# ECOLOGICAL IMPACT ASSESSMENT

**Celsa Shedder, Rover Way Cardiff**

Prepared for: **Celsa Manufacturing**

SLR Ref: 402.000010.00001
Version No: v1.0
June 2022

| Document Control | |
|---|---|
| Document Properties | |
| Organisation | SLR Consulting |
| Project Name | Celsa Shedder, Rover Way Cardiff |
| Report Title | Ecological Impact Assessment |
| Author(s) | Lis Weidt |
| Draft version/final | Final |
| Document reference | 220622_402.000010.00001_Celsa Shredder EcIA Report_ Final |

| | | | | | | |
|---|---|---|---|---|---|---|
| DATE | Revision No | **Prepared by4** | **Reviewed by** | **Approved by** | **Status** | **Comments** |
| 07/07/22 | 1 | Lis Weidt | Stuart Wilson | | Final | Issue to client as draft for review and comment. |
| | | | | | | |

# BASIS OF REPORT

This document has been prepared by SLR Consulting Limited with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with Celsa Manufacturing (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment. SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty. Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid. The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise. This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it. Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

# CONTENTS

# DOCUMENT REFERENCES

## TABLES

## DRAWINGS



## APPENDICES

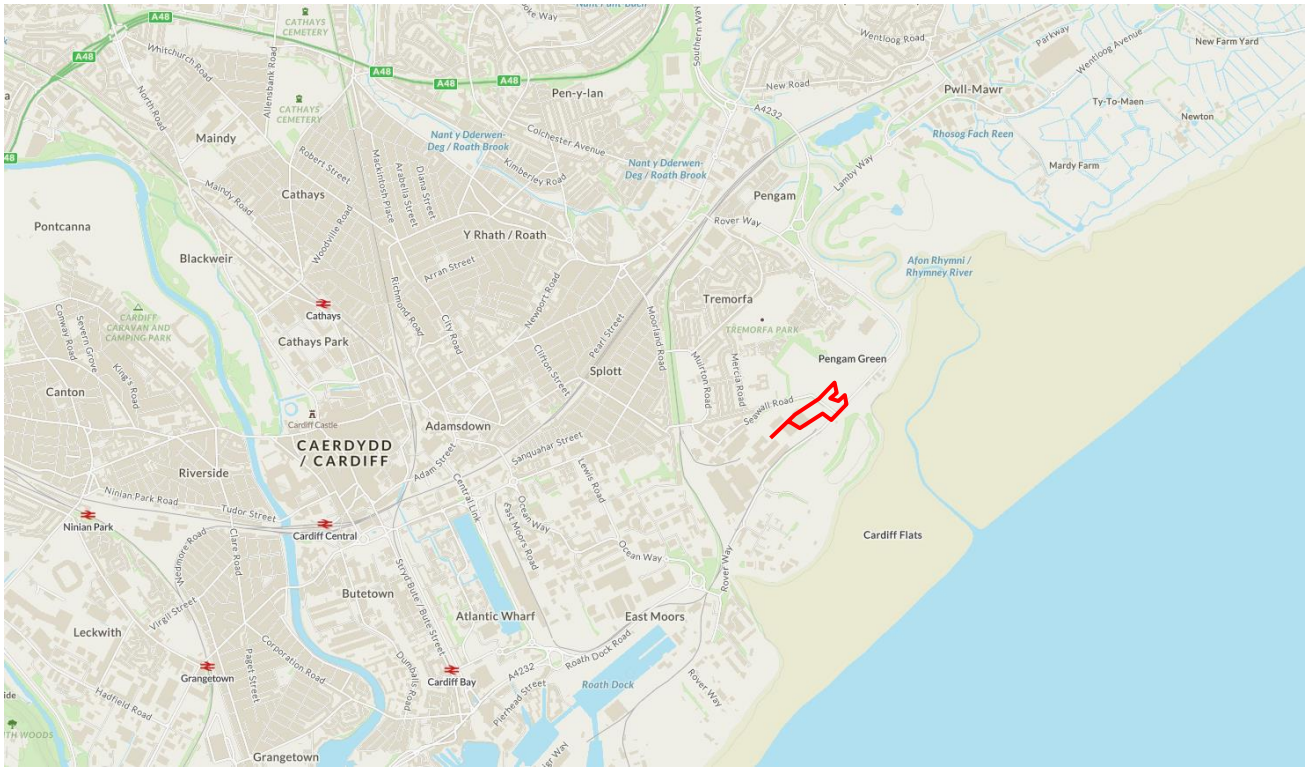
# 1.0 Introduction

SLR Consulting (SLR) was commissioned by Celsa Manufacturing in May 2022 to prepare an Ecological Impact Assessment (EcIA)for a new metal shedder and associated new weighbridge, substation and parking south of Rover Way, Cardiff CF24 5SB (grid reference ST 21502 76352) and illustrated in Figure 1-1.

A full description of the proposed development is provided in the Planning Statement that forms part of the application and within Section 4.0 of this report.

The proposed development falls within the administrative boundary of Cardiff Council, to whom the planning application is made.

**Figure 1-1**
**Celsa Site Location**




## 1.1 General Description of the Site

The proposed development site (the Site) is located to the south of Rover Way. The existing scrapyard area, owned by Celsa Manufacturing, is used for sorting of scrap metal and forms part of a larger materials-handling site. The Site is of rectangular shape and extends to approximately 4.0ha (hectares) in size (drawing 01). The land is currently utilised for the management of ferrous scrap metal and includes a number of existing industrial buildings and plant machinery dispersed throughout the Site. There have been extensive earthworks and ground works associated with the operations at the Site, including the tipping of metal ore, slag and similar material.

