Boyer Planning

Proposed Celsa Shredder
Rover Way, Cardiff

Preliminary Ecological Appraisal

April 2022

Sturgess Ecology

Contents

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Cover photographs: Typical views across the Celsa site.

This document has been produced for Boyer Planning on behalf of Celsa, by:

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1. Introduction

Boyer Planning, on behalf of Celsa, has appointed Sturgess Ecology to undertake a Preliminary Ecological Assessment (PEA) of land at Rover Way, Cardiff (approximate grid reference ST214763). The proposed site lies to the south-east of Rover Way, opposite the Celsa Steelworks and north of Cardiff Waste Water Treatment and Green Energy. The land to the east of the site is a former fragmentation waste tip that has been capped with soil and used by Cardiff Council as a mini-bike track for the last few years.

The survey is required to support a planning application for a new metal shredding facility and associated access road.

The broad objectives of the PEA study were as follows:

1. To review existing ecological data for the site and its immediate surroundings;
2. To carry out an 'extended Phase 1 Habitat Survey' to describe the current condition of the habitats, and record protected and notable species (or potential habitat for them);
3. To assess the nature conservation significance of the species and habitats, identify any further survey requirements, make recommendations to inform the design and construction process, and identify potential ecological mitigation measures;
4. To make recommendations for environmental enhancements or opportunities.

The boundary of the PEA study area is outlined in red in figure 1.

Figure 1. Study area boundary with aerial background view

The survey and assessment were undertaken by Dr Peter Sturgess CEnv MCIEEM and followed the general principles for PEA set out by the Chartered Institute for Ecology and Environmental Management[1].

2. Existing ecological data

2.1 Methods

The objectives for the data search were to gather and review existing information on wildlife within the study area and its immediate surroundings, and to highlight any biodiversity information that might be relevant to the current proposal.

A data search was commissioned from the South-East Wales Biodiversity Records Centre (SEWBReC) (data search ref 0223-016). This requested data on protected and priority species and other species of nature conservation significance within 1km of the centre of the PEA study area.

The presence of statutory protected sites within 1km of the site was investigated through the Multi-Agency Geographic Information for the Countryside web-site (MAGIC.defra.gov.uk) and Natural Resources Wales web-site. Information on local wildlife sites was obtained through the SEWBReC data search.

2.2 Protected sites

There are no statutory protected nature conservation sites within the study area itself, but there are several within 1km of it. The most important of these is the Severn Estuary, which lies 215m east of the study area at its closest point. The estuary is subject to multiple designations including Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar Site.

Information on the Severn Estuary protected site was obtained through the NRW and JNCC web-sites. The SPA summary description from the JNCC web-site is as follows:

> *"The Severn Estuary is located between Wales and England in south-west Britain. It is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The seabed is rock and gravel with sub-tidal sandbanks. The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have the second- highest tidal range in the world (after the Bay of Fundy in 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. A further consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK. The site is of importance during the spring and autumn migration periods for waders moving up the west coast of Britain, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders."*

SPA qualifying features include the overwintering populations of Bewick's Swan, Curlew, Dunlin, Pintail, Redshank and Shelduck. It also hosts SPA qualifying numbers of Ringed Plover on passage. The estuary also meets the SPA qualifying criterion of being a wetland of

[1] CIEEM (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute for Ecology and Environmental Management, Winchester.

international importance which regularly supports at least 20,000 waterfowl, summarised as follows:

> *"Over winter, the area regularly supports 93,986 individual waterfowl… including: Gadwall, Shelduck, Pintail, Dunlin, Curlew, Redshank, Bewick's Swan, Wigeon, Lapwing, Teal, Mallard, Shoveler, Pochard, Tufted Duck, Grey Plover, White-fronted Goose and Whimbrel."*

The Severn Estuary SAC selection features include the following:

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Atlantic salt meadows
- Sandbanks which are slightly covered by sea-water all the time
- Sea Lamprey
- River Lamprey
- Twaite Shad.

The Severn Estuary is designated as a Ramsar site (under the International Convention on Wetlands of International Importance especially as Waterfowl Habitat). Several of the qualifying criteria are the same as for the SPA and SAC. Qualifying features include the following:

- Immense tidal range, affecting the physical environment and biological communities.
- Unusual estuarine communities, reduced species diversity and high productivity. The high tidal range leads to strong tidal streams and high turbidity, producing communities characteristic of the extreme physical conditions of liquid mud and tide swept sand and rock.
- Important for the run of migratory fish, including Salmon, Sea Trout, Sea Lamprey, River Lamprey, Allis Shad, Twaite Shad and Eel.
- The fish assemblage of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded.
- Regularly supporting internationally important populations (1% or more) of waterfowl species in winter, including Bewick's Swan, European White-fronted Goose, Dunlin, Redshank, Shelduck and Gadwall.
- Regularly supporting internationally important populations of Ringed Plover (spring/autumn), Eurasian Teal (winter), Northern Pintail (winter), Lesser Black-backed Gull (breeding).
- Important for migratory birds during passage periods in spring and autumn, including nationally important populations of Ringed Plover, Dunlin, Whimbrel and Redshank.
- Regularly supporting over 20,000 waterfowl in winter.
- Supports a waterfowl assemblage of international importance.
- Nationally important wintering populations of: Wigeon, Teal, Pintail, Pochard, Tufted Duck, Ringed Plover, Grey Plover, Curlew and Spotted Redshank. Also, nationally important breeding population of Lesser Black-backed Gull.

There is a high degree of overlap between the Severn Estuary SSSI features and the international site designations, so the SSSI is not discussed further here.

The only other SSSI within 2km of the site is the Gwent Levels Rumney and Peterstone SSSI. This lies approximately 1.5km north-west of the site, east of the Rhymney estuary. This is one of six Gwent Levels SSSIs between Cardiff and Chepstow. The levels are made up of low-lying fields which are drained by an extensive network of drainage ditches. The nature conservation interest in the Gwent Levels is primarily associated with the ditches, which support a rich diversity of plants and invertebrates, many of which are nationally rare or notable. The hedgerows and flower-rich reen banks also provide valuable habitat for invertebrates.

The closest Site of Importance for Nature Conservation (SINC) is Pengam Moors, which lies approximately 100m to the north-west at its closest point, on the north side of Rover Way. Pengam Moors SINC is described as artificial habitat with strong maritime influences and a network of drainage channels, with the locally rare plants Sea Clover and Brackish Water Crowfoot. The Tidal Sidings and Cardiff Heliport Fields SINCs both lie approximately 800m south-west of the study area, beyond the Waste Water Treatment Works. They are both areas of open mosaic habitat on former rail sidings that are developing a mix of calcareous and maritime grassland and scrub, and include locally uncommon plants such as Meadow Crane's-bill, Bee Orchid, Grass Vetchling and Yellow-wort. The River Rhymney and Lamby Salt Marsh SINCs lie approximately 1km north-west of the site at their closest points. The mouth of the Rhymney is associated with salt marsh vegetation including a number of locally notable species, and the river is important for migratory fish, Otters and wildfowl.

The whole of the land area within 1km of the site lies within the South and West Wales B-Lines initiative. This non-statutory designation is part of a national project recently introduced by Buglife and its partners to prioritise conservation efforts for pollinators. The Buglife rationale for inclusion of docks and steelworks areas such as are found at Rover Way, states:

> *"The rich industrial past and present of South and West Wales has given rise to a range of brownfield sites such as spoil tips, oil refineries, docks, and steel works. Brownfield sites often support mosaics of habitats and are flower rich – perfect for our pollinators. These types of sites play an important role within the B-Lines of South and West Wales."*

The locations of the protected areas in relation to the current 1km radius study area are shown in Figure 2 (based on image from SEWBReC data search).

