



# The Mole and The Quay, Barry

## Preliminary Ecological Appraisal

### Report for ABPmer

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# Summary of key issues

The Ecology Consultancy was commissioned by ABPmer in December 2019 to carry out a Preliminary Ecological Appraisal (PEA) of land at two separate sites, The Mole and The Quay, Barry, to inform future proposals for the construction of new residential and commercial buildings. The main findings of the PEA are as follows:

- Three internationally designated sites are located within 10km of the Sites: the Severn Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar sites are located 4.7km east, 7.2km east and 4.7km respectively. As there is not yet a formal development plan, it is considered possible potential development could impact on these sites and as a result at least a Stage 1 (Screening) Habitat Regulations Assessment may be required.
- The habitats within The Mole were dominated by species-poor semi-improved neutral grassland, with areas of scrub and hardstanding to the east of the site. Other habitats present included a small area of amenity grassland to the east, which is part of the Barry Community Water Activity Centre, a small flat-roofed building with adjacent metallic crates, and a jetty of metal and timber construction.
- The habitats within The Quay were dominated by amenity grassland, with areas of hardstanding around the eastern, southern and western perimeters.
- The habitats present within both Sites are locally common and are of importance at the site level only.
- **Breeding and Wintering Birds** – Habitat suitable for locally common species of breeding and wintering birds was present within The Mole. Mitigation measures will be required to minimise the risk of impacts to active nests. The habitats within the site at The Quay are of negligible suitability for breeding birds, however, due to the suitable habitat within the wider area around the Site, mitigation measures have been recommended.
- **Protected Plants** – Plants listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and listed as Species of Principal Importance and on the Local Biodiversity Action Plan have been recorded near to Site. As a result, further survey has been recommended for protected plants.
- **Reptiles** – Suitable habitat for reptiles was present at The Mole, with species-poor semi-improved grassland and areas of continuous scrub. Habitats present were of low value for reptiles and were isolated from off-site habitats due to surrounding developments. As such,

the likelihood of reptiles being present is considered to be low. Precautionary working methods are recommended to avoid causing harm to reptiles, should they be present.

- **Marine Biodiversity** – Proximity to marine waterbodies exists for both Sites. Marine fish and mammals have been noted on the data search provided prior to the survey. Impacts to the marine area are possible which could have a detrimental effect on the biodiversity. Further recommendations have been made in terms of mitigation.
- Recommendations to enhance the biodiversity value of the Site, including options for a Biodiversity Net Gain, in accordance with national and local planning policies comprise the inclusion of wildflower planting, hedgerow and tree planting and the provision of bird nesting and bat roosting opportunities.

# 1 Introduction

## BACKGROUND TO COMMISSION

- 1.1 The Ecology Consultancy was commissioned by ABPmer in December 2019 to carry out a Preliminary Ecological Appraisal (PEA) of land at The Mole and The Quay, Barry. The appraisal was carried out in order to provide ecological information to inform future proposals for residential and commercial development, as the Sites falls within the Strategic Site MG3 Barry Waterfront, allocated for 1,700 residential units, as well as a hotel, café, bars and other commercial properties. This appraisal considers land within the red-line boundaries (as shown in Figures 1a and 1b, Appendix 1), hereafter referred to collectively as ‘the Sites’.

## SCOPE OF THE REPORT

- 1.2 The aim of this appraisal is to provide baseline ecological information about the Sites. This will be used to identify any potential ecological constraints associated with future development and/or to identify the need for additional survey work to further evaluate any impact that may risk contravention of legislation or policy relating to protected species and nature conservation. Where necessary, avoidance, mitigation/compensation and/or enhancement measures have been recommended to ensure compliance. Where appropriate, this includes options that could be used to achieve a Biodiversity Net Gain, should this be a requirement of the scheme<sup>1</sup>.
- 1.3 This appraisal is based on the following information sources:
- a desk study of the Sites and land within a 2km surrounding radius, including search for European designated sites within 15km to inform the requirement for a Habitats Regulations Assessment;
  - a Phase 1 habitat survey (JNCC, 2010) of the Sites to identify and map the habitats present;
  - a protected species assessment of the Sites to identify features with potential to support legally protected species; and
  - an evaluation of the Sites’ importance for nature conservation.
- 1.4 This appraisal has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017) and

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<sup>1</sup> Note that a formal Biodiversity Net Gain assessment has not been carried out as part of this PEA.

as detailed in British Standard 42020:2013 *Biodiversity - Code of Practice for Biodiversity and Development* (BSI, 2013).

- 1.5 The survey was carried out by Sam Toon BSc, an experienced ecologist trained and competent in carrying out extended Phase 1 habitat surveys and protected species assessments.

## SITE CONTEXT AND STATUS

- 1.6 The proposed development site at The Mole is approximately 3.3ha in size and is centred on Ordnance Survey National Grid reference ST 1140 6738. The Site is located in the centre of Barry at Barry docks. It is bound immediately to the north, south and east by water and commercial and residential property to the west. The Bristol Channel is located approximately 500m to the south. The wider landscape largely comprises residential and commercial development within Barry. There are also areas of intertidal substrate to the south of the Site.
- 1.7 The proposed development site for the area at the Quay is approximately 0.2ha in size and is centred on the Ordnance Survey National Grid reference ST 11420 67498. The site at the Quay is approximately 150m north of The Mole. As with The Mole, the wider landscape largely comprises residential and commercial development within Barry, with areas of intertidal substrate also located to the south.

## DEVELOPMENT PROPOSALS

- 1.8 It is understood that the development proposals include construction of new residential units and commercial properties at the Sites as part of the Strategic Site MG3 Barry Waterfront development. For the purposes of this assessment, it assumed that all habitats within the Sites will be lost to future development.

## RELEVANT LEGISLATION AND PLANNING POLICY

- 1.9 The following key pieces of nature conservation legislation are relevant to this appraisal. A more detailed description of legislation is provided in Appendix 5
- The Conservation of Habitats and Species Regulations 2017 (as amended);
  - Wildlife and Countryside Act 1981 (as amended);
  - Natural Environment and Rural Communities Act 2006; and
  - Environment (Wales) Act 2016.

- 1.10 The Planning Policy Wales (PPW) (Cabinet Secretary for Energy, Planning and Rural Affairs, 2018) works with the objective to ensure the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.
- 1.11 Other planning policies at the local level which are of relevance to this development include the Vale of Glamorgan Local Development Plan (2011-2026) and the Vale of Glamorgan Biodiversity and Development Supplementary Planning Guidance (Vale of Glamorgan Council, 2018).

## 2 Methodology

### DESK STUDY

2.1 The following data sources were reviewed to provide information on the location of statutory designated sites<sup>2</sup>, non-statutory designated sites<sup>3</sup>, legally protected species<sup>4</sup>, Species and Habitats of Principal Importance<sup>5</sup> and other notable species<sup>6</sup> and notable habitats<sup>7</sup> that have been recorded within a 2-15km radius of the Sites:

- South East Wales Biological Records Centre, principally for species records and information on non-statutory sites;
- MAGIC (<http://www.magic.gov.uk/>) - the Government's online mapping service; and
- Ordnance Survey mapping and publicly available aerial photography.

2.2 Records provided by the desk study are provided in Section 3 of this report. Records for relevant protected or noteworthy species have been used to inform the assessment of the potential for protected species at the Sites and to provide a preliminary view of the Sites' ecological importance but are not presented in the report.

### HABITAT SURVEY

2.3 A survey of the Sites was carried out on the 10 January 2020. The survey covered all accessible areas of the Sites including boundary features. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010). Habitats were marked on a paper base map and subsequently digitised using ESRI ArcGIS software. Habitats were also assessed against descriptions of Habitat of Principal Importance (HPI) as set-out by the JNCC (BRIG, 2008)<sup>8</sup>.

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<sup>2</sup> **Statutory designations** include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

<sup>3</sup> **Non-statutory sites** are designated by local authorities (e.g. Sites of Importance for Nature Conservation or Local Wildlife Sites).

<sup>4</sup> **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981 (as amended); Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended); or in the Protection of [REDACTED]

<sup>5</sup> **Species/Habitats of Principal Importance** are those listed on Section 7 of the Environment (Wales) Act (2016).

<sup>6</sup> **Notable species** include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton *et al.*, 2015); and/or Red Data Book/nationally notable species (JNCC, undated).