The edge of the Site includes a limited area of scrub with a dense section along the eastern edge. The Site is situated within an industrial estate on the eastern edge of Cardiff. The wider landscape comprise of Cardiff city to the north, west and south of the Site and the Severn Estuary is located approx. 300m west of the Site.

## 1.2 Project Description

The proposed development will comprise a shredder, as well as associated development, to improve the Electric Arc Furnace's (EAF) efficiency through better quality and reliability of the feedstock. Lower grade blends of purchased steel scrap will be replaced by shredder steel "frag", improving the consistency of the scrap into the EAF.

This will subsequently eliminate the variability that is detrimental to the EAF, providing greater efficiency. This will enable Celsa to take non-ferrous, organic, and inert materials out of the system early, where practical, leading to more efficient processing allowing a higher UK steel capacity to be obtained.

The key elements of the proposals are explained below:

- Enclosed Shredder Machine compound, including Metal Shredder Machine and shredded metal stockpile areas;
- Use of existing vehicular access from Tide Fields Road for all associated traffic;
- Use of existing vehicular access at Rover Way for Slag Tippers only;
- New weighbridges and cabin;
- Widening of existing internal roads/routes;
- New enclosed metal processing area, inc Shear machine, process stockpile areas and ELV Station;
- New Substation; and
- 30 No. new car parking spaces and amenity block.

In terms of the Shredder itself, the following details are provided:

- Machine will process 10 hours daily - * 80% * 250 wd/year * 160 tph (input) = 320.000 tpy (input);
- Materials to be shredded include mixed Light scrap, de-polluted car bodies and baled scrap;
- Operational hours between 7 am and 5 pm;
- Emissions are designed to be < 2mg/hr and the BAT limit specifies 2 to mg/hr; and
- Energy consumption are to be approximately 3500 to 4000 Kwh per hour (to be confirmed, in discussions with potential suppliers)

## 1.3 Purpose of this Report

The purpose of the report:

- To describe the baseline data collection and assessment methods used;
- To summarise the baseline ecological conditions;
- To identify and describe all potentially significant ecological effects associated with the proposed development;
- To set out the design, mitigation and compensation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects;
- To identify how mitigation and compensation measures will/could be delivered;
- To provide an assessment of the significance of any residual effects in relation to the effects on biodiversity and the legal and policy implications;

- To identify appropriate enhancement measures and how these will/could be delivered; and
- To set out the requirements for post-construction monitoring.

## 1.4 Evidence of Technical Competence and Experience

Lis Weidt, a Senior Ecologist based at our Bradford on Avon Office. Lis has six years' experience of working in ecological consultancy and is a Full Member of the Chartered Institute of Ecology & Environmental Management (MCIEEM). Lis has led small and medium scale development projects delivering Ecological Impact Assessments, habitat and protected species surveys and Biodiversity Net Gain calculations to support various planning applications.

This report has been subject to review as part of SLR's Quality Assurance System. This report was reviewed by Stuart Wilson CEnv MCIEEM. Stuart is a Technical Director at SLR with over twenty-five years professional experience as an ecologist and environmental impact assessment practitioner, including extensive experience in environmental and ecological impact assessment and design. Stuart has a BSc (Hons) degree in Environmental Biology from University of Essex and an MSc degree in Environmental Impact Assessment from the University of Wales, Aberystwyth. He is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and is a Chartered Environmentalist (CEnv) with the Society for the Environment.

## 1.5 Relevant Legislation and Policy

### *Conservation of Habitats and Species Regulations 2017 (as amended)*

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

### *Wildlife & Countryside Act 1981*

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- Intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

### *Environment (Wales) Act 2016*

The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 Section 6 of the Act introduces a new biodiversity

duty, which replaces and enhances the biodiversity duties set out in the NERC Act 2006 (previously referred to as Section 41 Habitats or Species) and requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems.

Section 7 of the Act lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales.

### 1.5.1 Planning Policy

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information. Local planning policy relevant to protected species and biodiversity is also described below.

#### *Planning Policy Wales 11*

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales. Section 6.4 of PPW relates to Biodiversity and Ecological networks.

Paragraph 6.4.5 of PPW states that:

*"Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:*

- *diversity between and within ecosystems;*
- *the connections between and within ecosystems;*
- *the scale of ecosystems;*
- *the condition of ecosystems including their structure and functioning; and*
- *the adaptability of ecosystems."*

It goes on to state that:

*"The broad framework for implementing the Section 6 Duty and building resilience through the planning system includes addressing:*

- *Diversity: to ensure mechanisms are in place to minimise further loss and where circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. More diverse ecosystems are more resilient to external influences (this includes biological, geological and physical diversity on a site). This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity;*
- *Extent: to ensure mechanisms allow for the identification of potential habitat, the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning decisions should incorporate measures which seek the creation, restoration and appropriate management of green networks and linkages between habitats and maintaining and enhancing other green infrastructure features and networks;*
- *Condition: Ecosystems need to be in a healthy condition to function effectively, to deliver a range of important ecosystem services. Planning decisions should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution. Planning for the long term*

*management of retained habitats is key to maintaining condition through for example, the use of planning obligations;*