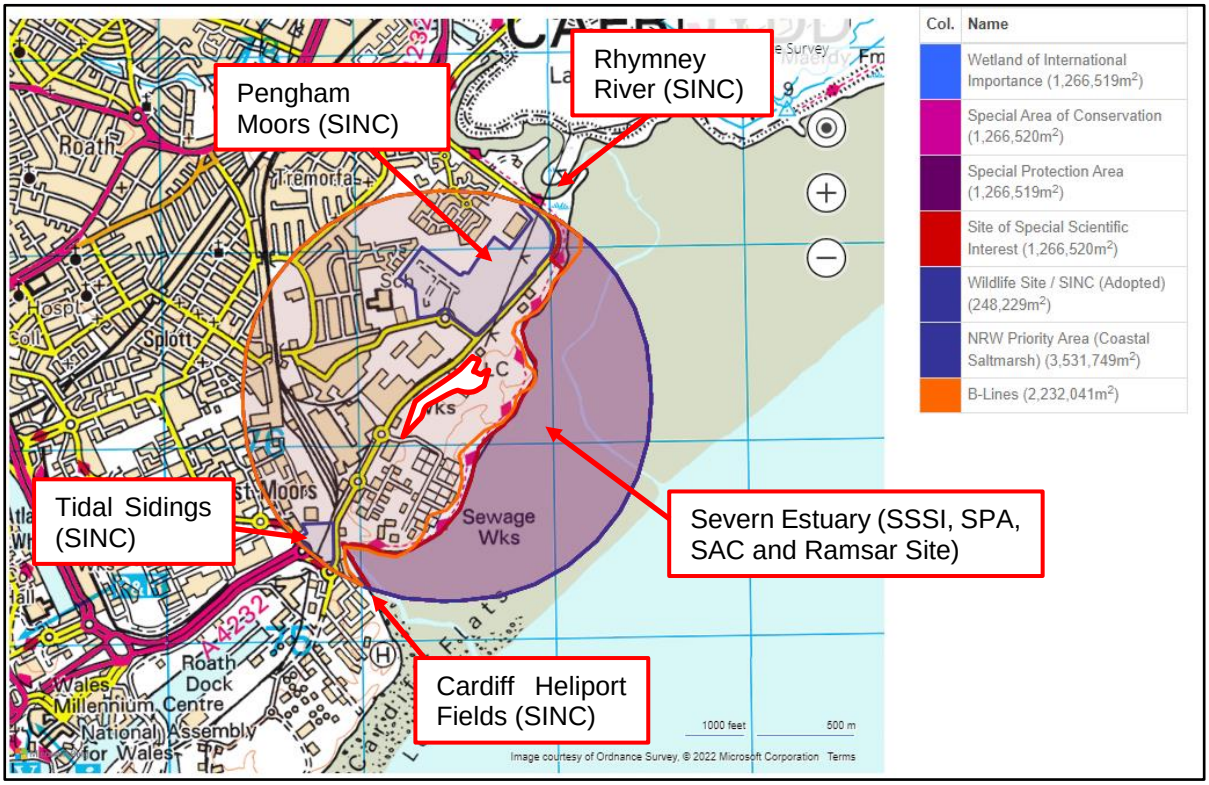

Figure 2. Sites of Importance for Nature Conservation within SEWBReC search area

2.3 Species records

The SEWBReC data search produced 1,233 species records. A summary species list is presented in Appendix 1. A high proportion of the records were of birds, particularly species recorded along the coast. There were also a surprising number of records from more than 50

years ago, of species that may no longer occur in the area. Some of the SEWBReC data was from beyond the 1km search buffer, included to cover protected species known to be highly mobile, such as birds and bats. Some of the wider records have also been included in the search because they have been submitted on a 1km or 4km grid square basis, and in some cases these were clearly recorded from more than 1km away.

The search found no species records from within the proposed work site, but there were several from the adjacent land on the former fragmentation waste tip, along the foreshore and from Rover Way. The majority of these were of birds, plants and insects. The most relevant records are discussed in the assessment section of this document.

3. Habitat survey

3.1 Survey method

The habitat survey was carried out on 13 April 2022.

The objectives for the study were:

- To broadly describe the site using Phase 1 habitat survey methods.
- To compile a preliminary list of plant species for the site.
- To record any observations of protected or notable animal species, or habitats with potential for their occurrence.

The survey was undertaken using a simple walk-through method. Habitats were mapped by eye onto an aerial photograph base. The mapping was based on standard JNCC mapping conventions[2], but in greater detail to produce an 'extended Phase 1 habitat survey'.

Plant and animal species were recorded as they were seen, noting the habitats they were recorded in. The species list from the survey is presented as Appendix 2. This includes a few species that were noted immediately outside of the study area boundary.

The weather during the survey was overcast with occasional light showers. However, given the relatively small amount of vegetation on the site the weather is unlikely to have significantly affected the overall assessment.

April is relatively early in the fieldwork season, so some species might not have been visible or identifiable at the time of the survey (e.g. late-flowering plants).

3.2 Habitat survey findings

The habitat plan is presented as Figure 3. Specific habitats and areas within the site are described below by Target Notes (TN1 to 15). Each Target Note includes a brief description of the habitat and the main plant species present, and a photograph of the main features. To avoid over-crowding, some minor habitat features are not shown on the map.

Habitat features have been plotted by eye. Small-scale variation has been simplified for mapping purposes, and the habitat plan should only be considered approximate. Individual heaps of slag and metal waste have not been shown as they are generally unvegetated and are subject to constant change at this site.

[2] JNCC (2010). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough.