<sup>7</sup> **Notable habitats** include Habitats of Principal Importance under the Natural Environment and Rural Communities Act, 2006; those included in an LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

<sup>8</sup> Collation of data required to confirm that certain habitats (including rivers and ponds) meet criteria for Habitats of Principal Importance is beyond that obtained during a Phase 1 habitat survey. In these cases, the potential

- 2.4 Records for dominant and notable plants are provided, as are incidental records of fauna noted during the course of the habitat survey.
- 2.5 The Sites were also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, detailed mapping of such species is beyond the scope of this commission and any locations on habitat plans are indicative only.

## PROTECTED AND INVASIVE SPECIES ASSESSMENT

- 2.6 The suitability of the Sites for legally protected and/or notable species was assessed on the basis of relevant desk study records<sup>9</sup> combined with field observations from the habitat survey. The likely importance of habitat for protected species occurrence was ranked on a scale from 'negligible' to 'present' as described in Table 2.1.
- 2.7 The assessment of habitat suitability for protected or notable species was based on professional judgement drawing on experience of carrying out surveys of a large number of urban and rural sites and best practice survey guidance on habitat suitability and identifying field signs.

**Table 2.1: Protected species assessment categories**

Category	Description
Present	Presence confirmed from the current survey or by recent, confirmed records.
High	Habitat present provides all of the known key requirements for a given species/species group. Local records are provided by desk study. The site is within or close to a national or regional stronghold for a particular species. Good quality surrounding habitat and good connectivity.
Moderate	Habitat present provides some of the known key requirements for a given species/species group. Several desk study records and/or the site is within national distribution and with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, barriers to movement and disturbance.
Low	Habitat present is of relatively poor quality for a given species/species group. Few or no desk study records. However, presence cannot be discounted on the basis of national distribution, nature of surrounding habitats or habitat fragmentation.
Negligible	Habitat is either absent or of very poor quality for a particular species or species group. No desk study records. Surrounding habitat unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known national range for a species.

for such habitats to meet relevant criteria is noted but further surveys to confirm this assessment may be recommended.

<sup>9</sup> Primarily dependent on the age of the records, distance from the site and types of habitats at the site.

- 2.8 The findings of this assessment establish the need for protected species surveys that are required to achieve compliance with relevant legislation.
- 2.9 Surveys may be required where a site is judged to be of low suitability for a particular species/species group. However, in some cases there may be opportunities to comply with legislation without further survey, through precautionary measures prior to and during construction.

## SITE EVALUATION

- 2.10 The Sites' ecological importance has been evaluated broadly following guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2019a) which ranks the nature conservation importance of a site according to a geographic scale of reference. In descending level of importance, features assessed to be 'important' are categorised as: international and European; national; regional (Vale of Glamorgan); metropolitan, county, vice county or other local authority-wide area (South Glamorgan); and Local (district, borough or parish (Barry)). Features of less than Local level of importance are classified as being of Site level importance where they have ecological importance within their immediate vicinity, or otherwise as being of negligible importance. In evaluating the nature conservation importance of the Sites, the following factors were considered: nature conservation designations; species/habitat rarity; naturalness; fragility and connectivity to other habitats.

## NOMENCLATURE

- 2.11 Nomenclature follows Stace (2019) and the Natural History Museum Species Dictionary (NHM, 2020) with scientific names provided at first mention and accepted common names thereafter. For ease, scientific names for vascular plants are provided in Appendix 3.

## DATA VALIDITY AND LIMITATIONS

- 2.12 Every effort has been made to provide a comprehensive description of the Sites, however, the following limitations apply to this assessment:
- The survey was conducted in January, outside the optimal season for habitat surveys. Some seasonal plant species (including invasive species) may not have been evident at the time of the survey, but given the habitat types present, this would not have affected the assessment.

- Building B1, located on The Mole, was not accessible at the time of survey and a formal Preliminary Bat Roost Assessment (PRA) was not carried out.
- The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the Sites. It should not be taken as providing a full and definitive survey of any protected species group. Additional surveys may be recommended if, on the basis of the preliminary assessment, or during subsequent surveys it is considered reasonably likely that protected species may be present.
- The ecological evaluation is preliminary and may change subject to the findings of further ecological surveys (should these be required).
- Even where data for a particular species group are provided in the desk study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest, the area may simply be under-recorded.
- Where only four figure grid references are provided for protected species by third parties, the precise location of species records can be difficult to determine, and they could potentially be present anywhere within the given 1km x 1km square. Equally six figure grid references may be accurate to the nearest 100m only.
- Ecological survey data are typically valid for eighteen months to three years, dependant on a review undertaken by a professional ecologist (CIEEM, 2019b).

2.13 Despite these limitations, it is considered that this report accurately reflects the habitats present, their biodiversity importance and the potential of the sites to support protected and notable species.

# 3 Results

## DESIGNATED SITES

### Statutory designated nature conservation sites

- 3.1 The Sites are not subject to any statutory nature conservation designations. However, there are several national designations within a 2km buffer and European protected sites within 15km of the sites (Table 3.1). Note that a number of sites important for their geology have been included below and are also included in Table 3.2. Detailed impact assessment and recommendations for these sites is beyond the scope of this assessment and they are included for information only.

**Table 3.1: Statutory Designated Sites**

Site Name	Distance from site and orientation	Reason for Designation
Severn Estuary Ramsar site	4.7km east	<p>The estuary's classic funnel shape, unique in Britain, is a factor causing the Severn to have the second-largest tidal range in the world (after the Bay of Fundy, Canada). This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide swept sand and rock. The species-poor invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders. The site is listed as a Ramsar Site under criteria 1, 3,5,6 and 8. The site is also proposed as an SAC.</p> <p>Ramsar criterion 1</p> <p>Sandbanks which are slightly covered by sea water all the time</p> <ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Atlantic salt meadows</li> </ul> <p>Ramsar criterion 3</p> <p>Due to unusual estuarine communities, reduced diversity and high productivity.</p> <p>Ramsar criterion 4</p> <p>This site is important for the run of migratory fish between sea and river via estuary. Species include salmon <i>Salmo salar</i>, sea trout <i>Salmo trutta</i>, sea lamprey <i>Petromyzon marinus</i>, river lamprey <i>Lampetra fluviatilis</i>, allis shad <i>Alosa alosa</i>, twaite shad <i>A. fallax</i>, and eel <i>Anguilla anguilla</i>. It is also</p>

		<p>of particular importance for migratory birds during spring and autumn.</p> <p>Ramsar criterion 5</p> <p>Assemblages of international importance:</p> <p>Species with peak counts in winter: greater white-fronted goose, <i>Anser albifrons albifrons</i>, shelduck, <i>Tadorna tadorna</i>, gadwall, <i>Anas strepera strepera</i>, dunlin, <i>Calidris alpina alpina</i>, redshank, <i>Tringa totanus tetanus</i>.</p> <p>Ramsar criterion 6</p> <p>Species/populations occurring at levels of international importance;</p> <p>Lesser black-backed gull, <i>Larus fuscus</i>, ringed plover, <i>Charadrius hiaticula</i>, teal, <i>Anas crecca</i> and pintail, <i>Anas acuta</i>.</p> <p>Ramsar criterion 8</p> <p>The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon, sea trout, sea lamprey river lamprey, allis shad, twaite shad, and eel use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad and twaite shad which feed on mysid shrimps in the salt wedge.</p>
Severn Estuary Special Protected Area (SPA)	4.7km east	The Severn Estuary qualifies under Article 41 of the Birds Directive for supporting an international important over-wintering population of Berwick's swan <i>Cygnus columbianus bewickii</i> , Article 4.2 for a wetland of international importance due to supporting over 20000 wintering birds, as well as internationally important numbers of white fronted goose, common shelduck, gadwall, common redshank, dunlin and gadwall.
Severn Estuary/ Môr Hafren (pSCI, SCI or SAC)	7.2km east	The Severn Estuary has been designated a SAC on the basis that it supports occurrences of habitat types listed in Annexe 1 and 2, estuaries, mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows. In addition the following Annexe 1 species: sea lamprey, river lamprey and twaite shad are present.
Barry Island Site of Special Scientific Interest (SSSI)	718m south-west	This site is designated due to its paleogeological features: the terraces are covered by poorly sorted angular breccias, interpreted as fossil screes, and better sorted gravels associated with wave-rippled and desiccated finer sediments which are interpreted as lacustrine short zone (beach) sediments. The locality is unique in showing such a spectacular exposure of marginal Triassic facies.
Hayes Point to Bendrick Rock SSSI	1.5km south-east	This 1.8km stretch of coastline lies to the south-east of Barry on the northern shore of the Bristol Channel. The whole length of the cliff line and foreshore provides excellent exposures through important rock sections of Triassic age while the

		vicinity of Bendrick Rock is one of the best localities in Britain for fossil footprints.
Cliff Wood – Golden Stairs SSSI	1.8km west	This site is best example of a mixed woodland in South Glamorgan - it has a canopy of pedunculate oak, ash, maple and yew. The interesting, ungrazed ground flora and wooded cliff areas includes purple gromwell <i>Lithospermum purpureocaeruleum</i> , which is restricted to a very small number of sites in the county.
Fferm Walters SSSI	1.8km north-west	Fferm Walters is designated due to its exceptionally large area of species-rich neutral grassland, most of which has a particularly calcicolous nature and is one of the rarest types of grassland in Wales. Part of this grassland is undergoing restoration. The grassland is associated with woodland, hedgerows and scrub and smaller areas of damp grassland.
Cwm Talwg Woodlands Local Nature Reserve (LNR)	1.5km north	A Local Nature Reserve, 3ha in size comprising of woodland within Cwm Talwg, including areas of ancient semi-natural woodland designated in 1997.

