant are to be taken on to the foreshore, tracked vehicles would be preferable, with consideration for the use of temporary materials if required on the soft substrate. Appropriate mitigation needs to be considered within a Construction Environment Management Plan (CEMP) before works commence.

Ecological enhancement measures are advised to be sought for the project moving forward, e.g. sea defence enhancement, such as Bioblocks⁸ or Vertipools.⁹

⁷ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

⁸ [http://urbaneproject.org/assets/pdf/\(5\)%20Louise%20Firth_BIOBLOCK%20and%20Gabions.pdf](http://urbaneproject.org/assets/pdf/(5)%20Louise%20Firth_BIOBLOCK%20and%20Gabions.pdf)

⁹ <https://www.artecology.space/vertipools>

Figures

Figure 1. Phase 1 Habitat Survey.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

SurveyBoundary

Phase 1 Habitat

Bare Ground

Boulders/Rocks above high tide mark

Intertidal - Mud/Sand

Intertidal - Shingles/Cobbles

Intertidal - Boulders/Rocks

Introduced Shrub

Poor Semi-improved Grassland

Buildings

Hardstanding

Artificial Sea Wall

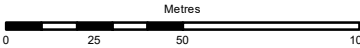
Broadleaved Scattered Tree

Target Note

TN9

P1	2017-06-12	KD	AC	PC
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Issue	Date	By	Chkd	Appd
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ARUP