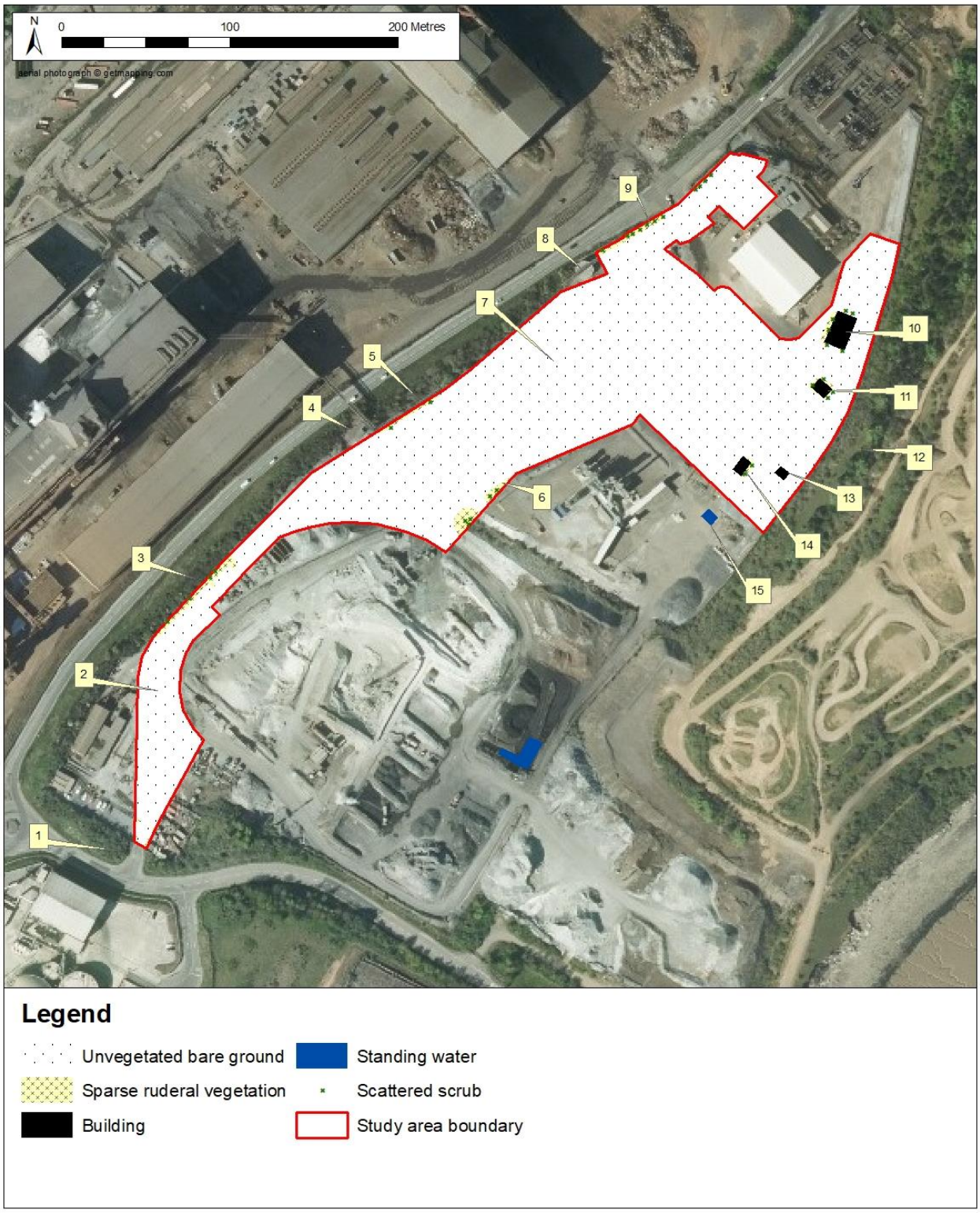

Figure 3. Habitat survey plan

Table 1. Habitat Survey Target Notes

TN	Description/ photographs
1	Planting at western entrance (outside site boundary). A mix of ornamental shrubs either side of the gate, mixed with self-sown scrub. The canopy is very dense and there is virtually no ground flora. Shrubs include Butterfly Bush, Bramble, Hawthorn, Dog Rose, Flowering Currant, Oregon Grape, Broad-leaved Oleaster, David Viburnum, Italian Alder, Laurustinus, Red-osier Dogwood and Darwin's Barberry. Ruderals and grassland plants occur at the fringes, especially where there has been recent disturbance along the edge of the road. Plants here include Herb Robert, Hoary Mustard, Red Fescue, Compact Brome, Ribwort Plantain, Nipplewort, Narrow-leaved Ragwort, Daisy, Ox-eye Daisy, Bilbao Fleabane, Field Madder, White Stonecrop, Cut-leaved Crane's-bill, Prickly Ox-tongue, Scarlet Pimpernel, Common Mouse-ear, Lesser Swine-cress, Red Dead-nettle, Common Vetch, Lesser Celandine, Dandelion and Fennel.  
2	Track through asphalt yard. A largely unvegetated area used by lorry traffic. The ground surface of this area appears to be mostly formed from slag. The area to the north of the main track (pictured) is used for storing various items of equipment and is slightly less disturbed. It supports a sparse ruderal flora that includes Narrow-leaved Ragwort, Groundsel, Herb Robert, Bilbao Fleabane, Hairy Bittercress and sparse mosses. 

TN	Description/ photographs
3	North-western boundary. The boundary is defined by a metal palisade fence, with a mix of scrub and ornamental planting beyond it (outside the site boundary). The scrub mainly comprises Butterfly Bush, with some Hawthorn, Laurustinus, Firethorn and Willow. The fence is mostly bordered by a bank of slag with little vegetation on it. A few lower sections of the boundary support Narrow-leaved Ragwort, Ragwort, Herb Robert, Sticky Mouse-ear, Common Bent, Dandelion, Bilbao Fleabane, Soft Sow-thistle, Creeping Bent and mosses. 
4	Gas substation building (outside site boundary). A small metal-clad building with negligible nature conservation potential. 
5	North-west boundary. The edge of the study area is delimited by an electric cable route which is enclosed by metal barriers and chain-link fencing. The sparse vegetation at the margins includes Butterfly Bush, Bramble, Annual Meadow-grass, Ragwort, narrow-leaved Ragwort, Purple Toadflax, Dandelion, Hoary Mustard, White Mignonette, Lords and Ladies, Common Chickweed and Cleavers. 

TN	Description/ photographs	
6	Planters (mostly just outside the site boundary). A series of concrete pipe sections on a gently sloping bank. The pipes have been turned on their sides, filled with soil and used as ornamental planters. Most of the planters have an ornamental Juniper planted in them. Associated flora includes Broad-leaved Dock, Common Vetch, Yorkshire Fog, Common Vetch, Couch, Scentless Mayweed and Groundsel. The surrounding area supports virtually no vegetation.	
7	Central area. The main part of the study area is used for storage and processing of slag and scrap metal. It supports no vegetated habitat and is of negligible value for nature conservation.	
8	Weighbridge building (just outside study area). A flat-roofed brick/ concrete building with metal cladding below the roof. It appears to have negligible value for nature conservation.	

TN	Description/ photographs
9	Sparse vegetation beside car-park. A narrow strip of grasses and ruderals, with patchy scrub beside the boundary fence. The shrub species includes Butterfly Bush, Gorse, Traveller's Joy, Grey Willow and Ash saplings. Ground flora includes Bilbao Fleabane, Wild Parsnip, Mugwort, Couch, Common Sorrel, Colt's-foot, Tall Melilot, Scentless Mayweed, Narrow-leaved Ragwort, Creeping Thistle, Wild Carrot, Herb Robert, Cleavers, Ragwort, Hoary Mustard, Creeping Cinquefoil, White Mignonette, Creeping Thistle, Hairy Bittercress, Purple Toadflax, Common Chickweed, Greater Plantain and mosses. 
10	Building. A tall steel framed workshop with corrugated metal walls and roof. It has a gently pitched roof and a large open door. There are numerous holes in the walls and the inside is likely to be draughty. The likelihood of bats roosting here seems very low. There are a few ruderal plants (mainly Butterfly Bush) around the base of the wall. 
11	Building. A small building with breeze-block walls and a flat roof, and with a metal clad open-sided shed on its north-east side. The inside of the roof is made of wooden beams and plywood boards. There is at least one old bird nest inside the building, on a ledge just below the roof. Sparse ruderals around the building include Butterfly Bush, Shining Crane's-bill, Herb Robert, Nettle and Hairy Bittercress. 

TN	Description/ photographs	
12	Grassland and scrub on former fragmentation waste tip (outside study area boundary, not accessed). A north-west-facing slope patchily covered by Butterfly Bush, Willow, Hawthorn, Bramble and Corsican Pine trees, with a sparse grassland ground flora that comprises mainly mosses. Associated species include Bilbao Fleabane, Common Vetch, Yorkshire Fog, Cock's-foot, Nettle, Creeping Thistle, Smooth Tare, Ox-eye Daisy, Ragwort, Creeping Cinquefoil and mosses.	
13	Building. A storage shed with walls of breeze-block and cement around the lower parts, and a large steel gate. The gently sloping pitched roof is formed from corrugated steel. The upper parts of the structure are draughty and appear unlikely to support roosting bats.	
14	Building (possibly an old substation). A breeze-block building with a flat roof, and a small, open shed at the north-east side. The building was locked and not accessed, but appears unlikely to support roosting bats. There is Butterfly Bush scrub and ruderal plants around several sides, with associated species including Shining Crane's-bill, Nettle, Perforate St.John's-wort, Dandelion, Hoary Mustard, Ivy-leaved Toadflax and Herb Robert.	

TN	Description/ photographs	
15	Pond (outside study area boundary). A recently constructed pond/ silt-trap, formed from concrete. It has three vertical sides and one sloping side. It appears very inhospitable to wildlife and in its current condition it appears very unlikely to support any species that are significant for nature conservation.	

4. Assessment

The following section assesses the nature conservation value of the habitats and species recorded during the survey and draws on information from the data collation exercise. The main references for the evaluation process are the Wildlife Sites Guidance Wales[3], and the Welsh Government's Environment (Wales) Act 2016 Section 7 lists of habitats and species of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales, and the presence of protected species.

4.1 Overview of habitats

The site supports only sparse and patchy vegetation because of the ongoing operational workings. There are no significant trees or water bodies within the proposed works area, and minimal grassland or scrub available as cover. This means that there are relatively few areas capable of supporting wildlife. The vegetation largely comprises plants that are relatively common and widespread and which are typical of disturbed sites. Much of the site appears inhospitable to animal life and the fauna appears limited to a relatively small number of species that can tolerate high levels of disturbance and venture into the site from adjacent vegetated habitats.

4.2 Plants

The relatively sparse flora mostly consists of common ruderal species, typical of disturbed industrial sites with base-rich substrata.

None of the plants recorded within the site during the preliminary survey are listed as being especially rare within the Wildlife Sites Guidelines. Four uncommon species that are listed as 'Contributory Species' in the guidelines were found close by, but outside of the proposed works area. These include:

- Yellow-wort (*Blackstonia perfoliata*). On old slag pile beyond the southern edge of the study area.

[3] Wales Biodiversity Partnership (2008). Guidelines for the Selection of Wildlife Sites in Wales.

- Round-leaved Crane's-bill (*Geranium rotundifolium*). On old slag pile beyond the southern edge of the study area.
- Bee Orchid (*Ophrys apifera*). Probable basal leaves seen in short grassland near the foreshore (outside Celsa boundary).
- Green Field-speedwell (Veronica agrestis). In disturbed ground near the foreshore (outside Celsa boundary).

It is possible that additional plant species might be confirmed through more detailed investigations and at other times of year. The potential for plants with high nature conservation significance to be found within the study area is low; however, the unusual base-rich nature of the ash and soils around the site could feasibly support species that are uncommon in the locality.

Basal leaves of Yellow-wort on old slag pile (outside study area boundary).