### Non-statutory designated nature conservation sites

- 3.2 The Sites are not subject to any non-statutory nature conservation designations, however there are five such designations within a 2km radius of the Sites. These are detailed in Table 3.2 below.

**Table 3.2: Non-Statutory Designated Sites**

Site Name	Distance from site and orientation	Reason for designation
Barry Harbour Coastal Cliffs Regionally Important Geological and Geomorphical Site (RIGS)	700m south-west	The Barry Marine Conservation Area was designated in 1991 by the former South Glamorgan County Council in recognition of the special architectural and historic interest of the area.
Gladstone Road Pond Site of Importance for Nature Conservation (SINC)	1km north-west	No further detail supplied.
Friars Point (SINC and RIGS)	1.2km south	Friars Point is classed as a Regionally Important Geological Site due to the presence of certain minerals found in the area, such as Baryte, Calcite and Galena.
Bendrick Rock (RIGS)	1.5km south-east	No further detail supplied.

Cadoxton River (SINC)	1.6km south-east	River. No further detail supplied.
Cadoxton Pond (Wildlife Trust Reserve)	1.7km north-east	A Wildlife Trust Reserve, 30 acres in size with a specific importance for moth populations, in particular, Fenland pearl moth <i>Anania perlucidalis</i> which was not seen in Wales until 2009 and has since been recorded in Wales three times.
Cadoxton (Wildlife Trust Reserve)	1.7km north-east	No further detail supplied
Porthkerry Country Park	1.9km west	The Vale of Glamorgan designated Porthkerry as a Country Park in 1976 due to popularity from tourism

## Habitat inventories and landscape-scale conservation initiatives

### Habitats of Principal Importance

- 3.3 No HPI have been identified within the Sites. Habitats identified within a 2km radius of the Sites included a network of coastal habitats along the Bristol Channel, located approximately 650m to the south-west. The coastal habitat types present were intertidal substrate habitats, comprising rock, sand, mud and a single area of shingle.
- 3.4 A network of woodland is present in the wider landscape, predominantly to the west of Barry. There are seven areas of woodland, ranging from 0.57ha to 65.8ha in size, within a 2km radius of the Sites, with the closest being an area of broadleaved woodland located approximately 720m south-west of the Sites.

### Ancient Woodland

- 3.5 An area of ancient woodland, Cwm Talwg Woodlands (LNR), is located 1.5km north and comprised ancient semi-natural woodland.

## PHASE 1 HABITAT SURVEY

### Overview

- 3.6 The Mole contained a palisade fence, running north to south, situated approximately 150m within the site, separating it into a western area dominated by species-poor semi-improved neutral grassland with areas of scrub scattered throughout (Appendix 2, Photograph 1) and the Barry Community Water Activity Centre to the east (Appendix 2, Photograph 2). A hardstanding road ran the length of the site from west to east, providing access to the water activities centre. The habitat surrounding the activity centre was predominantly amenity grassland with areas of hardstanding. There was a small service

building (building B1) with a flat roof and several metal shipping containers in the east of the Site. A jetty of timber and metal construction was located in the east of the Site.

- 3.7 The Quay was dominated by poorly managed amenity grassland, with areas of bare ground where vegetation had been damaged from public activities (Appendix 2, Photograph 3). The Site topography was split, with a steep sided bank on the north section flattening out in the south. The outer perimeter of the Site to the east, south and west, contained areas of hardstanding with a cast iron fence. Eleven artificial lights were also present (Appendix 2, Photograph 4).
- 3.8 Phase 1 habitat types are mapped in Figure 1a and 1b, Appendix 1. A description of dominant and notable species and the composition of each habitat is provided below. A species list is provided in Appendix 3.

#### **Habitat description – The Mole**

##### ***Species poor semi-improved natural grassland***

- 3.9 The Mole was dominated by species-poor semi-improved neutral grassland throughout. The site was largely unmanaged, with long tussocky grass species dominated by perennial ryegrass and abundant European marram. Frequent herb species were also present throughout, including common vetch, cow parsley, suffocated clover, creeping buttercup and winter heliotrope.

##### ***Scattered and continuous scrub***

- 3.10 Areas of scattered scrub were present throughout the Site dominated by buddleia and common gorse. Frequent bramble with rarer blackthorn and dog rose were also present in these areas. Areas of continuous scrub were present around the western edge of the Site and a strip stretching from west to east through the centre of the Site along the road. These areas were dominated by common gorse, with frequent bramble, blackthorn and dog rose.

### *Hardstanding*

- 3.11 An area of hardstanding was present in the north section of the Site in the form of a road, which ran from the entrance to the Site in the west, up to the water activities centre in the east. A further area of hardstanding was situated in the extreme east of the Site as the slipway was used for boat access to the docks. A strip of hardstanding ran around the perimeter of the site, leading down to the waters' edge at a gentle gradient. No botanical species were associated with this habitat type.
- 3.12 A small jetty (Appendix 4, Target note 1) was situated at the far eastern extent of the Site, with the jetty angled towards the south. The main frame of the jetty was of metal construction, with a wooden top.

### *Amenity grassland*

- 3.13 The east of the Site contained an area of well-managed amenity grassland which comprised the water activities centre. The sward was short and dominated by perennial ryegrass.

### *Building*

- 3.14 A small service building (building B1), owned by the water activities centre, is present within the east of the Site. The building was a single storey portable office structure with a flat roof. Areas around the roof appeared to be in poor condition as the membrane was no longer close fitted to the structure. A number of metallic crates were also present in the same area as the portable office.

### *Habitat description – The Quay*

#### *Amenity grassland*

- 3.15 The dominant habitat on Site was amenity grassland. This was of a short sward which appeared to be regularly managed and included daisy, dandelion, clover, round-leaved crane's-bill, common ragwort, bloodwort and sphagnum moss. The topography of the Site was undulating (Appendix 2, Photograph 4). The southern section of the Site appeared to have been used by the public with signs of vegetation being damaged, including areas of trampling.

### *Hardstanding*

- 3.16 An area of hardstanding was present in the eastern, southern and western sections of the Site, which also contained a cast iron fence.

### PROTECTED AND INVASIVE SPECIES ASSESSMENT

- 3.17 The potential for the Sites to support protected species has been assessed using criteria provided in Table 2.1 based on the results of the desk study and observations made during the surveys of habitats at the Sites. Other legally protected species are not referred to as it is considered that the Sites do not contain habitats that would be suitable to support them. The following species groups are potentially present at the Sites:

- bats;
- amphibians;
- reptiles;
- terrestrial invertebrates;
- marine mammals;
- breeding/wintering birds;
- protected plant species; and
- marine fish.

- 3.18 The table also summarises relevant legislation and policies relating to protected and invasive species. Key pieces of statute are summarised in Section 1 and set-out in greater detail in Appendix 4. Note that desk study data are relevant to both the Mole and the Quay. They have been presented once only rather than being duplicated for each site separately.