- *Connectivity: to take opportunities to develop functional habitat and ecological networks within and between ecosystems and across landscapes, building on existing connectivity and quality and encouraging habitat creation, restoration and appropriate management. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors, including transport and river corridors, and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change; and*
- *Adaptability to change: primarily in the form of climate change, for both species (diversity) and ecosystems requires action to protect the extent, condition and connectivity of habitats, features and ecological networks. Development plans, planning proposals and applications which build on protecting designated sites and securing and enhancing green infrastructure will be key ways of addressing the attributes of ecosystems resilience identified in the Environment Act as well as facilitating social and economic resilience aspirations of the Well-being of Future Generations Act."*

### Technical Advice Note 5 Nature Conservation and Planning

PPW is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. TAN 5 deals with Nature Conservation and Planning and states in paragraph 2.4:

"*When considering policies and proposals in local development plans and when deciding planning applications that may affect nature conservation, local planning authorities should*:

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered."

### *Natural Resources Policy (2017)*

The focus of the Natural Resources Policy (NRP) is on improving management of natural resources. It is a key part of the delivery framework for the sustainable management of natural resources established by the Environment

(Wales) Act. It is also key to the delivery of the well-being goals set out within the Well-being of Future Generations Act and Wales international contribution to the delivery of the United Nation's (UN's) Global Goals.

### *Natural Resources Wales (NRW) South West Wales Area Statement*

Natural Resources Wales (NRW) has developed seven Area Statements that relate to different regions of Wales. Viewed together, the seven Area Statements presents NRW's response to the NRP. One of the themes identified by the South West Wales Area Statement is titled 'Reversing the decline of, and enhancing, biodiversity' – this details the 'next steps' of implementing effective interventions to reverse the decline in and enhance biodiversity:

- Improving the connectivity and condition of habitats and species (i.e. re-naturalising rivers and corridors for freshwater mammals);
- Supporting others to ensure that biodiversity is appropriately taken account of in decision-making;

### *Nature Recovery Action Plan for Wales 2020 – 2021*

The above plan identifies five immediate priorities for further action:

- aligning the responses to the climate emergency with the biodiversity crisis;
- addressing the post European Union (EU) exit funding gap for agri-environment measures;
- providing spatial direction for targeting action for biodiversity;
- improving the condition of the Protected Sites Network; and
- exploring new and sustainable funding mechanisms for biodiversity action.

## Local Planning Policy

The Cardiff Council Local Development Plan was adopted in 2016. This includes a series of polices relating to ecology and nature conservation. The most relevant to this assessment are policies EN5, EN6 and EN7, reproduced below:

*EN5: Designated Sites*

*"Development will not be permitted that would cause unacceptable harm to sites of international or national nature conservation importance. Development proposals that would affect locally designated sites of nature conservation and geological importance should maintain or enhance the nature conservation and/or geological importance of the designation. Where this is not the case and the need for the development outweighs the conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development which avoids nature conservation impacts, and compensation measures designed to ensure that there is no reduction in the overall nature conservation value of the area or feature. "*

*EN6: Ecological Networks And Features Of Importance For Biodiversity*

*"Development will only be permitted if it does not cause unacceptable harm to: i. Landscape features of importance for wild flora and fauna, including wildlife corridors and 'stepping stones' which enable the dispersal and functioning of protected and priority species; ii. Networks of importance for landscape or nature conservation. Particular priority will be given to the protection, enlargement, connectivity and management of the overall nature of semi natural habitats. Where this is not the case and the need for the development outweighs the nature conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development and compensatory provision will be made of comparable ecological value to that lost as a result of the development. "*

*EN7: Priority Habitats And Species*

*"Development proposals that would have a significant adverse effect on the continued viability of habitats and species which are legally protected or which are identified as priorities in the UK or Local Biodiversity Action Plan will only be permitted where: i. The need for development outweighs the nature conservation importance of the site; ii. The developer demonstrates that there is no satisfactory alternative location for the development which avoids nature conservation impacts; and iii. Effective mitigation measures are provided by the developer. Where harm is unavoidable it should be minimised by effective mitigation to ensure that there is no reduction in the overall nature conservation value of the area. Where this is not possible compensation measures designed to conserve, enhance, manage and, where appropriate, restore natural habitats and species should be provided. "*

In addition, City of Cardiff Council Green Infrastructure Supplementary Planning Guidance (November 2017) sets out principles and advice to guide developers in planning requirements relating to biodiversity, open spaces, trees, soils and other aspects of sustainable development.

# 2.0 Methodology

## 2.1 Scope

An assessment of likely impacts of the Proposed Development on biodiversity resources has been undertaken in line with the relevant professional guidance. This includes specific consideration of ecological sites, habitats, and species.

The ecological evaluation and impact assessment approach used in this chapter aligns with Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland[1] ("CIEEM guidelines"), which are widely regarded as good practice for professional ecologists.

The approach to the ecological assessment has been undertaken as follows:

- Definition of the existing ecological conditions of the Proposed Development area, including a review of the development area in its local and regional ecological context;
- Determination of the existing ecological value of the Proposed Development area and surrounding areas;
- Identification and description of all potentially significant ecological effects associated with the Proposed Development;
- Outlining the design, mitigation and compensation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects;
- Identification of how mitigation and compensation measures will be delivered;
- Identification of any residual ecological effects following mitigation, and an assessment of their significance.
- Identification of appropriate enhancement measures and how these will be delivered; and
- Outlining the requirements for post-completion monitoring.