4 Pierhead St
Cardiff CF10 4QP

Client
City and Council of Swansea

Job Title
Mumbles Coastal Protection Scheme

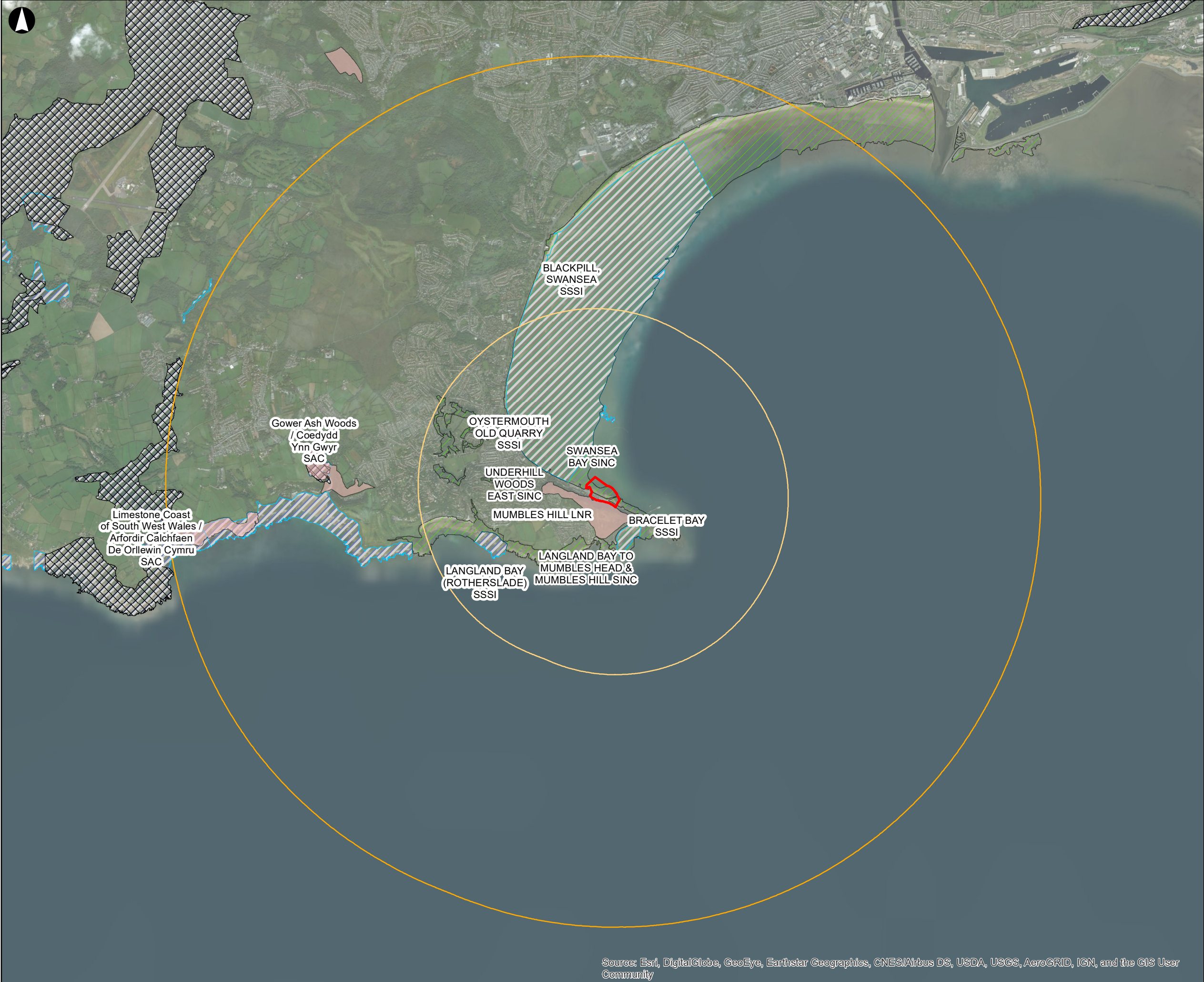
Phase 1 Habitat Survey

Scale at A3
1:2,138

Job No 252723-00	Drawing Status For Issue
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Drawing No 001	Issue F1
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Figure 2. Designated sites within 2 and 5km of the site boundary.



Legend

SurveyBoundary

2km Site Buffer

5km Site Buffer

SINC

LNR

SAC

SSSI

P0	2017-05-16	AC	AC	PC
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Issue	Date	By	Chkd	Appd
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Metres

0

550

1,100

2,200

ARUP

4 Pierhead St
Cardiff CF10 4QP

Client

City and Council of Swansea

Job Title

Mumbles Coastal Protection Scheme

Designated Sites

Scale at A3

1:42,777

Job No	Drawing Status
252723-00	For Issue

Drawing No	Issue
002	F1

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix A

Legislation

A1 Legislation

A framework of international, European, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. This is described in the following sections. The reader should refer to the original legislation for the definitive interpretation.

A1.1 Statutory Designated Sites

A network of nationally designated sites has been established through the designation of Sites of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 (as amended). The protection afforded by the Act means it is an offence to carry out or permit to be carried out any operation listed within the notification without the consent of the Statutory Nature Conservation Organisation¹⁰ (Natural Resources Wales).

The protection afforded to SSSIs is used to underpin the designation of areas at a European Level. European Sites comprise:

- Special Areas of Conservation (SAC) designated under the Conservation of Habitats and Species Regulations 2017 (as amended) (known as the Habitats Regulations);
- Special Protection Areas (SPA) designated under the Wildlife and Countryside Act.

Wetlands of International Importance (Ramsar Sites) declared under the Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 are normally also notified as SSSIs but are only considered European Sites as a matter of UK and Local Government Policy.

The Habitats Regulations transpose the requirements of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) in to law within England and Wales, while the Wildlife and Countryside Act transposes Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) in the law within England and Wales. Equivalent legislation exists to transpose these directives in the law within Scotland and Northern Ireland.

The Habitats Regulations require that consideration is given to the implications of plans and projects (developments) on European Sites are considered. Specifically Regulation 61(1) states:

“A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which –

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

¹⁰ Section 28 of the Wildlife and Countryside Act 1981 (as substituted by Schedule 9 of the Countryside and Rights of Way Act 2000).

(b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications for that site in view of that site's conservation objectives."

The formal consideration of effects on European Sites is therefore undertaken by the determining authority such as the Local Planning Authority.

Local Nature Reserves can be given protection against damaging operations through powers within the National Parks and Access to the Countryside Act 1949 (as amended). However this protection is usually conveyed through inclusion of protection within local planning policy relating to these sites and other non-statutory sites such as Sites of Importance for Nature Conservation.

A1.2 European Protected Species

The Habitats Regulations convey special protection to a number of species which are listed in Schedule 2 of the Regulations and are referred to as European Protected Species (EPS):

- All UK resident bat species;
- All whale and dolphin species;
- Large blue butterfly (*Maculinea arion*);
- Common dormouse (*Muscardinus avellanarius*);
- Pool frog (*Rana lessonae*);
- Sand lizard (*Lacerta agilis*);
- Fisher's estuarine moth (*Gortyna borelii lunata*);
- great crested newt (*Triturus cristatus*)
- common otter (*Lutra lutra*)
- wild cat (*Felis silvestris*);
- Lesser Whirlpool Ram's-horn Snail (*Anisus vorticulus*)
- Smooth snake (*Coronella austriaca*);
- Sturgeon (*Acipenser sturio*);
- Natterjack toad (*Bufo calamita*); and
- All marine turtles.