**Table 3.3: Protected and Invasive Species Assessment**

Habitat/ species	Status <sup>10, 11</sup>	Likelihood of occurrence
Bats	HR WCA S5 SPI LBAP	<p><b>The Mole</b></p> <p><b>Roosting NEGLIGIBLE:</b> A single, flat-roofed building was present within the Site. The edges of the poorly fitted roof membrane provide some potential opportunities for bats to access the building (Photograph 5) however, due to the material of the membrane, the lack of internal roof void and the overall exposure to the elements, the building is of negligible suitability for roosting bats.</p> <p>The desk study returned 38 records of bats from within a 2km radius of the Sites. These included one confirmed roost; a common pipistrelle <i>Pipistrellus pipistrellus</i> maternity roost located approximately 1.4km west of the Sites in 2008. There were also a number of records of common pipistrelle, soprano pipistrelle <i>P. pygmaeus</i>, brown long-eared bat <i>Plecotus auritus</i>, noctule <i>Nyctalus noctula</i>, serotine <i>Eptesicus serotinus</i>, lesser horseshoe bat <i>Rhinolophus hipposideros</i> and Myotis bats <i>Myotis</i> sp. within a 2km radius of the Sites, the majority of which were recorded in-flight using hand-held detectors. Three records of dead bats from 2008 and 2014 were also provided.</p> <p><b>Foraging/commuting NEGLIGIBLE:</b> The species-poor semi-improved grassland and amenity grassland present within the Site are of limited value to foraging and commuting bats. There is no suitable habitat within the immediate vicinity of the Site, which is dominated by existing commercial and residential development, and poor connectivity to areas of suitable habitat within the wider landscape.</p> <p><b>The building within the Site is of negligible suitability for roosting bats and the habitats are of negligible suitability for foraging and commuting bats. As such, bats are not considered further in this report.</b></p> <p><b>The Quay</b></p> <p><b>Roosting and Foraging/Commuting - NEGLIGIBLE:</b> The amenity grassland dominating the Site is of limited value to foraging and commuting bats, being small in extent and providing limited connectivity. Streetlights were also present within the Site, which may deter some species of bat from foraging within this area. Suitable foraging and commuting habitat, comprising a row of trees immediately to the east and watercourses are present within the wider landscape surrounding the Site.</p> <p><b>The habitats within the Site are of negligible suitability for foraging and commuting bats. As such, bats are not considered further in this report.</b></p>

<sup>10</sup> The following abbreviations have been used to signify the legislation regarding different species: HR = Conservation of Habitats and Species Regulations 2017 (as amended); WCA S1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); WCA S5 = Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); WCA S9 = Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

<sup>11</sup> The following abbreviations have been used to signify the policy of conservation assessments applying to notable species: SPI = Species of Principal Importance under Section 7 of the Environment (Wales) Act (2016); LBAP = Local Biodiversity Action Plan species; BoCC = Birds of Conservation Concern - amber list / red list (Eaton *et al.*, 2015); and/or RD/NN = red data book/nationally notable species (JNCC, undated).

**Table 3.3: Protected and Invasive Species Assessment**

Habitat/ species	Status <sup>10, 11</sup>	Likelihood of occurrence
Amphibians	WCA S5 SPI	<p><b>The Mole</b></p> <p><b>NEGLIGIBLE:</b> The species-poor semi-improved grassland to the west of the building within the Site is of low value to common amphibians, being quite large in extent. There are no freshwater waterbodies within the Site and there is poor connectivity to other freshwater waterbodies and suitable terrestrial habitats off-site.</p> <p>Records were returned for common toad <i>Bufo bufo</i> and palmate newt <i>Lissotriton helveticus</i> 1.8km north east of the Sites.</p> <p><b>Considering the above, there is negligible potential for amphibians to occur within the Site and as such, they are not considered further in Section 4 of this report.</b></p>
		<p><b>The Quay</b></p> <p><b>NEGLIGIBLE:</b> The grassland within the site is of low value to foraging amphibians. However, there are no freshwater waterbodies within the Site and connectivity to freshwater waterbodies and suitable terrestrial habitats off-site is limited.</p> <p><b>Considering the above there is negligible potential for amphibians to occur within the Site, and, as such they are not considered further in Section 4 of this report.</b></p>
Reptiles	WCA S5 SPI LBAP	<p><b>The Mole</b></p> <p><b>LOW:</b> The species-poor semi-improved grassland and scrub to the west of the building within the site is of low value to foraging reptiles, albeit quite large in extent. Further to this, the site is isolated from off-site habitats due to surrounding developments of residential and commercial properties. As such, the likelihood of reptile presence is considered low although cannot be discounted.</p> <p>A single record was returned for common lizard <i>Zootoca vivipara</i> from 1.8km north-east of the Sites.</p> <p><b>As the presence of reptiles within the Site cannot be discounted, they are considered further in Section 4 of this report.</b></p>
		<p><b>The Quay</b></p> <p><b>NEGLIGIBLE:</b> The grassland within the Site is of some value to reptiles. However, connectivity to the Site itself is limited.</p> <p><b>Considering the above there is negligible potential for reptiles to occur within the Site, and, as such they are not considered further in Section 4 of this report.</b></p>
Terrestrial Invertebrates	SPI LBAP	<p><b>The Mole</b></p> <p><b>NEGLIGIBLE:</b> The species-poor semi-improved grassland to the west of the building within the Site is of low value to common invertebrate species. There are 29 records of six species with SPI, UK Red Data Book listed (IUCN) (1 or 2) and/or Local BAP status within a 2km radius of the Sites. The closest of these are located along Barry Docks, the water body adjacent to the Sites. Species recorded include</p>

**Table 3.3: Protected and Invasive Species Assessment**

Habitat/ species	Status <sup>10, 11</sup>	Likelihood of occurrence
	RD1 RD2	<p>brown-banded carder-bee <i>Bombus humilis</i>, moss carder-bee <i>Bombus muscorum</i>, red-shanked carder-bee <i>Bombus ruderarius</i>, shrill carder bee <i>Bombus sylvarum</i>, dingy skipper <i>Erynnis tages</i> and large wainscot <i>Rhizodra lutos</i>a. There is negligible potential for nesting bees or other less common invertebrates, which have been recorded in the local area, due to a lack of suitable habitats for these species.</p> <p><b>There is negligible possibility that protected or notable invertebrates use the on-site habitats, as such they are not considered further in this report.</b></p> <p><b>The Quay</b></p> <p><b>NEGLIGIBLE:</b> The grassland within the Site is of good value to invertebrates. However, there is negligible potential for nesting bees and other invertebrates that have been recorded in the local area, due to a lack of suitable habitats for these species.</p> <p><b>There is negligible possibility that protected or notable invertebrates use the on-site habitats, as such they are not considered further in this report.</b></p>
Marine Mammals	WCA S5 SPI	<p><b>The Mole</b></p> <p><b>NEGLIGIBLE:</b> There is no suitable habitat on Site, however it is adjacent the docks which does offer connectivity to the wider marine environment.</p> <p>A single record was returned for three common porpoise <i>Phocoena phocoena</i> within 1km of the Sites to the south.</p> <p><b>There is a negligible possibility that marine mammals use the on-site habitats, as such they are not considered further in this report. The wider marine environment adjacent to the Site is considered separately in section 4 of this report.</b></p> <p><b>The Quay</b></p> <p><b>NEGLIGIBLE:</b> There is no suitable habitat on Site, however it is adjacent the docks which does offer connectivity to the wider marine environment.</p> <p><b>There is a negligible possibility that marine mammals use the on-site habitats, as such they are not considered further in this report. The wider marine environment adjacent to the Site is considered separately in section 4 of this report.</b></p>
Protected plant species	WCA S8 SPI	<p><b>The Mole</b></p> <p><b>MODERATE:</b> Habitats on Site have potential to support a variety of plant species.</p> <p>The desk study returned records of rough marsh-mallow <i>Malva setigera</i>, located approximately 750m east of the Sites. This species is included on Schedule 8 and listed as Locally Important in SEWBReC area. There are also historic records of perennial centaury <i>Centaureum</i></p>

**Table 3.3: Protected and Invasive Species Assessment**

Habitat/ species	Status <sup>10, 11</sup>	Likelihood of occurrence
		<p><i>scilloides</i> within Barry Docks. This species is listed as a SPI, UK Red Data Book listing based on IUCN guidelines, Local Biodiversity Action Plan Species and IUCN Threat Listing of Welsh Vascular Plants status.</p> <p><b>The habitats on site are suitable for both of these species, and therefore they are considered further in Section 4 of this report.</b></p>
		<p><b>The Quay</b></p> <p><b>MODERATE:</b> Habitats on site have potential to support a variety of plant species.</p> <p><b>The habitats on site are suitable for both of these species, and therefore they are considered further in Section 4 of this report.</b></p>
Breeding birds	WCA S5 WCA S1 BoCC SPI LBAP	<p><b>The Mole</b></p> <p><b>MODERATE:</b> Green sandpiper <i>Tringa ochropus</i> were recorded on Site during the survey. The species-poor semi-improved grassland and areas of scrub within the Site provide suitable nesting habitat and shelter for ground nesting species and other species of common and declining bird species (Appendix 2, Photograph 6). However, green sandpiper are exceptionally rare breeders in the UK and it is therefore considered highly unlikely this species would be breeding on Site.</p> <p>There are 332 records of Schedule 1 bird species within a 2km radius of the Sites. The closest of these are located along Barry Docks and include 54 records, including kingfisher <i>Alcedo atthis</i>, purple sandpiper <i>Calidris maritima</i> and great northern diver <i>Gavia immer</i>. There are also 27 records of sandpiper species within a 2km radius of the Sites.</p> <p>The site does not provide the required muddy embankments for kingfisher and neither purple sandpiper, wood sandpiper or great northern diver breed in Wales.</p> <p>In addition, due to the specific habitats required by overwintering wader and waterfowl species, which are not found on Site, and the level of human activity around Site, it is considered the Site is not suitable for overwintering bird species recorded within the nearby designated sites.</p> <p><b>It is likely that only common breeding bird species will occur at the Site and these are considered further in Section 4 of this report.</b></p>
		<p><b>The Quay</b></p> <p><b>NEGLIGIBLE:</b> No species of bird were recorded on Site during the survey. The amenity grassland within the Site provides a lack of nesting habitat or shelter for any bird species.</p> <p><b>It is not likely that breeding birds will occur at the site and as such, no further recommendation for the site at the Quay regarding breeding birds is required.</b></p>