The Proposed Development area was subject to baseline ecology survey by Sturgess Ecology on 13th April 2022[2], with the Site and a 1km buffer being used for the desk-based search area.

The surveyed area was amended for species-specific surveys to ensure the correct zone of influence was examined for each particular receptor. Where this occurred, details of the updated area have been provided in the appropriate report.

This baseline information has been used to inform the study area associated with the multiple ecological receptors under consideration, which include:

- The habitats and plants and associated fauna (including records of bats, invertebrates, reptiles, amphibians, birds, badgers, common mammals) associated with the planning application boundary.
- Adjacent land where accessible/observed from its boundary and/or interpreted using imagery provided by Google Earth Professional;
- Consideration to potential effects on designated sites and their features of interest, with an examination of statutorily designated sites extended to 5km from the site and non-statutorily designated sites to 2km.

[1] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester
[2] Sturgess Ecology (2022)., Preliminary Ecological Appraisal.

This allows consideration of potential effects to biodiversity receptors associated with air quality, water, road transport and noise beyond the Sites boundaries.

The conclusions and recommendations contained in this report are based on the broad scope of potential development works and affected locations detailed in Section 1.2. the scope of the EcIA considers the presence of designated ecological sites (statutory and non-statutory), habitats of principal importance for the conservation of biodiversity, ancient woodland and protected and notable species.

## 2.2 Baseline Data Collection

### 2.2.1 Desk Study

An ecological data search was requested from South-East Wales Biodiversity Records Centre (SEWBReC) during April 2022 to provide records of protected and otherwise notable species, statutory and non-statutory protected sites for the Site and land within a 1km radius of it.

An internet-based desk study was also undertaken, whereby the Multi-Agency Geographic Information for the Countryside (MAGIC) website (http://magic.gov.uk) was searched for statutory designated sites (such as Sites of Special Scientific Interest (SSSI)) and European Protected Species (EPS) Licences granted within 2km of the site.

The Joint Nature Conservation Committee website[3] has provided information on habitats and species of principal importance for conservation in England. The Cardiff Council planning portal[4] has provided information on the current and future planning policies and was also searched for planning applications within the application site and immediately surrounding the site.

## 2.3 Field Survey(s)

### 2.3.1 Extended Phase 1 Survey

A phase 1 habitat survey was carried out by Sturgess Ecology on 13th April 2022[5] of the site which can be found in Appendix B. This Preliminary Ecological Appraisal (PEA) has been used as the baseline for the Ecological Impact Assessment.

### 2.3.2 Limitations

#### Desk Study

Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

#### Field Survey(s)

It should be noted that a lack of evidence of a protected species does not necessarily preclude it from being present at a later date. In relation to use of habitats by bat species, use of a particular area of land can vary seasonally and from day to day.

[3] http://jncc.defra.gov.uk/page-5717
[4] https://www.cardiff.gov.uk/ENG/resident/Planning/View-and-track-planning-applications/Pages/View-and-track-any-planning-applications.aspx
[5] Sturgess Ecology (2022)., Preliminary Ecological Appraisal.

## 2.4 Assessment Approach

The ecological evaluation and impact assessment approach used in this report is based on Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland[6].

### 2.4.1 Important Ecological Features

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.

#### Determining Importance

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained below. Importance may relate, for example, to protected status, the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.

Important habitats are considered here to be those which:

- match descriptions of habitats listed on Annex 1 of the Habitats Directive, so far as it applies to the UK and as transposed by The Conservation of Habitats and Species Regulations 2017 (as amended);
- match descriptions of Habitats of Principal Importance as outlined under the Environment (Wales) Act 2016[7];
- match descriptions of habitat included within the Cardiff LBAP Biodiversity Action Plan[8] or the relevant Nature recovery action plan[9];
- match descriptions of habitat selection criteria for the Wildlife Sites Guidelines[10];
- comprise irreplaceable habitats; such as (but not limited to) ancient woodland and veteran trees; and/ or
- comprise a significant habitat resource for an important species (see below).

Important species are considered here to be those:

- of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive) so far as it applies to the UK and as transposed by The Conservation of Habitats and Species Regulations 2017 (as amended);
- specially protected under the terms of the Wildlife and Countryside Act 1981 (as amended);
- of principal importance for biodiversity as outlined under the Environment (Wales) Act 2016[11];

---

[6] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester
[7] Welsh Government (2016). Section 7 Priority habitats. https://www.biodiversitywales.org.uk/File/57/en-GB
[8] Cardiff Council (2008). Cardiff LBAP. Cardiff-LBAP-2008.pdf (outdoorcardiff.com)
[9] Welsh Government (2020). The Nature Recovery Action Plan for Wales 2020 to 2021 (gov.wales)
[10] Wales Biodiversity Partnership (2008). Wildlife Sites Guidance Wales. A Guide to Develop Local Wildlife Systems in Wales. https://www.biodiversitywales.org.uk/File/53/en-GB
[11] Welsh Government (2016). Section 7 Priority species. https://www.biodiversitywales.org.uk/File/56/en-GB

- included within the Cardiff LBAP Biodiversity Action Plan[12] or the relevant Nature recovery action plan[13];
- match descriptions of species selection criteria for Local Wildlife Sites;
- Red listed or listed as near threatened using International Union for the Conservation of Nature (IUCN) criteria (IUCN, 2012; IUCN, 2016; IUCN 2019), e.g. in one of the UK Species Status Project reviews, or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);
- for birds, a potentially important population of a species which is red or amber listed in the UK (Eaton et al., 2015[14] and Stanbury et al., 2021[15]);
- which are listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a nationally notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/ or
- endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place.