The SEWBReC data included a large number of plant species. Many of these are extinct or very rare in Cardiff today, but the records were collected many years ago when the area looked very different. For example, Field Wormwood, Smooth Rupturewort, Four-leaved Allseed, Various-leaved Pondweed, Suffocated Clover, Deadly Nightshade, Many-stalked Spike-rush, Fringed Rupturewort, Henbane, Sharp-leaved Fluellen, Fen Pondweed, Blunt-leaved Pondweed, Three-lobed Crowfoot, ,Tubular Water-dropwort, Strawberry Clover, Nit-grass, Corncockle, Oak-leaved Goosefoot, Nettle-leaved Goosefoot, Flixweed, Sea Barley, Golden Dock, Fiddle Dock, Night-flowering Catchfly, Lesser Quaking-grass, Sickle-leaved Hare's-ear, Slender Hare's-ear, Small Bur-parsley, Corn Cleavers, Hairy-fruited Cornsalad and Field Gromwell. These would all have high nature conservation value today, but were all recorded prior to 1930. Many of the species would have been more common in those days, and some would have been associated with the former docks and tips that operated in the area then. It is unlikely that these species would have persisted in the area in the absence of suitable habitat.

The more modern plant records included several notable species. Most of these are from sites of known nature conservation value nearby, particularly the SINCs at Pengam Moors and Tidal Sidings, and on saltmarsh habitat near the Rhymney River. A number of locally uncommon species have also been found on land immediately adjacent to the Celsa site, including Viper's-bugloss, Great Lettuce, Hawkweed Oxtongue, Hoary Plantain, Dittander, Hairy St John's-wort and Yellow-wort[4]. These are typical of sites with a high base content soil, and particularly disturbed sites, it is feasible that some of these might also occur in the current study area, at least occasionally in less disturbed areas.

[4] Parc Calon Gwyrdd Limited September 2021. Outline Application for Industrial (B8) Accommodation Land at Rover Way, Cardiff Environmental Statement. Cardiff planning ref 21/02182/MJR.

Several mosses were recorded during the survey, but they were limited to small quantities of common species. However, it is possible that some uncommon moss species associated with the unusual substratum may be present, but the potential occurrence of species with high nature conservation value is very low, given the high levels of disturbance and restricted range of habitats in the study area.

Several non-native plant species were found that can have invasive tendencies in Britain. The only species seen that is included on Schedule 9 of the Wildlife and Countryside Act is Japanese Knotweed, but this was only seen in small quantity outside the study area, on land outside the Celsa land ownership boundary, nearer to the foreshore.

Young leaves of Japanese Knotweed (outside Celsa boundary).

4.3 Lichens

Very few lichens were seen during the survey, and this probably reflects the limited range of stable surfaces available for colonisation, and also the dust associated with the ongoing works. The greatest frequency of lichens seen during the survey were on sheet metal pieces that had been welded to the security fencing at the perimeter. However, none were identified to species, and the potential for any notable species within the study area is considered very low.

Lichens on sheet metal at the site boundary. These are recent colonists and likely to be limited to common species

4.4 Fungi

No fungi were identified during the survey, although this may be partly due to the time of year. The potential for the habitats within the study area to support any fungi of significance for nature conservation is considered very low given the lack of vegetation and ongoing disturbance over most of the site.

4.5 Invertebrates

No invertebrates were recorded during the preliminary survey, but this is partly due to the time of year. The SEWBReC data search confirmed records of several notable invertebrate species. Most of these were of butterflies and moths from nearby SINC sites, and recorded along the foreshore. The records most relevant to the current study are several uncommon bees recorded on the tip to the east of the site in 2017. These included the Section 7 species Brown-banded Carder-bee, as well as other notable species including Red-tailed Cuckoo Bee, Painted Nomad Bee, Chalk Yellow-face Bee and Spined Mason Bee. The Nationally notable Six-belted Clearwing moth was also recorded on this adjacent land. Another Section 7 bee, the Moss Carder Bee has also been recorded at the Cardiff Heliport SINC in 2002 and may still occur in the area. The notable invertebrates included in the SEWBReC data all depend on flower-rich grassland, especially near the coast. Given the lack of this habitat in the Celsa yard it is unlikely that these invertebrates would occur within the proposed works area in its current condition.

4.6 Fish

There are no areas of standing water within the site that are capable of supporting fish.

4.7 Amphibians

No amphibians were seen during the survey and there were no amphibian records produced by the SEWBReC data search. There are no potential breeding sites for amphibians within the study area, and the standing water bodies at TN15 and elsewhere within the Celsa site appear unsuitable for them because they dry out frequently and are likely to have a very high pH due to the slag. The site is not directly linked to any good quality amphibian habitat although some species may be present at Pengam Moors SINC to the north.

The only other pond noted in the wider Celsa yard (outside the study area boundary at ST21427610) is a settlement pond for metal-rich high pH waste from the furnaces. This is regularly disturbed appears extremely unlikely to support amphibians.

4.8 Reptiles

The SEWBReC data only contained two records of reptiles, and neither was especially close to the site. One was of Slow Worms in Splott, approximately 850m north-west from the study area in 2020. The other was of an Adder at Lamby Way in 2000. Both locations are separated from the study area by significant barriers to movement of reptiles, such as roads and built-up areas. The patchy mix of vegetation and bare ground on the former fragmentation waste tip adjacent to the site appears potentially suitable for reptiles, but a 2017 survey of the area found no evidence of their presence[5]. Overall, the lack of cover and vegetation within the study area makes it extremely unlikely that any reptiles would be present.

4.9 Birds

The SEWBReC data search provided a very large number of bird records, which reflects the popularity of the coast as a location for bird watching. The majority of the records were recorded along the foreshore and on the estuary mudflats. As mentioned previously, the Severn Estuary supports bird populations that are nationally and internationally important for nature conservation, particularly overwintering waders and wildfowl. The potential for disturbance effects of the proposed works on birds associated with the Severn Estuary protected area will need to considered, even if there are no direct impacts on the coastal habitats.

There are also data search records of other notable birds such as Black Redstart, Linnet and Skylark using the coastal scrub and grassland near to the site. Nearby records of breeding Kestrel and Barn Owl, mostly from the 1980s and 1990s, may be associated with the steel-works site because there are no other suitable buildings in the area.

The majority of the current study area is devoid of vegetation, water features, or any other habitat that might be especially attractive to birds. It is possible that some birds might use this type of habitat from time to time. For example, birds might nest in the old buildings or marginal scrub. However, the ongoing disturbance probably limits the use of the site by birds to small numbers of common species, and mainly using the scrub and tree-planting around the site margins, although it is also feasible (but very unlikely) that the old workshop (TN10) or other open-fronted buildings could be used as a roost or nest site by Barn Owl or Kestrel.

Old bird nest in roof of building at TN11.

[5] Parc Calon Gwyrdd Limited September 2021. Outline Application for Industrial (B8) Accommodation Land at Rover Way, Cardiff Environmental Statement. Cardiff planning ref 21/02182/MJR.

4.10 Mammals

The only signs of mammals during the habitat survey were of Fox and Rabbit. Both species appear to live outside the project area and just venture into it from time to time. The signs of Rabbits were generally limited to the margins close to areas of scrub.

Several mammal sightings from the nearby area were included in the SEWBReC data, but there were none from within the site. Some of the closest records were of Hedgehog, which is a Section 7 species. There is a record of Otter from the mouth of the Rhymney in 2013: This is protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations and is also a Section 7 species in Wales.

There are several records of bats within the SEWBReC data. The only bat records within the 1km search buffer are for Common Pipistrelle, and these are all from the north side of Rover Way where they are mainly associated with the built up areas. Bat species recorded in the wider area include Soprano Pipistrelle, Nathusius's Pipistrelle, Noctule and Lesser Horseshoe Bat. Bats have a similar level of protection to Otters, but potential roosting sites for them within the proposed works area are limited to the buildings, which appear sub-optimal for bats, and even feeding opportunities for them would be very limited.

Other SEWBReC records of notable mammals from the wider area include Badger, Water Vole, Brown Hare and Grey Seal, but given the unvegetated and disturbed nature of the study area none of these species are considered likely to occur within the site or be affected by the proposals.

Other wild mammals such as Brown Rat probably use the area from time to time. Overall, the study area has negligible nature conservation value for mammals.