**Table 3.3: Protected and Invasive Species Assessment**

Habitat/ species	Status <sup>10, 11</sup>	Likelihood of occurrence
Wintering birds	Habitats Directive  WCA S5 WCA S1 BoCC SPI LBAP	<p><b>The Mole</b></p> <p><b>LOW:</b> Green sandpiper were recorded on site during the survey. The species-poor semi-improved grassland and areas of scrub within the site provide suitable wintering and sheltering habitat for common bird species. Due to the lack of specific habitats required by overwintering wader and waterfowl species and the level of human activity, it is considered that the Site is not suitable for overwintering bird species associated within the nearby designated sites.</p> <p>There are 332 records of Schedule 1 bird species within a 2km radius of the Sites. The closest of these are located along Barry Docks, the water body encompassing the site and include 54 records including kingfisher <i>Alcedo atthis</i>, purple sandpiper <i>Calidris maritima</i> and great northern diver <i>Gavia immer</i>. There are also 27 records of sandpiper species within a 2km radius of the Sites, which the site itself provides no suitable wintering habitat for.</p> <p><b>It is likely that only common wintering bird species will occur at the site as a low likelihood of occurrence and as such they are considered further in Section 4 of this report.</b></p>
Wintering birds	Habitats Directive  WCA S5 WCA S1 BoCC SPI LBAP	<p><b>Quay</b></p> <p><b>LOW:</b> The amenity grassland within the Site provides suitable wintering and sheltering habitat for common bird species. Due to the specific habitats required by overwintering wader and waterfowl species, which are not found on Site, and the level of human activity around the Site, it is considered that the Site is not suitable for overwintering bird species recorded within the nearby designated sites.</p> <p><b>It is likely that only common wintering bird species will occur at the site as a low likelihood of occurrence and as such, they are considered further in Section 4 of this report.</b></p>
Marine Fish	WCA S7  LBAP	<p><b>The Mole</b></p> <p><b>MODERATE:</b> There are no marine waterbodies present within the Site, however the Site is located adjacent to Barry Docks which could potentially be affected during the construction phase, for example through dust deposition or water pollution.</p> <p>There are five records of marine fish species noted on the data search conducted within a 2km radius of the site. These include Atlantic cod <i>Gadhus morhua</i> and sea trout <i>Salmo trutta</i>. Limited records could be attributed to the lack of visual sightings due to the nature of the species, however, species should not be discounted in regards the construction of the development in proximity to the waterbody.</p> <p><b>It is likely that marine fish species will be present in the docks adjacent to the site and as such, they are considered further in Section 4 of this report.</b></p>

**Table 3.3: Protected and Invasive Species Assessment**

Habitat/ species	Status <sup>10, 11</sup>	Likelihood of occurrence
		<p><b>The Quay</b></p> <p><b>MODERATE:</b> There are no marine waterbodies present within the Site, however the Site is located adjacent to Barry Docks which could potentially be affected during the construction phase, for example through dust deposition or water pollution.</p> <p><b>It is likely that marine fish species will be present in the docks adjacent to the site and as such, they are considered further in Section 4 of this report.</b></p>

## NATURE CONSERVATION EVALUATION

- 3.19 The Sites are not subject to any nature conservation designations and no non-statutory designated sites are present within 2km.
- 3.20 The Severn Estuary SPA, SAC and Ramsar site is located at 4.7km east, 7.2km east, 4.7km east of the Sites respectively. There are also four SSSI within 2km; the nearest of which is Barry Island SSSI, located 1km south of the Sites at its nearest point. As there are no formal plans for the future development of the Sites, impacts on these designated sites cannot be discounted. However, due to the distance from the Sites, the size and nature of the development it is considered unlikely to result in significant negative effects on the integrity of these statutory sites.
- 3.21 The Mole comprised limited common and widespread habitats, including species-poor semi-improved neutral grassland, scrub, hardstanding, amenity grassland, and a small temporary office building. These habitats are considered to be of importance at the site level only. Similarly, the Quay comprised limited common and widespread habitats, including amenity grassland and is of limited importance at the site level only.
- 3.22 Both the Mole and the Quay are located adjacent the Celtic Sea and therefore connected to a wide variety of marine habitats. While no direct impacts on the Celtic sea are anticipated, it is considered possible that, without mitigation, there may be indirect effects as a result of future development.
- 3.23 The habitats at the Sites were suitable for a range of note-worthy species as reported in the desk study or recorded during the survey, as follows:
- The species-poor semi-improved natural grassland and areas of scrub at the Mole provided suitable habitat and shelter for ground nesting birds; and the grassland habitats present at both the Mole and the Quay provide suitable habitat for common wintering bird species. Populations are likely to be of importance at the local level within both sites;
  - The marine habitats adjacent to the Mole and the Quay are suitable for a number of protected and notable fish species, as identified in the data search. Populations within the Barry Docks area are likely to be of importance at the district level;
  - The habitats present at the Mole are of low suitability for common reptile species and likelihood of presence is considered to be low. A Precautionary Working Method

Statement is required to avoid causing harm to reptiles, should they be present at this site;

- Due to the time of year the survey was conducted, it was difficult to identify any rarer species of plant. Protected plant species have been noted on the data search provided prior to the survey and further vegetation surveys are required to determine if these species are present.

## 4 Potential Impacts and Recommendations

4.1 This section summarises the potential impacts on habitats and notable species that may be present at the Sites. The impact assessment is preliminary and further detailed assessment and survey will be required to assess impacts and design suitable mitigation, where appropriate.

4.2 The following key ecological issues have been identified:

- The Severn Estuary SPA, SAC and Ramsar sites are present within 4.7km of both sites. Although impacts are considered unlikely, a Stage 1 (Screening) Habitats Regulations Assessment (HRA) may be requested by the Local Planning Authority.
- Both the Mole and the Quay are located adjacent the Celtic Sea and therefore connected to a wide variety of marine habitats. It is considered possible that, in the absence of mitigation, there may be indirect effects as a result of the development on the marine biodiversity. Measures should be implemented to minimise this.
- Habitat suitable for locally common and widespread species of breeding birds is present at the Mole; measures should be taken to avoid killing birds or destroying their nests.
- Suitable habitat is present for locally common species of wintering birds at the Mole and the Quay and mitigation measures have been recommended.
- Protected and notable plants species have been reported in the desk study, as such further survey is required to determine if there are protected plant species on site at the Mole and the Quay.
- The poor semi-improved grassland and areas of scrub at The Mole provide low suitability for reptiles to be present as an isolated population. Precautionary working methods are required to avoid causing harm to reptiles, should they be present.
- The marine habitats adjacent to both the Mole and the Quay are suitable for a number of protected and notable marine fish species. Mitigation measures to ensure these species are safeguarded during construction have been recommended.
- A range of measures should be undertaken to satisfy the requirement for ecological enhancement (biodiversity net gain) included in planning policy.

### CONSTRAINTS AND MITIGATION/COMPENSATION

### *Designated sites*

- 4.3 The Severn Estuary SPA, SAC and Ramsar sites are present within 8km of the Sites. As such, whilst impacts are considered to be unlikely, the local planning authority may request a Stage 1 (Screening) HRA assessment to determine whether future proposals are likely to affect these sites.