The importance of an ecological feature is considered within a defined geographical context. The CIEEM guidelines set out the following frame of reference which can be applied to identified ecological features which are informed by desk study and surveys:

- International and European;
- National;
- Regional;
- Metropolitan, County, vice county or other local authority-wide area; and
- Local.

For the purposes of this assessment only ecological features of local importance or greater and/ or subject to legal protection are subject to detailed assessment (and are referred to as “important ecological features”). Effects on other ecological features of lower importance are considered unlikely to be significant in legal or policy terms so are not subject to detailed assessment.

The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

---

[12] Cardiff Council (2008). Cardiff LBAP. Cardiff-LBAP-2008.pdf (outdoorcardiff.com)

[13] Welsh Government (2020). The Nature Recovery Action Plan for Wales 2020 to 2021 (gov.wales)

[14] Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746. Available online at britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf

[15] Stanbury, A., Eaton,M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747. Available online at https://britishbirds.co.uk/content/status-our-bird-populations.

### 2.4.2 Impact Assessment

The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.

Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
- Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

### 2.4.3 Significant Effects

The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of CIEEM guidelines. Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

Paragraphs 5.29 – 5.34 of the CIEEM guidelines cover how significant effects are determined. To summarise:

- for designated sites – effects may be significant if they are likely to undermine the conservation objectives of the site; or positively or negatively affect the conservation status of species or habitats for

which the site is designated; or may have affect the condition of the site or its interest/qualifying features;

- for ecosystems – effects may be significant if the project is likely to result in a change in ecosystem structure and function. Consideration should be given as to whether any processes or key characteristics will be removed or changed, if there will be an effect on the nature, extent, structure and function of component habitats or if there is an effect on the average population size and viability of component species;
- for habitats and species - consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance. Conservation status is defined as follows;
    - Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and
    - Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

### 2.4.4 Cumulative Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

For this particular Proposed Development, the following applications have been assessed for cumulative impacts: Cardiff Motocross Centre MX site (Outline Planning Permission (21/02182/MJR) granted) for the removal of fill material and the construction of up to 50,000 sqm of industrial accommodation (b8 use class), new access roads and associated landscaping works which is adjacent to the Site; 50m to the east. The assessment is provided in Section 5.4

### 2.4.5 Avoidance, Mitigation, Compensation and Enhancement

When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

It is important for the EcIA to clearly differentiate between avoidance mitigation, compensation and enhancement.

Following CIEEM guidelines, the terminology has been defined as below:

- Avoidance: where an impact has been eradicated through, e.g. changes in project design;
- Mitigation: measures used to reduce or remedy a specific negative impact in situ;

- Compensation: when mitigation in situ is impossible, then compensation is used to offset residual effects; and
- Enhancement: provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures.

### 2.4.6 Residual Impacts

After assessing the impacts of the proposal, all attempts should be made to avoid and mitigate ecological impacts as described above. Once measures to avoid and mitigate ecological impacts have been finalised, assessment of the residual impacts should be undertaken to determine the significance of their effects on ecological features.

As outlined in the CIEEM guidelines, any residual impacts that will result in effects that are significant, alongside the proposed compensatory measures, will be the factors considered against ecological objectives (legislation and policy) in determining the outcome of the application.

### 2.4.7 Uncertainties and Limitations

Details on any limitations encountered in the surveys are also provided in the respective reports. The limitations are minor and unlikely to impact the conclusions drawn from the baseline survey data.

# 3.0 Baseline Ecological Conditions

The results of the desk and field survey are reported below and describe the baseline conditions at the Site and within the surrounding area.

## 3.1 Designated Sites

### 3.1.1 Statutory Designated Sites

There are four statutory designated Sites of national and European importance within 2km of the Site.

**Table 3.1 - Statutory Designated Sites within 2km**

| Site Name | Reason for Designation | Distance and Direction from Site |
|---|---|---|
| Severn Estuary Ramsar | Immense tidal range, important for the run of migratory fish, one of the most diverse fish assemblages in Britain (110 species), regularly supporting overwintering waterfowl. | 300m E |
| Severn Estuary SAC | Examples of Annex I habitats and Annex II species including 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 and twaite shad. | |
| Severn Estuary SPA | Overwintering populations of Bewick's Swan, Curlew, Dunlin, Pintail, Redshank and Shelduck. Qualifying numbers of Ringed Plover on passage. The estuary is a wetland of international importance which regularly supports at least 90,000 overwintering waterfowl. | |
| Gwent Levels Rumney and Peterstone SSSI | The Gwent Levels constitute the lowlands between Cardiff and Chepstow and are drained by an ordered network of drainage ditches. They are an example of one of the most extensive areas of reclaimed wet pasture in Great Britain which includes the Somerset Levels, Romney Marsh and the Pevensey Levels, and is the largest area of its kind in Wales. Together these Levels systems constitute a national series of sites, each with its own special features. | 1.5km NW |