5. Ecological constraints and recommendations

The following section summarises potential constraints to the proposed development in relation to the plants and animals found within the site, including protected species. Broad recommendations are provided for ensuring legal compliance.

5.1 Protected sites

The Severn Estuary protected area lies outside of the proposed works so there are unlikely to be any direct impacts on it. However, the bird populations and habitat must also remain protected from indirect effects such as noise, visual impacts and potential pollutants. The planning authority may need to carry out a Habitats Regulations Assessment to clarify whether or not there would be a significant impact in this case, and this may require provision of further information.

The Gwent Levels SSSIs and Cardiff Council SINCs lie sufficiently far from the proposed works that the protected features would be unaffected by them. Even the closest SINC, Pengam Moor, lies outside the construction area.

5.2 Birds

All native wild birds and their nests are protected under the Wildlife and Countryside Act. As such, it is unlawful to damage, destroy or disturb bird nests while they are in use. At this site the only potential for nesting habitat is inside the old buildings and in scrub near the site perimeter. The potential for nests in these locations is very low but cannot be discounted, so if there is any possibility that these would be affected during the nesting season (typically between March and August inclusive) they should be checked for nests by an ecologist before

the work begins. If any nests are present, it may be necessary to delay the work until the young have fledged or the nest has been vacated naturally.

The large shed at TN10 or open building at TN11 could feasibly be used by roosting Barn Owls, although the probability seems low. If either building is likely to require demolition it should first be checked by an ecologist to see if there are any signs of owls (e.g. owl pellets). This could potentially be combined with a bat survey (see below).

5.3 Bats

All species of British bat and their roosts are protected under the Wildlife and Countryside Act 1981, and bats are classified as European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019). This makes it an offence to kill, injure or disturb a bat and to destroy any place used for rest or shelter by a bat.

The potential bat roost features at this site are limited to the buildings at TN10, 11, 13 and 14, although the risk of bats roosting in them appears very low. At present, there are no plans to demolish the buildings, but if this changes the work should not take place until they have been checked for bat roosts by a licensed bat worker, and any mitigation requirements addressed (e.g. timing and method of demolition and provision of replacement roost sites).

6. Possible ecological opportunities

The site has negligible value for nature conservation in its current condition, but the proposed works have potential to incorporate several ecological enhancements. It is recommended that the following should be considered, subject to land ownership and other practical considerations.

- Consideration could be given to retaining some of the land at the site margins in a less disturbed condition, to allow grassland and scrub vegetation to develop on them. The well-drained and base-rich substratum formed by the slag could potentially support a diverse and interesting flora and fauna. Ideally the vegetation would be cut back periodically, following a management plan, to maintain plant and insect diversity.
- The potential habitat for nesting birds could be improved by installing nest boxes at the site boundary; particularly the eastern boundary, where it adjoins scrub vegetation. Bird nest boxes or bat roosting boxes could also be fitted to the retained old buildings at TN10, 11, 13 or 14.

7. Recommendations for further ecology imput

This survey has provided a broad, preliminary account of the habitats, flora and fauna in the proposed works area, but it should not be regarded as a complete inventory of every species.

It is probably not necessary to carry out any further investigation to inform the planning process, but further ecology input may be helpful in the following situations.

- A PEA is not an assessment of impacts. It is possible that the planning authority may require an Ecological Impact Assessment to support the planning application, even though the potential for an impact seems very low in this case.
- If any of the old buildings have to be demolished, the work should not take place until they have been checked for possible bat roosts by a licensed bat worker, and any mitigation requirements addressed (e.g. timing and method of demolition and provision of replacement roost sites).

- If there are plans to remove any of the old buildings or areas with scrub during bird nesting season (between March and August inclusive), the work should only take place after an ecologist has confirmed that no bird nests are present.
- If any vegetated areas are likely to be affected, staff should be vigilant to check for Japanese Knotweed and other non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act (in case they were not seen during the preliminary survey because it was too early in the year). It is unlawful to cause these species to spread in the wild.
- If the works are delayed for a year or more it would be appropriate to carry out an update ecology survey to check that the current findings remain valid, or to identify any changes in the habitats that require a re-assessment of the ecological constraints.

Appendix 1. Summary of SEWBReC data search

The following table summarises the records obtained through the SEWBReC data search (data search reference 0223-016). The data search was for a 1km search buffer around grid ref ST214762 and included protected and priority species, and other species of conservation concern (including non-native invasive species). NB. Some of the records provided were from more than 1km away from the search area (for mobile species such as bats and many birds, or where the data has been submitted on a 1km or 4km grid square basis).

Scientific Name	Common Name	Latest record	Total Records
VASCULAR PLANTS			
Agrostemma githago	Corncockle	1925	1
Alopecurus bulbosus	Bulbous Foxtail	1988	4
Anacamptis pyramidalis	Pyramidal Orchid	2020	8
Anagallis arvensis subsp. foemina	Blue Pimpernel	1962	3
Anchusa arvensis	Bugloss	1886	1
Apium graveolens	Wild Celery	2001	3
Apium inundatum	Lesser Marshwort	1886	1
Arenaria serpyllifolia subsp. leptoclados	Slender Sandwort	2006	2
Artemisia campestris	Field Wormwood	1876	1
Ascophyllum nodosum	Egg Wrack	2014	1
Atropa belladonna	Deadly Nightshade	1886	1
Ballota nigra	Black Horehound	1993	2
Blackstonia perfoliata	Yellow-wort	2017	10
Brassica oleracea	Wild Cabbage	1994	3
Briza minor	Lesser Quaking-grass	1926	2
Bromus commutatus	Meadow Brome	1997	4
Buddleja davidii	Butterfly-bush	2019	22
Bupleurum falcatum	Sickle-leaved Hare's-ear	1926	3
Bupleurum tenuissimum	Slender Hare's-ear	1926	4
Camelina sativa	Gold-of-pleasure	1936	2
Carex extensa	Long-bracted Sedge	2001	1
Carex riparia	Greater Pond-sedge	2004	2
Catabrosa aquatica	Whorl-grass	1886	2
Caucalis platycarpos	Small Bur-parsley	1926	1
Centaurea calcitrapa	Red Star-thistle	1938	3
Centaurea scabiosa	Greater Knapweed	2006	5
Ceratophyllum demersum	Rigid Hornwort	2001	1
Chenopodium glaucum	Oak-leaved Goosefoot	1925	1
Chenopodium murale	Nettle-leaved Goosefoot	1925	1
Chenopodium urbicum	Upright Goosefoot	1932	2
Chenopodium vulvaria	Stinking Goosefoot	1936	5
Cortaderia selloana	Pampas-grass	2019	2
Cotoneaster horizontalis	Wall Cotoneaster	2017	1
Cotoneaster integrifolius	Entire-leaved Cotoneaster	2017	1
Cynodon dactylon	Bermuda-grass	1973	4
Descurainia sophia	Flixweed	1925	2
Diplotaxis tenuifolia	Perennial Wall-rocket	1997	1
Echium vulgare	Viper's-bugloss	2014	6
Eleocharis multicaulis	Many-stalked Spike-rush	1886	4
Elodea	Waterweed	1973	1
Erysimum cheiranthoides	Treacle-mustard	1936	2
Fallopia japonica	Japanese Knotweed	2019	12
Galium tricornutum	Corn Cleavers	1926	1
Gastridium ventricosum	Nit-grass	1910	2
Gaudinia fragilis	French Oat-grass	1926	1