### *Habitats*

- 4.4 Both the Mole and the Quay are located adjacent the Celtic Sea and therefore connected to a wide variety of marine habitats. It is considered possible that there may be indirect effects as a result of the future development of the Sites.
- 4.5 To minimise indirect impacts as a result of construction the following measures should be employed:
- Heras fencing should be erected around the boundaries of the works areas, on land within the Site boundary, to prevent machinery or items from straying into areas of habitat beyond the works boundary.
  - All contractors will be made aware that the following applies to areas of habitat adjacent to and outside the works boundary (to safeguard habitats and any potential protected species):
    - a. no tracking of vehicles;
    - b. no storing of vehicles, equipment, soils, materials, spoils or waste;
    - c. no storing of oils, fuels or chemicals; and
    - d. no excavations, piling or tunnelling.

### *Breeding and wintering birds – The Mole and Quay*

- 4.6 All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). The species-poor semi-improved neutral grassland throughout the Mole is likely to support a range of common breeding bird species.
- 4.7 The proposals will likely result in the loss of this habitat and where clearance cannot be avoided, this must be carried out between September to February inclusive, to avoid any potential offences relating to breeding birds during their main bird breeding season.

- 4.8 If site clearance during the breeding season is unavoidable, then potential nesting habitat must be inspected by a suitably experienced ecologist no more than 48 hours before work commences to identify active birds' nests. Should they be present, the nest and a suitable buffer of habitat around it must be retained until the young have left the nest.
- 4.9 No specific surveys are required for wintering birds as only common species are likely to be present at both the Mole and the Quay; however, there is likely to be loss of habitat as a result of the future development.
- 4.10 Future proposals for the Sites should consider incorporation of a range of habitats suitable for wintering and breeding birds from the outset.

### *Reptiles – The Mole*

- 4.11 All species of reptile are protected from killing or injury under the Wildlife and Countryside Act 1981 (as amended).
- 4.12 Habitats at the Mole with potential to support reptiles were restricted to the areas of species-poor semi-improved grassland and scrub. Due to the lack of connectivity, any populations are likely to be limited to a small number of individuals as an isolated population. As such, it is recommended that precautionary working methods are undertaken to avoid causing harm to reptiles, should they be present. Methods to be adhered to should be provided in a Precautionary Working Method Statement (PWMS) in advance of works. Such methods are summarised here but full details should be provided in the PWMS:
- *Timing:* vegetation clearance works must be undertaken during the active season for reptiles, which is March-October inclusive (dependent on local weather conditions);
  - *Toolbox talk:* given to site contractors by a suitably experienced ecologist in advance of works regarding the potential presence of reptiles and the precautionary working methods to be undertaken;
  - *Site walkover and fingertip search:* to be undertaken by the ecologist immediately prior to any vegetation clearance works. This will include checking and overturning any potential refuges and moving them away from the clearance area;
  - *Vegetation clearance – stage 1:* under the supervision of the ecologist; to comprise the clearance of vegetation to above ground level, to a minimum height of 10 centimetres in a westerly direction, starting in the east. This will encourage any animals present to be displaced to the west.

- *Vegetation clearance – stage 2:* after at least 24 hours, vegetation clearance to ground level will be undertaken in the same direction. After another 24 hours, the vegetation can be stripped to the topsoil. At all times, care must be taken to ensure that any plant machinery does not track on any habitat that has not first been cleared.
- *Presence of reptiles:* in the event that reptiles are encountered, works should stop immediately and advice should be sought from the ecologist before proceeding.
- *Spoil removal/storage:* Any spoil created from vegetation clearance, should be removed immediately from site, to avoid creating habitat piles that are attractive to reptiles. Where this is not possible, spoil should be placed on pallets to raise them from the ground.
- *Other species:* Any clearance undertaken between March and August of vegetation that may be suitable for breeding birds, must be preceded by a nesting bird check to identify any active bird nests which may be present.

#### *Protected plant species - the Mole and Quay*

- 4.13 Rough marsh-mallow is protected under the Wildlife and Countryside Act 1981 (as amended) and perennial centauray are listed as an SPI and on the LBAP, as well as other protected and vulnerable plant species.
- 4.14 These species have been recorded very close to both sites. Therefore, further survey is recommended for these species, as detailed below in Table 4.1. The results of the surveys will inform any mitigation measures appropriate to the scale and nature of impacts identified.

#### *Marine Biodiversity – The Mole and The Quay*

- 4.15 Certain species of marine fish and mammals identified on the data search are protected by the Wildlife and Countryside Act 1981 (as amended) and are also listed on the local BAP for the Vale of Glamorgan.
- 4.16 Due to the development proposed at the Sites, a Construction Environment Management Plan (CEMP) in line with BS42020:2013 should be implemented before work is due to commence, focusing on avoidance of water pollution.

#### *Other protected species*

- 4.17 In the unlikely event that any other protected species are found during site clearance or construction, all works must stop immediately and advice sought from a suitably qualified ecologist on how to proceed.

#### FURTHER SURVEY REQUIREMENTS

- 4.18 Table 4.1 lists further survey requirements as recommended in the constraints section above.

**Table 4.1: Further survey requirements**

Species/ Habitat	Survey Requirement	Number of surveys and seasonal considerations
Protected plant species	To determine whether protected plants are present within the Mole and the Quay.	Surveys for these species should be ideally carried out between June and August by a suitably experienced botanist.

## OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

- 4.19 Planning policy at the national and local level encourages inclusion of ecological enhancements in development projects. Ecological enhancements can also contribute to green infrastructure and ecosystem services such as storm water attenuation and reducing the urban heat island effect. The following measures would be suitable for integration into the sites' design but would require a more detailed design to successfully implement. They may also contribute towards achieving net gains in biodiversity, due to be made mandatory by the Government in due course.

### *Wildlife planting*

- 4.20 Wildlife planting should be integral to the soft landscape plans and should include native species and/or species of recognised wildlife value<sup>12</sup>. The use of nectar-rich and berry producing plants will attract a wider range of invertebrates, birds and mammals and continue to accommodate those already recorded at the site. Trees should also be provided and can be under-planted to improve structure and cover for wildlife.

### *Biodiverse roof*

- 4.21 Further ecological enhancement could be achieved through creation of new biodiverse roofs which could include wildflowers and invertebrate boxes. Sections of roof could incorporate plants which typically grow within the surrounding areas of the site which are pollen and nectar rich. These features could provide food and habitat for many invertebrates, including LBAP and SPI species of butterfly, moth and bee.

### *Provision of bird nesting opportunities*

- 4.22 The provision of bird boxes on new buildings would be appropriate at this site. Many different designs are available including boxes to support species such as swift *Apus apus* and house martin *Delichon urbica*. The installation of bird boxes, if required, should be 4.5m from ground level and away from any cables or railings to prevent opportunistic predation.

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<sup>12</sup> For example The Royal Horticultural Society (RHS) Perfect for Pollinators Scheme <https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators> and the joint RHS/Wildlife Trust's Gardening With Wildlife In Mind Database <http://www.joyofplants.com/wildlife/home.php>

### *Provision of bat roosting opportunities*

- 4.23 The sites' importance for bats could be enhanced by installing bat boxes, bat tubes, or integrated bat bricks within new building structures. These products are available from recognised manufacturers such as: Bird Brick Houses, The Nest Box Company, Schwegler, Habibat, Causa and Vincent.
- 4.24 Bat tubes, bat bricks or bat boxes should be located at least 5m above ground level facing south-east – south-west to provide roosting opportunities during the active season. There should be clear flight paths to these artificial roosting features and they should not be directly lit by artificial lighting. Woodcrete designs are preferable as they are long lasting compared to wooden boxes and insulate occupants from extremes of temperature and condensation.

### *Habitat provision for invertebrates*

- 4.25 The provision of log piles on site will provide shelter for a range of invertebrates, as well as function as hibernation sites. These features should be located in relatively undisturbed areas, and log piles could be placed beneath newly created hedgerows. An increase in invertebrate numbers and diversity, will also benefit foraging bats and birds.