Regulation 41 makes it an offence to:

- a) Deliberately capture, injure or kill any wild animal of a EPS;
- b) Deliberately disturb wild animals of such a species;
- c) Deliberately takes or destroys the eggs of such a species;
- d) Damages or destroys a breeding site or resting place of such an animal.

Disturbance in the context of the offences above is disturbance which is likely to impair the ability of the animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Licences can be granted by the relevant SNCO for developments (sometime referred to as EPS Licences or Derogation Licences) providing the purposes of the licence is for “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.

A1.3 UK Protected Species

The Wildlife and Countryside Act 1981 provide protection to both EPSs and other species including wild birds, water voles and reptiles.

All wild birds, their nests and eggs are protected with some rare species afforded extra protection from disturbance during the breeding season (these species are listed in Schedule 1 of the Act). It is illegal to take any wild bird or damage or destroy the nests and eggs of breeding birds. There are certain exceptions to this in respect of wildfowl, game birds and certain species that may cause damage.

Water vole receive protection under the Wildlife and Countryside Act 1981 which prohibits the killing, injuring or taking by any method.

All native reptile species in the UK are subject to partial protection from intentional or reckless killing or injury only.

Badger and their setts are protected under the Protection of Badgers Act 1992 which makes it an offence to kill, injure or take a badger, or interfere with a sett.

A1.4 Other Legislation Relating to Species

Section 6 of the Environment (Wales) Act 2016 includes a duty on all public authorities to “seek to maintain and enhance biodiversity” so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to “promote the resilience of ecosystems”. This duty applies to government bodies, local authorities and statutory undertakers.

To assist in complying with this duty, public authorities must have regard to relevant evidence provided in the State of Natural Resources Report and any relevant area statement for an area in which the authority exercises functions, as well as having regard to the list of living organisms and habitats published under Section 7 of the Act. Species and habitats listed on Section 7 are considered to be of Principal Importance for the conservation of biological diversity.

The Environment (Wales) Act 2016 replaces the NERC Act 2006; Section 6 replaces Section 40 of the NERC Act and Section 7 replaces the Section 42 lists.

Appendix B

Target Notes

B1 Target Notes

Target Note Number	Comment
1	Ash tree on Mumbles road, approximately 5m height. Lifting bark around small cavities with low bat roost potential. Grid reference: 51.57083, - 3.985147.
2	<i>Cotoneaster</i> sp. shrub. Shrubs of cotoneaster were recorded around the site as ornamental planting. Species level identification was not determined given taxonomic difficulty; there is the potential for these plants to be listed on Schedule 9 of the Wildlife and Countryside Act 1981 and to be considered as invasive species.
3	Large intertidal rock amongst cobble habitat. <i>Pelvetia caniculata</i> , <i>Fucus vesiculosus</i> and <i>Ascophyllum nodosum</i> recorded here. Sea slaters observed <i>Ligia oceanica</i> .
4	Two adult Mediterranean gulls <i>Ichthyaeetus melanocephalus</i> observed.
5	Large boulders with <i>Ulva</i> sp., <i>Pelvetia caniculata</i> , <i>Fucus vesiculosus</i> . Occasional mollusc species underneath seaweed, e.g. common periwinkle.
6	Diverse cobble habitat with numerous algal species and invertebrate species. Notably, a large number of crab species, e.g. <i>Carcinus maenas</i> , <i>Cancer pagurus</i> , etc. Equally, large number of juvenile crabs (c. 5mm carapace width).
7	Open sand/mud habitat with abundance of sand mason worm <i>Lanice conchilega</i> and other polychaete worms. This habitat grades into a more diverse cobble habitat at the base of the sea wall at Verdi's, which contains algal species, e.g. <i>Ulva</i> spp. and <i>Fucus vesiculosus</i> . Molluscs were noted, e.g. common periwinkle <i>Littorina littorea</i> . The boulder habitat to the north of Verdi's likely provides shelter for other marine species. A dead smoothhound <i>Mustelus mustelus</i> was recorded at the base of the seawall.
8	Largely sand/mud habitat with some cobbles.
9	Verdi's café.

Appendix C

Photographs

C1 Photographs



Photograph 1. View looking south towards Mumbles pier, over the sand and cobble habitat.



Photograph 2. Orange-coloured Porifera on lower foreshore.



Photograph 3. Cobbles with brittle stars, barnacles and limpets.



Photograph 4. Ash tree with low bat roosting potential.