Scientific Name	Common Name	Latest record	Total Records
Geranium pusillum	Small-flowered Crane's-bill	2017	1
Geranium rotundifolium	Round-leaved Crane's-bill	1886	1
Glebionis segetum	Corn Marigold	1927	1
Heracleum mantegazzianum	Giant Hogweed	2013	1
Herniaria ciliolata	Fringed Rupturewort	1886	1
Herniaria glabra	Smooth Rupturewort	1876	1
Hippophae rhamnoides	Sea-buckthorn	2017	6
Hordeum marinum	Sea Barley	1925	2
Hordeum secalinum	Meadow Barley	2001	1
Hyoscyamus niger	Henbane	1886	1
Hypericum hirsutum	Hairy St John's-wort	2017	1
Jacobaea erucifolia	Hoary Ragwort	2017	6
Kickxia elatine	Sharp-leaved Fluellen	1886	2
Kindbergia praelonga	Common Feather-moss	2017	12
Lactuca virosa	Great Lettuce	2014	1
Lamium amplexicaule	Henbit Dead-nettle	2016	1
Lathyrus aphaca	Yellow Vetchling	1886	2
Lathyrus latifolius	Broad-leaved Everlasting-pea	1997	4
Lathyrus nissolia	Grass Vetchling	2019	4
Lavatera cretica	Smaller Tree-mallow	1929	1
Lemna gibba	Fat Duckweed	2001	1
Lemna minuta	Least Duckweed	2001	1
Lemna trisulca	Ivy-leaved Duckweed	1936	2
Lepidium latifolium	Dittander	2017	7
Leycesteria formosa	Himalayan Honeysuckle	2017	1
Limonium binervosum	Rock Sea-lavender	1994	1
Limonium recurvum	Sea-Lavender	1886	1
Limonium vulgare	Common Sea-lavender	1994	4
Linum bienne	Pale Flax	2020	4
Lithospermum arvense	Field Gromwell	1926	2
Lolium temulentum	Darnel	1936	4
Lotus tenuis	Narrow-leaved Bird's-foot-trefoil	2016	3
Malva arborea	Tree-mallow	1876	1
Malva setigera	Rough Marsh-mallow	1938	6
Medicago arabica	Spotted Medick	1997	3
Medicago polymorpha	Toothed Medick	1936	3
Medicago sativa subsp. falcata	Sickle Medick	1997	2
Misopates orontium	Weasel's-snout	1936	2
Myosotis ramosissima	Early Forget-me-not	2017	2
Myriophyllum spicatum	Spiked Water-milfoil	2004	1
Myriophyllum verticillatum	Whorled Water-milfoil	1886	1
Oenanthe fistulosa	Tubular Water-dropwort	1907	2
Oenanthe lachenalii	Parsley Water-dropwort	2001	1
Ophrys apifera	Bee Orchid	2019	10
Ornithopus pinnatus	Orange Bird's-foot	1927	1
Orobanche elatior	Knapweed Broomrape	2013	1
Orobanche minor	Common Broomrape	2002	7
Papaver bivalve subsp. hybridum	Violet Horned-poppy	1926	2
Papaver hybridum	Rough Poppy	1926	1
Parapholis incurva	Curved Hard-grass	1932	2
Parapholis strigosa	Hard-grass	1994	1
Phleum arenarium	Sand Cat's-tail	1886	1
Picris hieracioides	Hawkweed Oxtongue	2004	3
Plantago media	Hoary Plantain	2013	3

Scientific Name	Common Name	Latest record	Total Records
Polycarpon tetraphyllum	Four-leaved Allseed	1876	1
Polypogon monspeliensis	Annual Beard-grass	1937	3
Porphyra	A red seaweed	2014	1
Potamogeton coloratus	Fen Pondweed	1886	1
Potamogeton gramineus	Various-leaved Pondweed	1876	1
Potamogeton obtusifolius	Blunt-leaved Pondweed	1886	1
Prunus laurocerasus	Cherry Laurel	2017	1
Puccinellia distans	Reflexed Meadow-Grass	1994	2
Ranunculus sardous	Hairy Buttercup	2000	3
Ranunculus tripartitus	Three-lobed Crowfoot	1886	2
Reseda lutea	Wild Mignonette	2006	10
Rhamnus cathartica	Buckthorn	2017	1
Rorippa islandica	Northern Yellow-cress	1934	1
Rosa spinosissima	Burnet Rose	2017	1
Rumex maritimus	Golden Dock	1925	1
Rumex pulcher	Fiddle Dock	1925	2
Sagina maritima	Sea Pearlwort	1969	1
Scirpoides holoschoenus	Round-headed Club-rush	1879	1
Sedum album	White Stonecrop	1997	1
Silaum silaus	Pepper-saxifrage	2001	1
Silene gallica	Small-flowered Catchfly	1938	3
Silene noctiflora	Night-flowering Catchfly	1925	1
Silene uniflora	Sea Campion	2013	2
Sinapis arvensis	Charlock	1997	5
Sison amomum	Stone Parsley	2001	1
Sium latifolium	Greater Water-parsnip	1886	1
Sorghum halepense	Johnson-grass	1937	1
Spartina anglica	Common Cord-grass	2019	3
Spergularia marina	Lesser Sea-spurrey	2001	5
Spergularia media	Greater Sea-spurrey	2001	1
Spiranthes spiralis	Autumn Lady's-tresses	2020	12
Spirodela polyrhiza	Greater Duckweed	2001	2
Symphoricarpos albus	Snowberry	1993	1
Tephroseris integrifolia	Field Fleawort	2013	1
Trifolium fragiferum	Strawberry Clover	1907	3
Trifolium glomeratum	Clustered Clover	1926	1
Trifolium squamosum	Sea Clover	2001	10
Trifolium suffocatum	Suffocated Clover	1876	1
Urtica urens	Small Nettle	1934	1
Valerianella eriocarpa	Hairy-fruited Cornsalad	1929	1
Veronica agrestis	Green Field-speedwell	1994	2
Veronica anagallis-aquatica	Blue Water-Speedwell	1886	1
Vinca major	Greater Periwinkle	2021	3
FUNGI			
Hygrocybe conica	Blackening Waxcap	2020	2
Hygrocybe virginea var. virginea	Snowy Waxcap	1968	1
INVERTEBRATES			
Acronicta rumicis	Knot Grass	2021	4
Acupalpus exiguus	A ground beetle	1890	1
Arctia caja	Garden Tiger	2006	1
Aricia agestis	Brown Argus	2019	4
Austrominius modestus	Modest Barnacle	2002	2
Bembecia ichneumoniformis	Six-belted Clearwing	2017	9
Bombus hortorum	Garden Bumblebee	2017	1
Bombus humilis	Brown-banded Carder-bee	2017	1
Bombus lapidarius	Red-tailed Bumblebee	2021	4

Scientific Name	Common Name	Latest record	Total Records
Bombus lucorum	White-tailed Bumblebee	2021	2
Bombus muscorum	Moss Carder-bee	2002	1
Bombus pascuorum	Common Carder Bee	2021	4
Bombus pratorum	Early Bumblebee	2017	2
Bombus rupestris	Red-tailed (Hill) Cuckoo Bee	2017	1
Bombus terrestris	Buff-tailed Bumblebee	2021	3
Bombus vestalis	Vestal (Southern) Cuckoo Bee	2017	1
Caradrina morpheus	Mottled Rustic	2020	4
Ceramica pisi	Broom Moth	2020	1
Chiasmia clathrata	Latticed Heath	2010	22
Cirrhia icteritia	Sallow	2013	1
Coenonympha pamphilus	Small Heath	2014	35
Conocephalus fuscus	Long-winged Cone-head	2018	3
Cordulegaster boltonii	Golden-ringed Dragonfly	2006	5
Cupido minimus	Small Blue	2018	3
Ennomos fuscantaria	Dusky Thorn	2013	2
Harmonia axyridis	Harlequin Ladybird	2017	3
Hepialus humuli	Ghost Moth	2017	2
Hipparchia semele	Grayling	2018	19
Hippodamia variegata	Adonis' Ladybird	2017	2
Hydraecia micacea	Rosy Rustic	2005	1
Lasiommata megera	Wall	2019	22
Leptophyes punctatissima	Speckled Bush-cricket	2017	1
Leucania comma	Shoulder-striped Wainscot	1999	2
Litoligia literosa	Rosy Minor	2001	1
Lucanus cervus	Stag Beetle	2020	1
Malacosoma neustria	Lackey	2020	2
Melanchra persicariae	Dot Moth	2014	2
Nomada fucata	Painted Nomad Bee	2017	1
Orthetrum cancellatum	Black-tailed Skimmer	2005	2
Orthosia gracilis	Powdered Quaker	2014	1
Polymixis flavicincta	Large Ranunculus	2020	3
Potamopyrgus antipodarum	Jenkins' Spire Snail	1968	1
Rhizedra lutosa	Large Wainscot	2013	2
Saperda scalaris	A longhorn beetle	1948	1
Scotopteryx chenopodiata	Shaded Broad-bar	2015	7
Sitochroa palealis	Sulphur Pearl	2012	2
Speyeria aglaja	Dark Green Fritillary	1992	1
Spilosoma lubricipeda	White Ermine	2005	2
Spilosoma lutea	Buff Ermine	2020	2
Tetrix subulata	Slender Ground-hopper	1997	1
Tyria jacobaeae	Cinnabar	2020	36
FISH			
Anguilla anguilla	European Eel	1968	1
REPTILES			
Anguis fragilis	Slow-worm	2020	3
Vipera berus	Adder	2000	1
BIRDS			
Acanthis cabaret	Lesser Redpoll	2011	5
Accipiter gentilis	Goshawk	2008	2
Actitis hypoleucos	Common Sandpiper	2018	26
Aegithalos caudatus	Long-tailed Tit	2020	24
Alauda arvensis	Eurasian Skylark	2018	70
Alcedo atthis	Kingfisher	2002	7
Anas acuta	Pintail	2021	212