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## Appendix 1: Site Map

Figure 1a: Habitat Map – The Mole

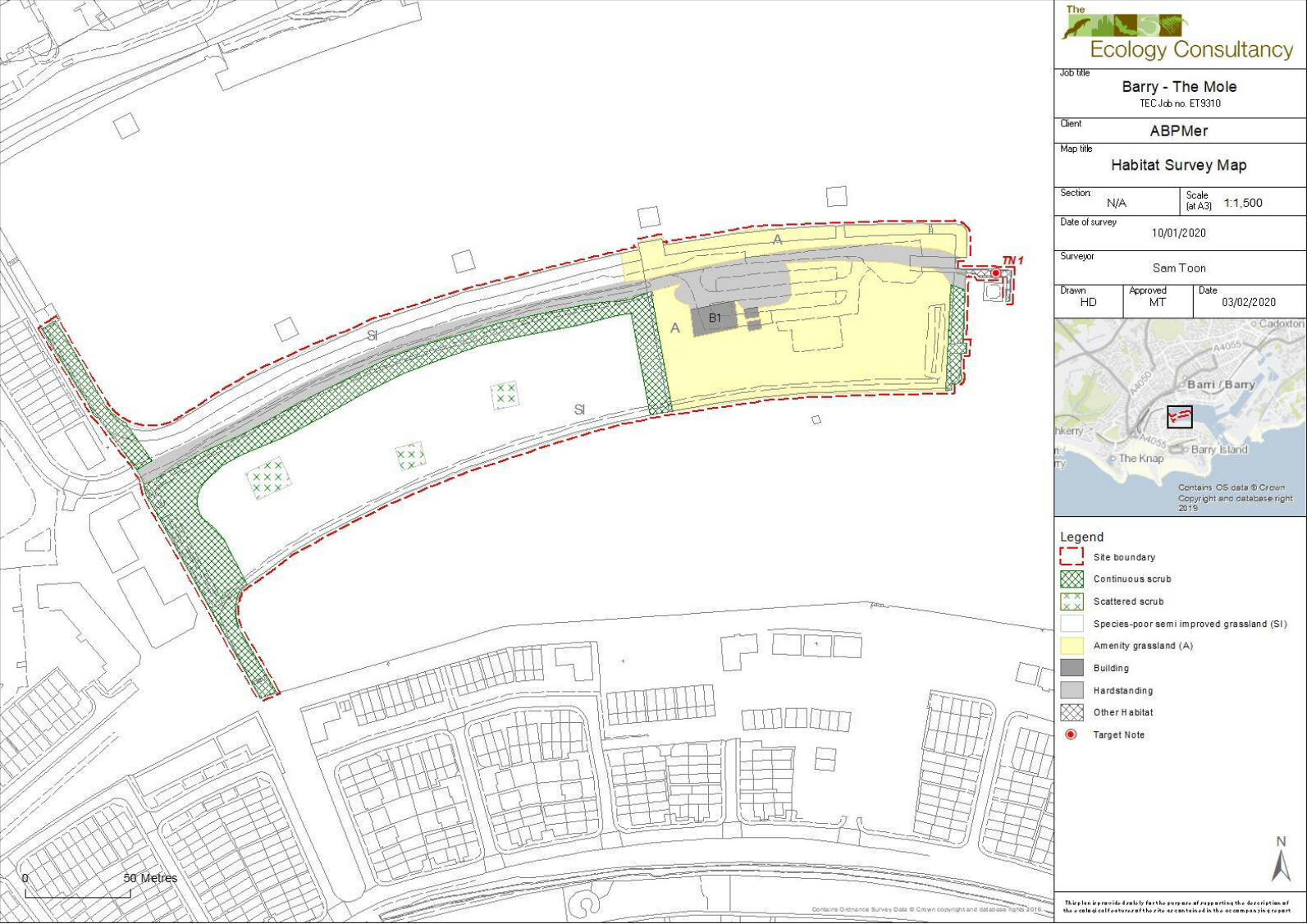
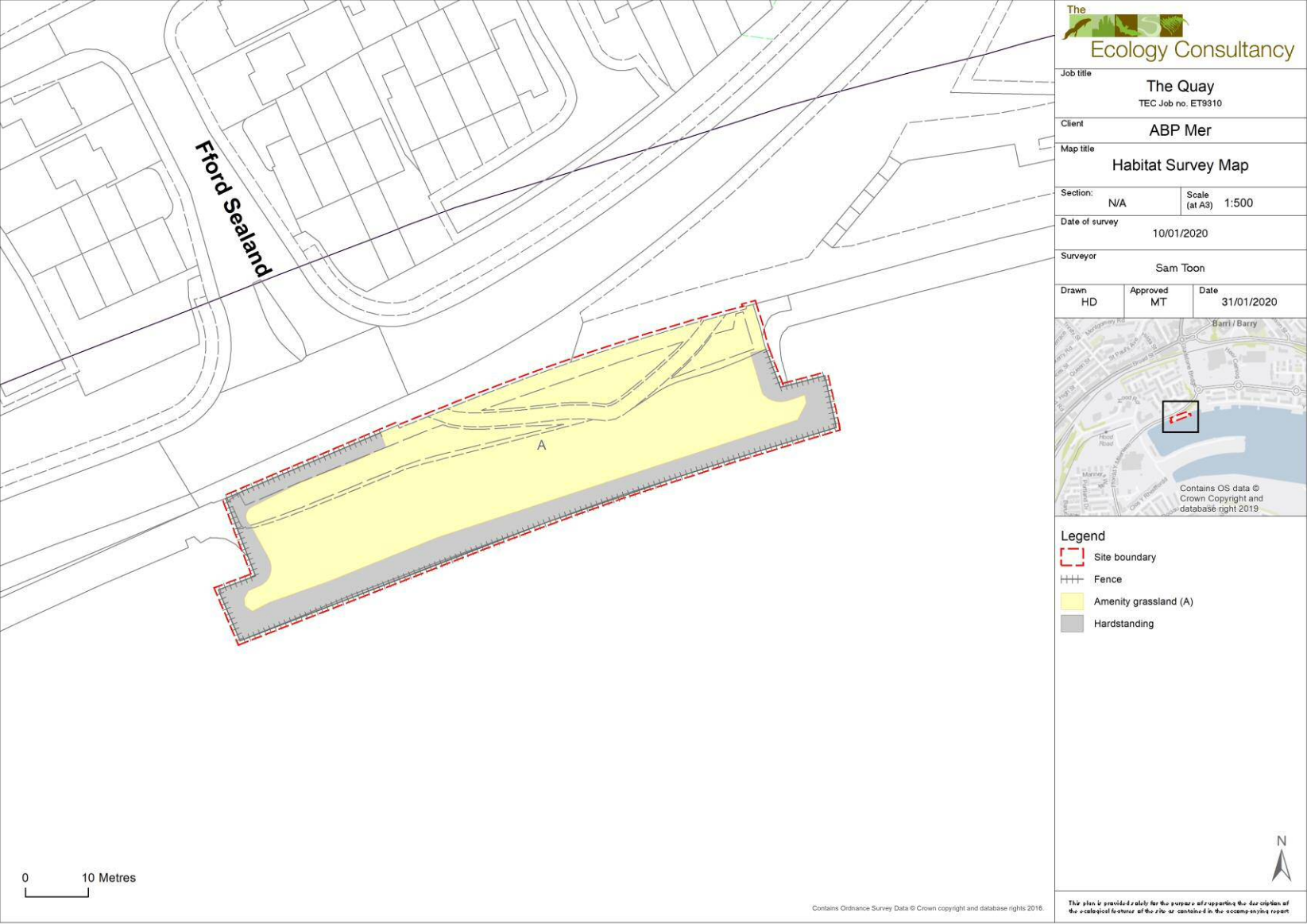


Figure 1b: Habitat Map – The Quay



## Appendix 2: Photographs

**Photograph 1** - Grassland with scattered scrub (The Mole)



**Photograph 2** - Palisade fencing separating water activities centre from the rest of the site (The Mole)



**Photograph 3** - Area of amenity grassland showing damaged area due to public activity (The Quay)



**Photograph 4** - Area of amenity grassland showing topography, perimeter fence and artificial lighting (The Quay)



**Photograph 5** - Gaps in the roof lining provide negligible opportunities for bat roosts during summer (The Mole)



**Photograph 6** - Grassland and scrub showing potential for nesting birds



## Appendix 3: Plant Species List

**Plant Species List for The Mole, Barry compiled from Phase 1 habitat survey carried out on the 10 January 2020.**

Scientific nomenclature and common names for vascular plants follow Stace (2019). Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA.

**Abundance was estimated using the DAFOR scale and additional notes taken as follows:**

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally

Scientific Name	Common Name	Abundance
<i>Petasites fragrans</i>	Winter heliotrope	O
<i>Dipsacus fullonum</i>	Common teasel	F
<i>Ranunculus repens</i>	Creeping buttercup	R
<i>Ulex europaeus</i>	Common gorse	O
<i>Buddleia</i> sp.	Buddleia	F
<i>Sanguinaria canadensis</i>	Bloodwort	R
<i>Cirsium arvense</i>	Creeping thistle	O
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Prunus spinosa</i>	Blackthorn	R
<i>Vicia sativa</i>	Common vetch	A
<i>Rosa</i> sp.	Rose	O
<i>Sphagnum</i> sp.	Sphagnum moss	A
<i>Helminthotheca echoides</i>	Bristly ox tongue	R
<i>Lolium perenne</i>	Perennial ryegrass	D
<i>Galium aparine</i>	Common cleavers	R
<i>Ammophila arenaria</i>	European marram grass	R
<i>Anthriscus sylvestris</i>	Cow parsley	O
<i>Trifolium suffocatum</i>	Suffocated clover	R
<i>Rosa canina</i>	Dog rose	R

**Plant Species List for The Quay, Barry compiled from Phase 1 habitat survey carried out on the 10 January 2020.**

Scientific nomenclature and common names for vascular plants follow Stace (2019). Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA.