| Site Name | Reason for Designation | Distance and Direction from Site |
|---|---|---|
| | The Gwent Levels reens are rich in plant species and communities, many of which are rare or absent in other Levels systems. This is due to the variety of reen types and their management regimes and the timing of the management which results in a staggered programme across the Levels. The regular maintenance of some reens provides conditions for submerged plant species such as hairlike pondweed *Potamogeton trichoides* and openwater emergents such as arrowhead *Sagittaria sagittifolia an opportunity to flourish. Others are less intensively* managed and some have become completely overgrown by weeds and hedges.<br>The aquatic invertebrate fauna is very diverse and the Gwent Levels compares well with similar areas in Britain. Many nationally rare or notable species are present such as *Haliplus mucronatus* and *Hydrophilus piceus*. The area is important in the Welsh context for its snails and dragonflies and includes the species *Physa heterostropha* and *Brachytron pratense* respectively. The larger number of hedgerows add to the diversity of the area and, together with the main reen banks, provide a habitat for nationally important assemblages of terrestrial invertebrates such as *Pipunculus fonsecai* and *Tomosvaryella minima*.<br>The Rumney and Peterstone area supports a number of important plant species including the nationally rare brackish water-crowfoot *Ranunculus baudotii* and several regional rarities including the pondweeds *Potamogeton obtusifolius* and *Potamogeton berchtoldii*. The northern section of this SSSI is a stronghold on the Gwent Levels for the flowering rush *Butomus umbellatus*.<br>The area also supports a rich and important invertebrate fauna with a number of nationally notable species largely confined to this sub-unit including the marsh-flies *Pherbellia brunnipes* and *Lamprochromus elegans*, the water-beetle *Plateumaris braccata* and the variable damselfly *Coenagrion pulchellum.* | |

### 3.1.2 Non-Statutory Designated Sites

There are five non-statutory designated sites within 2km of the Site.

**Table 3.2 - Non Statutory Designated Sites within 2km**

| Site Name | Reason for Designation | Distance and Direction from Site |
|---|---|---|
| Cardiff Heliport Fields SINC | 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. | 800m SW |
| Lamby Salt Marsh SINC | The same as River Rhymney. | 1km NW |
| Pengam Moors SINC | Artificial habitat with strong maritime influences and a network of drainage channels, with the locally rare plants Sea Clover and Brackish Water Crowfoot. | 100m NW |
| River Rhymney SINC | 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. | 1km NW |
| Tidal Sidings SINC | The same as Cardiff Heliport Fields. | 800m SW |

## 3.2 Habitats

As a working Asphalt and Recycling plant the Site is dominated by unvegetated bare ground with occasional patches of sparse vegetation. Adjacent to the western and eastern boundary there are strips of scrub with more mature trees along the eastern boundary. There are also four buildings present within the Site boundary.

The vegetation largely comprises plants that are common and widespread and which are typical of disturbed sites with the Site largely inhospitable to wildlife due to the limited nature of the vegetation present and the high level of disturbance.

For full habitat description see Appendix B for the Preliminary Ecological Appraisal report.

## 3.3 Species

### 3.3.1 Plants

The SEWBReC data search returned records of several species of plant which are very rare or extinct today in Cardiff. However, these records were collected prior to 1930, when the surrounding landscape would have been very different to present day. It is deemed unlikely that these rare plants would have persisted to present day, due largely to the lack of suitable habitat.

None of the plants recorded within the Site during the walkover survey are listed as being especially rare within the Wildlife Sites Guidelines[16].

There was one sighting of Japanese knotweed (*Fallopia japonica*), which is listed on Schedule 9 of the Wildlife & Countryside Act 1981, however this sighting was made outside of the Celsa land ownership boundary, and the plant itself was present in a small quantity.

Notable and protected plants are therefore not considered further in this chapter.

#### Lichens

Very few lichens were seen during the survey, and the potential for any notable species within the study area is considered very low.

Lichens are therefore not considered further in this chapter.

#### Fungi

No fungi were identified during the walkover survey. This may be due to the time of year the survey was undertaken being outside of the optimal fruiting season. The potential for the habitats within the application site 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.

Fungi are therefore not considered further in this report.

### 3.3.2 Invertebrates

No invertebrates were recorded during the preliminary survey.

The SEWBReC data search returned results of several notable invertebrate species, including brown-banded bee, carder bee, chalk yellow-face bee and spined mason bee, which are all listed on section 7 of the Wildlife & Countryside Act 1981. The records of notable species of invertebrates from the data are likely associated with the nearby SINCs, as the Site currently lacks appropriate habitat for these species, specifically flower-rich grassland.

Invertebrates are therefore not considered further in this report

### 3.3.3 Fish

There are no areas of standing or running water within the Site that are capable of supporting fish.

Fish are therefore not considered further in this report.

[16] Wales Biodiversity Partnership (2008). Wildlife Sites Guidance Wales. A Guide to Develop Local Wildlife Systems in Wales. https://www.biodiversitywales.org.uk/File/53/en-GB

### 3.3.4 Amphibians

No amphibians were seen during the walkover survey, and there were no records of amphibians returned within the SEWBReC data search.

There is a lack of suitable terrestrial or aquatic habitat present within the Site boundary for amphibians.

Amphibians are therefore not considered further in this report.

### 3.3.5 Reptiles

The SEWBReC data search returned two records of reptiles. One of slow worms from 850m away from the Site, and the second of adder from over 1km away.

Both of these locations are separated from the Site by significant barriers to the movement of reptiles, such as roads and built-up areas. Moreover, the lack of cover and vegetation within the application site makes it extremely unlikely that any reptiles would be present.

Reptiles are therefore not considered further in this report.