Scientific Name	Common Name	Latest record	Total Records
Anas crecca	Teal	2019	110
Anas platyrhynchos	Mallard	2020	151
Anser albifrons	White-fronted Goose	2005	1
Anthus pratensis	Meadow Pipit	2019	60
Anthus spinoletta	Water Pipit	1982	1
Anthus trivialis	Tree Pipit	2005	5
Apus apus	Swift	2020	12
Ardea cinerea	Grey Heron	2019	29
Arenaria interpres	Turnstone	2021	223
Asio flammeus	Short-eared Owl	2016	67
Asio otus	Long-eared Owl	1987	2
Aythya ferina	Pochard	2003	82
Aythya fuligula	Tufted Duck	2016	54
Aythya marila	Scaup	2017	44
Branta bernicla bernicla	Dark-bellied Brent Goose	2005	2
Branta canadensis	Canada Goose	2019	9
Bucephala clangula	Goldeneye	1991	7
Calcarius lapponicus	Lapland Bunting	1987	2
Calidris alba	Sanderling	2017	17
Calidris alpina	Dunlin	2019	225
Calidris canutus	Knot	2019	58
Calidris ferruginea	Curlew Sandpiper	2009	25
Calidris maritima	Purple Sandpiper	1991	2
Calidris pugnax	Ruff	2002	9
Caprimulgus europaeus	Nightjar	2021	3
Cettia cetti	Cetti's Warbler	2020	9
Charadrius dubius	Little Ringed Plover	1992	12
Charadrius hiaticula	Common Ringed Plover	2020	229
Chlidonias niger	Black Tern	2004	5
Chloris chloris	Greenfinch	2020	38
Chroicocephalus ridibundus	Black-headed Gull	2021	216
Circus aeruginosus	Western Marsh Harrier	2014	2
Circus cyaneus	Hen Harrier	1978	1
Clangula hyemalis	Long-tailed Duck	1992	7
Corvus cornix	Hooded Crow	1890	1
Coturnix coturnix	Quail	1992	1
Cuculus canorus	Cuckoo	2014	21
Curruca communis	Whitethroat	2020	57
Curruca curruca	Lesser Whitethroat	2020	15
Curruca undata	Dartford Warbler	2005	1
Cygnus columbianus	Bewick's Swan	1987	1
Emberiza citrinella	Yellowhammer	1991	3
Emberiza schoeniclus	Common Reed Bunting	2020	17
Falco columbarius	Merlin	2011	33
Falco peregrinus	Peregrine	2020	38
Falco subbuteo	Hobby	2005	2
Falco tinnunculus	Kestrel	2020	49
Ficedula hypoleuca	European Pied Flycatcher	2003	2
Fringilla montifringilla	Brambling	2010	29
Fulica atra	Eurasian Coot	2020	8
Fulmarus glacialis	Fulmar	1992	4
Gallinago gallinago	Snipe	2010	7
Gavia arctica	Black-throated Diver	1900	1
Haematopus ostralegus	Oystercatcher	2021	258
Hirundo rustica	Swallow	2020	41
Hydrobates pelagicus	European Storm Petrel	1991	5

Scientific Name	Common Name	Latest record	Total Records
Hydrocoloeus minutus	Little Gull	2018	15
Ichthyaetus melanocephalus	Mediterranean Gull	2019	108
Jynx torquilla	Wryneck	1988	3
Larus argentatus	European Herring Gull	2020	135
Larus argentatus argentatus	Herring Gull	2006	10
Larus canus	Common Gull	2020	72
Larus fuscus	Lesser Black-backed Gull	2020	115
Larus glaucoides	Iceland Gull	2018	38
Larus hyperboreus	Glaucous Gull	2009	14
Larus marinus	Great Black-backed Gull	2020	79
Larus michahellis	Yellow-legged Gull	2018	26
Limosa lapponica	Bar-tailed Godwit	2017	92
Limosa limosa	Black-tailed Godwit	2020	47
Linaria cannabina	Linnet	2020	80
Linaria flavirostris	Twite	1989	2
Locustella naevia	Grasshopper Warbler	2010	6
Loxia curvirostra	Red Crossbill	2010	1
Lullula arborea	Woodlark	1997	1
Lymnocryptes minimus	Jack Snipe	2019	18
Mareca penelope	Wigeon	2018	15
Mareca strepera	Gadwall	2017	11
Melanitta fusca	Velvet Scoter	1992	9
Melanitta nigra	Common Scoter	2018	25
Mergus serrator	Red-breasted Merganser	1992	3
Milvus milvus	Red Kite	2008	1
Morus bassanus	Gannet	2020	3
Motacilla cinerea	Grey Wagtail	2020	9
Motacilla flava	Western Yellow Wagtail	2014	36
Muscicapa striata	Spotted Flycatcher	2013	4
Numenius arquata	Curlew	2020	261
Numenius phaeopus	Eurasian Whimbrel	2020	51
Oenanthe oenanthe	Wheatear	2020	59
Oxyura jamaicensis	Ruddy Duck	1991	2
Pandion haliaetus	Western Osprey	2020	3
Passer domesticus	House Sparrow	2017	36
Passer montanus	Tree Sparrow	1989	9
Perdix perdix	Grey Partridge	1993	3
Pernis apivorus	European Honey Buzzard	2008	3
Phalacrocorax carbo	Cormorant	2020	88
Phoenicurus ochruros	Black Redstart	2016	28
Phoenicurus phoenicurus	Redstart	2013	7
Phylloscopus sibilatrix	Wood Warbler	1981	1
Phylloscopus trochilus	Willow Warbler	2020	21
Picus viridis	Green Woodpecker	2009	1
Platalea leucorodia	Spoonbill	1973	1
Plectrophenax nivalis	Snow Bunting	1976	1
Pluvialis apricaria	Golden Plover	2003	7
Pluvialis squatarola	Grey Plover	2010	57
Prunella modularis	Dunnock	2020	29
Psittacula krameri	Ring-necked Parakeet	1991	1
Puffinus puffinus	Manx Shearwater	2020	3
Pyrrhula pyrrhula	Eurasian Bullfinch	2020	6
Recurvirostra avosetta	Avocet	2020	7
Regulus ignicapilla	Common Firecrest	1983	1
Regulus regulus	Goldcrest	2020	11
Riparia riparia	Sand Martin	2018	6

Scientific Name	Common Name	Latest record	Total Records
Saxicola rubetra	Whinchat	2005	16
Scolopax rusticola	Woodcock	2004	3
Somateria mollissima	Eider	1996	10
Spatula clypeata	Shoveler	2021	96
Spatula querquedula	Garganey	2005	1
Stercorarius parasiticus	Arctic Skua	2016	7
Stercorarius pomarinus	Pomarine Skua	1987	3
Sterna hirundo	Common Tern	2010	7
Sterna paradisaea	Arctic Tern	2008	12
Sternula albifrons	Little Tern	2010	10
Streptopelia turtur	Turtle Dove	2003	6
Sturnus vulgaris	Starling	2020	51
Tadorna ferruginea	Ruddy Shelduck	1988	2
Tadorna tadorna	Shelduck	2021	287
Thalasseus sandvicensis	Sandwich Tern	2005	10
Tringa erythropus	Spotted Redshank	2011	7
Tringa glareola	Wood Sandpiper	1992	6
Tringa nebularia	Greenshank	2009	17
Tringa ochropus	Green Sandpiper	2010	19
Tringa totanus	Redshank	2020	184
Turdus iliacus	Redwing	2017	16
Turdus philomelos	Song Thrush	2020	19
Turdus pilaris	Fieldfare	2019	17
Turdus torquatus	Ring Ouzel	2010	3
Turdus viscivorus	Mistle Thrush	2019	10
Tyto alba	Western Barn Owl	2021	162
Upupa epops	Eurasian Hoopoe	1988	3
Uria aalge	Common Guillemot	1987	1
Vanellus vanellus	Lapwing	2019	172
MAMMALS			
Arvicola amphibius	European Water Vole	1978	1
Chiroptera	Bats	2005	1
Erinaceus europaeus	West European Hedgehog	2021	3
Halichoerus grypus	Grey Seal	2002	1
Lepus europaeus	Brown Hare	2005	1
Lutra lutra	European Otter	2013	1
Meles meles	Eurasian Badger	2013	1
Muntiacus reevesi	Chinese Muntjac	2014	1
Neovison vison	American Mink	1978	1
Nyctalus noctula	Noctule Bat	2014	1
Pipistrellus	Pipistrelle	2010	9
Pipistrellus nathusii	Nathusius's Pipistrelle	2014	1
Pipistrellus pipistrellus	Pipistrelle	2019	2
Pipistrellus pipistrellus	Common Pipistrelle	2014	2
Pipistrellus pygmaeus	Soprano Pipistrelle	2014	2
Rhinolophus hipposideros	Lesser Horseshoe Bat	2019	1

Appendix 2. Species list

This list presents the scientific and common names of the plant and animal species recorded on 13 April 2022. This list should only be considered preliminary because it is not the result of detailed study.