**Abundance was estimated using the DAFOR scale and additional notes taken as follows:**

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally

Scientific Name	Common Name	Abundance
<i>Bellis perennis</i>	Daisy	F
<i>Geranium rotundifolium</i>	Round-leaved cranes bill	F
<i>Jacobaea vulgaris</i>	Common ragwort	O
<i>Taraxacum officinale</i>	Dandelion	O
<i>Trifolium</i> sp.	Clover	O
<i>Sanguinaria canadensis</i>	Bloodwort	R
<i>Sphagnum</i> sp.	Sphagnum moss	A
<i>Festuca rubra</i>	Red fescue grass	D

## Appendix 4: Target Notes

Target note (TN)	Description
1	Wooden jetty at the far east of the mole. No JNCC code to categorise this habitat type, added as target note

## Appendix 5: Legislation and Planning Policy

**Important notice:** This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

## **A. NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS**

### **Statutory Designations: National**

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory **Sites of Special Scientific Interest** (SSSI) under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as **National Nature Reserves** which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSI have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of **Limestone Pavement Orders**, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of **Marine Nature Reserves**, for which byelaws must be made to protect them.

### **Statutory Designations: International**

**Special Protection Areas** (SPAs), together with **Special Areas of Conservation** (SACs) form the **Natura 2000** network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2017 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12 200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and

Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12nm are protected under The Conservation of Habitats & Species Regulations 2017 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12 200 nm).

**Ramsar** sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSI) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

## **B NATIONAL LEGISLATION AFFORDED TO SPECIES**

The objective of the EC Habitats Directive<sup>13</sup> is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

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<sup>13</sup> Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on [www.opsi.gov.uk](http://www.opsi.gov.uk). Key amendments have been made through the Countryside and Rights of Way (CROW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Countryside and Rights of Way (CROW) Act 2000;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Wild Mammals (Protection) Act 1996; and
- Environment (Wales) Act 2016.

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), [REDACTED] bats, birds, dormouse *Muscardinus avellanarius*, invasive plant species, otter *Lutra lutra*, plants, red squirrel *Sciurus vulgaris*, water vole *Arvicola amphibius* and white clawed crayfish *Austropotamobius pallipes*.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2017 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term ‘deliberate’ is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2017 (as amended) does not define the act of ‘migration’ and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three ‘tests’: i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

### Herpetofauna (Amphibians and Reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:
  - a) to impair their ability:
    - (i) to survive, breed, or reproduce, or to rear or nurture young;
    - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
  - b) to affect significantly the local distribution or abundance of the species
- Deliberate taking or destroying of the eggs of a Schedule 2 species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Species such as the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale.

#### *How is the legislation pertaining to herpetofauna liable to affect development works?*

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation Habitats and Species Regulations 2010 (as amended). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

#### **Birds**

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it 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;
- Intentionally take or destroy an egg of any wild bird:
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;

- Intentional or reckless disturbance of dependent young of such a bird.

#### *How is the legislation pertaining to birds liable to affect development works?*

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird breeding season which typically runs from March to August<sup>14</sup>. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the breeding season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

#### *Protected Plant Species*

Schedule 8 lists plant species that are protected under Section 13. Section 13 protects plants from picking and sale of plants or parts of plants listed in Schedule 8.

- intentional picking, uprooting or destruction (Section 13 1a)
- selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a);
- advertising (any of these) for buying or selling (Section 13 2b).

#### *How is the legislation pertaining to protected plants liable to affect development works?*

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural Resources Wales) will be required for works liable to destroy or uproot a schedule 1 plant species. The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

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<sup>14</sup> It should be noted that this is the main breeding period. Breeding activity may occur outwith this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

## Environment (Wales) Act (2016)

The Environment (Wales) Act came into force on the 21 March 2016. Section 7 of the Act requires the Welsh Assembly to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

In compliance with Section 7 of the Act, the National Assembly for Wales has published a list of species and habitats considered to be of principal importance for conserving biodiversity in Wales under the UK Post-2010 Biodiversity Framework. This section of the Act replaces the duty originally outlined in Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 for Wales. There are 53 habitats and 557 species and four groups/assemblages of species. The list is used to guide planning authorities in implementing their duty under the Environment (Wales) Act.

## C NATIONAL PLANNING POLICY

### Planning Policy Wales

Planning Policy Wales (PPW) (2018) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs). PPW, Ministerial Interim Planning Policy Statements (MIPPS), the TANs and circulars together comprise national planning policy to which local planning authorities in Wales must have regard in the preparation of development plans.

Technical Advice Note (TAN) 5 provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. TAN 5 brings together advice on sources of legislation relevant to various nature conservation topics which may be encountered by local planning authorities. Chapter 2 sets out the key principles of planning for nature conservation.

The TAN provides advice for local planning authorities on:

- The key principles of positive planning for nature conservation;
- Nature conservation and Local Development Plans;
- Nature conservation in development management procedures;
- Development affecting protected internationally and nationally designated sites and habitats; and
- Development affecting protected and priority habitats and species.

## D LOCAL PLANNING POLICY

The Vale of Glamorgan Planning Policy (adopted June 2017) is the City Council's framework for local development and deals with matters of strategic importance. The relevant policies within this document are detailed below:

*Policy MG21: Sites of importance for nature conservation, regionally important geological and geomorphological sites and priority habitats and species*

**6.134** - The Council will produce Supplementary Planning Guidance on 'Biodiversity and Development' to support these policies and provide advice for developers on the Council's approach to biodiversity issues.

*Policy MD9 – Promoting Biodiversity*

**7.51** - The biodiversity value of a proposed development site should be established at the earliest opportunity. Biodiversity value of sites should be assessed in national and local contexts. By virtue of their designation, internationally and nationally designated sites have the highest conservation value. Other sites such as SINCs or those sites that support a priority habitat or species should be assessed individually but would likely be of lower conservation value.

**7.54** - Where a site has biodiversity value, and where the development will be likely to have an adverse impact on biodiversity, the need for development must be weighed against the biodiversity value of the proposed development site. Where a development will have an adverse impact on the biodiversity value of a site, the development must demonstrate that the need for the development clearly outweighs the biodiversity value of the site.

**7.55** - Developers must demonstrate what measures have been taken to avoid an adverse impact on biodiversity and what mitigation measures will be undertaken to minimise the impact on biodiversity. Where reasonable avoidance measures and mitigation are not sufficient in minimising an adverse impact, any residual impact should be addressed by appropriate and proportionate compensation measures. Compensation should ideally be located as close as possible to the original site and be on a like-for-like basis. Mitigation measures and compensation sites should be chosen so as to maintain biodiversity features or resources.

7.56 - It is nearly always possible to provide biodiversity enhancement on development sites. Levels of enhancement should be commensurate with the level of adverse impact and the scale of development. Mitigation features that can be included could include: small animal underpasses, bird boxes on new build, vegetated dark flight corridors, ponds, hedgerows, native species in planting schemes, newt friendly drainage. These features not only mitigate and enhance, but also significantly contribute towards sustainability and natural resource planning; ensuring that new developments in the Vale are “future-proof” allowing for migration and colonisation in response to climate change.

## E REGIONAL AND LOCAL BAPS

Many local authorities in the UK have also produced a local Biodiversity Action Plan (LBAP) at the County or District level. The Vale of Glamorgan Biodiversity Action Plan identifies seven Priority Habitats. Specific Species Action Plans have been written for 13 species: Spiny dogfish *Squalus acanthias*, ling *Molva molva*, red hemp-nettle *Galeopsis angustifolia*, fulmar *Fulmarus glacialis*, true service tree *Sorbus domestica*, house sparrow *Passer domesticus*, green winged orchid *Orchis morio*, cuckoo *Cuculus canorus*, adder *Vipera berus*, grasshopper warbler *Locustella naevia*, dormouse *Muscardinus avellanarius*, lesser spotted woodpecker *Dendrocopus minor*, marsh cinquefoil *comarum palustre*, Cetti's warbler *Cettia cetti*, river water-crowfoot *Ranunculus fluitans*, peregrine falcon *Falco peregrinus* and the common toad *Bufo bufo*.



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