### 3.3.6 Birds

No notable bird species were recorded during the walkover survey.

The SEWBReC data search provided very large numbers of bird records, most of which will be waterfowl and waders associated with the nearby Severn estuary. There are further records of birds including black redstart, linnet and skylark using the coastal scrub near to the Site. Nearby records of breeding kestrel and barn owl may be associated with the steel works site, due to a lack of other suitable buildings in the area. A full list of notable bird species records returned by SEWBReC can be found in Appendix B.

Whilst the majority of the Site lacks vegetation, water features and any other habitats which could be attractive to birds, it is possible that some birds might nest in the old buildings or marginal scrub adjacent to the Site boundaries – although ongoing disturbances may prevent this.

The potential for disturbance effects to birds due to the development will need to be considered.

### 3.3.7 Bats

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 the records are likely to be associated with the built-up areas. Bat species recorded in the wider area include Soprano Pipistrelle, Nathusius's Pipistrelle, Noctule and Lesser Horseshoe Bat. It is considered that the foraging opportunities for bats within the application site are limited due to the lack of suitable habitat, and the potential for effects on bats is considered below.

#### Preliminary Roost Assessment

Four buildings were identified within the Site which are considered to have suitability for bat roosts and are described in detail in Table 1 of Appendix B. The SEWBReC data search returned several results for mammals in the wider area (although no records exist from within the Site boundary). These include several bat species. These species are listed within section 7 of the Wildlife & Countryside Act 1981. The potential for the Site to be used by these species is limited by the absence of suitable supporting habitats/refuges and the limited connectivity between such areas and the Site.

Buildings at TN10, 11, 13 and 14 (see Appendix B), were considered to have Low suitability for bat roosts. There are no plans to demolish the buildings, which will remain in situ, and therefore no further surveys have been carried out on these buildings.

The potential disturbance effects to possible bat roosts due to the development will be considered further.

### 3.3.8 Other Mammals

Signs of mammals during the preliminary survey were limited to field signs for fox and rabbit. It is considered likely that other wild mammals – such as brown rat – use the Site from time to time.

The SEWBReC data search returned several results for mammals in the wider area (although no records exist from within the Site boundary). These include badger, hedgehog, otter, water vole, brown hare, and grey seal. Many of these species are listed within section 7 of the Wildlife & Countryside Act 1981. The potential for the Site to be used by these species is limited by the absence of suitable supporting habitats/refuges and the limited connectivity between such areas and the Site.

Mammals are therefore not considered further in this report.

## 3.4 Summary of Important Ecological Features

### 3.4.1 Severn Estuary Ramsar site / SAC/ SPA

This is an internationally important site which supports occurrences of habitat types and species listed in Annexes I and II respectively of the Habitats Directive that are considered important in a European context and meeting the criteria in Annex III of the Directive.

No habitat loss is anticipated due to the proposed development however, owing to the proximity of the Ramsar/SAC/SPA to the Site, the proposed development does have potential to result in in-direct impacts on the designated site(s) during the construction and operational phases of the development through Noise, disturbance and Air Quality. These potential impacts of the proposed development on this site is considered within the Habitats Regulations Assessment for the proposed development. Therefore, this site(s) will be considered further in this assessment.

### 3.4.2 Severn Estuary SSSI

This is a Nationally important site which supports immense tidal range (the second highest in the world) and classic funnel shape make the Severn Estuary unique in Britain and very rare worldwide. The intertidal zone of mudflats, sand banks, rocky platforms and saltmarsh is one of the largest and most important in Britain. The estuarine fauna includes: internationally important populations of waterfowl; invertebrate populations of considerable interest; and large populations of migratory fish.

No habitat loss is anticipated due to the proposed development however, owing to the proximity of the SSSI to the Site, the proposed development does have potential to result in in-direct impacts on the designated site(s) during the construction and operational phases of the development through Noise, disturbance and Air Quality. Therefore, this site(s) will be considered further in this assessment.

### 3.4.3 Gwent Levels Rumney and Peterstone SSSI

This SSSI is a National important site which is rich in plant species and communities, many of which are rare or absent in other Levels systems. This is due to the variety of reen types and their management regimes and the timing of the management which results in a staggered programme across the Levels. The regular maintenance of some reens provides conditions for submerged plant species such as hairlike pondweed *Potamogeton trichoides* and openwater emergents such as arrowhead *Sagittaria sagittifolia* an opportunity to flourish.

There is no connecting habitat to SSSI and the distance from the Site (1.5km north-west) is considered to be sufficient to avoid potential significant impacts (direct and indirect) therefore, the SSSI has been scoped out of further assessment.

### 3.4.4 Cardiff Heliport Fields SINC

This is a Locally important site which supports a 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.

There is no connecting habitat to the SINC and the distance from the Site (800m south-west) is considered to be sufficient to avoid potential impacts therefore, the SINC has been scoped out of further assessment.

### 3.4.5 Lamby Salt Marsh SINC

This is a Locally important site which supports salt marsh vegetation including a number of locally notable species, and the river is important for migratory fish, Otters, and wildfowl.

There is no connecting habitat to the SINC and the distance from the Site (1km north-west) is considered to be sufficient to avoid potential impacts therefore, the SINC has been scoped out of further assessment.

### 3.4.6 Pengam Moors SINC

This is a Locally important site which supports network of drainage channels, with the locally rare plants Sea Clover and Brackish Water Crowfoot.