The list includes some species that were recorded outside the study area, in the adjacent habitats. These have been marked with an asterisk after the scientific name.

Scientific Name	Common Name
VASCULAR PLANTS	
Achillea millefolium	Yarrow
Agrostis capillaris	Common Bent
Agrostis stolonifera	Creeping Bent
*Alnus cordata**	Italian Alder
Anagallis arvensis	Scarlet Pimpernel
Anisantha madritensis	Compact Brome
Arrhenatherum elatius	False Oat-grass
Artemisia vulgaris	Mugwort
Arum maculatum	Lords and Ladies
Bellis perennis	Daisy
*Berberis darwinii**	Darwin's Barberry
*Blackstonia perfoliata**	Yellow-wort
*Brachypodium sylvaticum**	False Brome
*Brassica nigra**	Black Mustard
*Bromus hordeaceus**	Soft Brome
Buddleia davidii	Butterfly Bush
Cardamine hirsuta	Hairy Bittercress
*Carex flacca**	Glaucous Sedge
*Carex pendula**	Pendulous Sedge
*Catapodium rigidum**	Fern-grass
*Centaurea nigra**	Common Knapweed
*Centaurium erythraea**	Common Centaury
Cerastium fontanum	Common Mouse-ear
*Cerastium glomeratum**	Sticky Mouse-ear
*Cerastium semidecandrum**	Little Mouse-ear
*Chamerion angustifolium**	Rose-Bay Willowherb
Cirsium arvense	Creeping Thistle
Cirsium vulgare	Spear Thistle
Clematis vitalba	Traveller's Joy
Conyza bilbaoana	Bilbao Fleabane
*Cornus sericea**	Red-osier Dogwood
*Crataegus monogyna**	Hawthorn
*Crepis capillaris**	Smooth Hawk's-beard
Cymbalaria muralis	Ivy-leaved Toadflax
*Cynosurus cristatus**	Crested Dog's-tail
*Dactylis glomerata**	Cock's-foot Grass
Daucus carota	Wild Carrot
*Dipsacus fullonum**	Teasel
*Elaeagnus macrophylla**	Broad-leaved Oleaster
Elytrigia repens	Couch
Epilobium ciliatum	American Willowherb

Scientific Name	Common Name
*Epilobium hirsutum**	Greater Willowherb
Equisetum arvense	Field Horsetail
*Erophila verna**	Common Whitlowgrass
*Fallopia japonica**	Japanese Knotweed
Festuca rubra	Red Fescue
*Foeniculum vulgare**	Fennel
Fragaria vesca	Wild Strawberry
Fraxinus excelsior	Ash
Galium aparine	Cleavers
Geranium dissectum	Cut-leaved Crane's-bill
Geranium lucidum	Shining Crane's-bill
*Geranium molle**	Dove's-foot Crane's-bill
Geranium robertianum	Herb Robert
Geranium rotundifolium	Round-leaved Crane's-bill
*Glechoma hederacea**	Ground Ivy
Hedera helix sl.	Ivy
*Hippophae rhamnoides**	Sea Buckthorn
Hirschfeldia incana	Hoary Mustard
Holcus lanatus	Yorkshire Fog
*Hyacinthoides hispanica**	Spanish Bluebell
Hypericum perforatum	Perforate St.John's-wort
*Hypochaeris radicata**	Common Cat's-Ear
*Juncus inflexus**	Hard Rush
Juniperus sp.	Juniper (ornamental sp.)
*Lamium purpureum**	Red Dead-nettle
*Lapsana communis**	Nipplewort
*Lepidium didymum**	Lesser Swine-cress
Leucanthemum vulgare	Ox-eye Daisy
Linaria purpurea	Purple Toadflax
Lotus corniculatus	Common Bird's-foot Trefoil
*Mahonia aquifolia**	Oregon Grape
Melilotus altissimus	Tall Melilot
Oenanthe crocata	Hemlock Water-dropwort
Oenothera sp.	Evening-primrose
Pastinaca sativa	Wild Parsnip
Picris echioides	Bristly Ox-tongue
*Pinus nigra**	Corsican Pine
*Pinus radiata**	Monterey Pine
Plantago lanceolata	Ribwort Plantain
Plantago major	Greater Plantain
Poa annua	Annual Meadow-grass
Poa trivialis	Rough Meadow-grass
*Potentilla anserina**	Silverweed
Potentilla reptans	Creeping Cinquefoil
*Primula vulgaris**	Primrose
Prunella vulgaris	Self-Heal
Pyracantha coccinea	Firethorn
Ranunculus acris	Meadow Buttercup
*Ranunculus ficaria**	Lesser Celandine
Ranunculus repens	Creeping Buttercup
Reseda alba	White Mignonette
*Reseda luteola**	Weld

Scientific Name	Common Name
Ribes sanguineus	Flowering Currant
Rosa canina	Dog Rose
Rubus fruticosus agg.	Bramble
Rumex obtusifolius	Broad-Leaved Dock
Sagina procumbens	Procumbent Pearlwort
Salix cinerea	Grey Willow
*Saxifraga tridactylites**	Rue-leaved Saxifrage
Sedum acre	Biting Stonecrop
*Sedum album**	White Stonecrop
Senecio inaequidens	Narrow-leaved Ragwort
Senecio jacobaea	Ragwort
Senecio vulgaris	Groundsel
*Sherardia arvensis**	Field Madder
*Solanum dulcamara**	Bittersweet
Sonchus oleraceus	Soft Sow-thistle
*Stachys sylvatica**	Hedge Woundwort
Stellaria media	Chickweed
Taraxacum sp.	Dandelion
*Trifolium repens**	White Clover
Tripleurospermum inodorum	Scentless Mayweed
Tussilago farfara	Colt's Foot
*Ulex europaeus**	Common Gorse
Urtica dioica	Nettle
*Valerianella sp.**	Cornsalad
Verbascum thapsus	Greater Mullein
*Veronica agrestis**	Green Field-speedwell
Veronica persica	Common Field-speedwell
Veronica serpyllifolia	Thyme-leaved Speedwell
*Viburnum davidii**	David Viburnum
*Viburnum tinus**	Laurustinus
Vicia sativa	Common Vetch
BRYOPHYTES	
Amblystegium serpens	Creeping Feather-moss
Barbula convoluta	Lesser Bird's-claw Beard-moss
Brachythecium rutabulum	Rough-stalked Feather-moss
Bryum argenteum	Silver-moss
Bryum spp.	Thread-moss spp.
*Calliergonella cuspidata**	Pointed Spear-moss
Didymodon cf fallax	False Beard-moss
Funaria hygrometrica	Common Cord-moss
*Homalothecium lutescens**	Yellow Feather-moss
Kindbergia praelonga	Common Feather-moss
*Rhytidiadelphus squarrosus**	Springy Turf-moss
Tortula muralis	Wall Screw-moss
*Trichostomum brachydontium**	Variable Crisp-moss
LICHENS	
Xanthoria parietina	Golden Shield Lichen
BIRDS	
Carduelis carduelis	Goldfinch
Columba palumbus	Wood Pigeon
*Larus fuscus**	Lesser Black-backed Gull
*Larus ridibundus**	Black-headed Gull

Scientific Name	**Common Name**
Turdus merula	Blackbird
MAMMALS	
Oryctolagus cuniculus	Rabbit (dead, and droppings)
Vulpes vulpes	Fox (footprints)