There is no connecting habitat to the SINC and the distance from the Site (100m north-west) is considered to be sufficient to avoid potential impacts therefore, the SINC has been scoped out of further assessment.

### 3.4.7 River Rhymney SINC

This is a Locally important site which supports salt marsh vegetation including a number of locally notable species, and the river is important for migratory fish, Otters, and wildfowl.

There is no connecting habitat to the SINC and the distance from the Site (1km north-west) is considered to be sufficient to avoid potential impacts therefore, the SINC has been scoped out of further assessment.

### 3.4.8 Tidal Sidings SINC

This is a Locally important site which supports a 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.

There is no connecting habitat to the SINC and the distance from the Site (800m south-west) is considered to be sufficient to avoid potential impacts therefore, the SINC has been scoped out of further assessment.

### 3.4.9 Birds

No buildings or habitat which may have suitability for nesting birds are proposed to be removed from the Site as part of the proposed development.

As no impacts to birds are predicted birds are scoped out of further assessment.

### 3.4.10 Bats

Four buildings within the Site have been identified as having Low suitability for bat roosts. These buildings are not proposed to be removed from the Site as part of the construction.

As no impacts to bat roost are predicted bats are scoped out of further assessment.

### 3.4.11 Japanese Knotweed

Japanese Knotweed is a Schedule 9 species of Wildlife and Countryside Act 1981 which was not recorded within the Site and Celsa land ownership. Therefore it is scoped out of further assessment.

### 3.4.12 Receptors Scoped Out of Further Assessment

The following receptors have been scoped out from being subject to further assessment because the potential effects are either absent or not considered likely to be significant:

- Plants due to an absence of any notable or legally protected species within the application Site.
- Fish due to an absence of suitable habitats for any notable or legally protected species within the application Site.
- Invertebrates due to an absence of suitable habitats for any notable or legally protected species within the application Site.
- Birds to the lack of suitable habitat within the Site or surrounding area.
- Bats to the lack of suitable habitat within the Site or surrounding area.
- Invasive non-native species (Japanese Knotweed) due to not currently being present within the Site.
- Amphibians to the lack of species records in the local area and a lack of suitable habitat within the Site or surrounding area.
- Reptiles to the lack of species records in the local area and a lack of suitable habitat within the Site or surrounding area.
- Badgers to the lack of species records in the local area and a lack of suitable habitat within the Site or surrounding area.
- Other Mammals due to the lack of suitable habitat within the Site or surrounding area.

**Table 3.3 Summary of Important Ecological Features Subject to Detailed Assessment**

| Ecological Feature | Scale at which Feature is Important | Comments on Legal Status and/or Importance |
|---|---|---|
| Severn Estuary Ramsar site SSSI/ SAC/ SPA | International or European | Directive 79/409 on the Conservation of Wild Birds |
| Severn Estuary SSSI | National | Wildlife and Countryside Act 1981 (as amended). |

# 4.0 Detailed Project Description

## 4.1 Shredding Plant Process Description

The maximum waste throughput at the Site will be 320,000 tonnes per annum. The Operator deals exclusively in scrap metal recycling

Suitable waste streams, including depolluted and dismantled end of life car shells, are transferred by mechanical grab to the infeed conveyor of the main shredder. The shredder includes an electrically driven rotating drum. There are hammers fitted on the rotating drum with cutting anvils on the entrance to the shredding chamber. Shredded materials then pass through sizing grids below the rotor. The rapid rotation of the drum shreds the metals. Baffle plates are arranged above the drum to facilitate enhanced shredding.

- An automatic water injection system. Air containing particulate matter is dampened down with an automatic water injection system into the shredding chamber. The auto system only injects water when it is required by reading the load of the shredder, minimising water usage to that required in the shredding chamber.
- Air sifter. The shredded metals are transferred by conveyor to an air sifter, which separates materials into a heavy fraction (i.e. the metals) and a light fraction (i.e. shredded contraries such as plastic, foam and small pieces of textiles etc).
- Bag filter. The air used in the air shifter for materials separation is subsequently passed through a cyclone to a bag filter for cleaning and particulate capture and removal. Cleaned air is discharged to atmosphere via a dedicated stack. Periodically the bag filter is cleaned by reverse jet pulse. The bag filter incorporates a continuous monitoring system that measures pressure differential and alarms in the event that the filter efficiency decreases at all, to ensure that particulate emissions to atmosphere are maintained at <5mg/Nm$^3$ at all times. All captured particulates (from the cyclone and bag filter) are removed from the Site for authorised disposal.
- The light fraction separated by the air sifter is transferred via a covered conveyor and overband magnet to a sizing screen where various sizes are passed over eddy current separators. The non-ferrous metals separated by the eddy current separator are referred to as Zorba (i.e. mixed non-ferrous metals) and are stored in a dedicated bay for supply to off-Site customers; whereas the residual materials, referred to as the Shredder Light Fraction (fines, plastic, foam, textiles etc) are collected in a separate and roofed bay.
- The light fraction (i.e. residual waste) comprises granular fines and a mixture of fibres, plastics, residual metals and other non-metallic waste that have not been removed by the process. As the residual waste is produced, it is pulled to the front of the bay to allow the other material to collect. This way the oldest material is removed first (i.e. first in, first out).
- The heavy fraction (ferrous and non-ferrous metals) is conveyed out of the air sifter via a rotary drum magnet, producing a ferrous metals stream and a non-ferrous metals stream. The non-ferrous metal stream is transferred via a conveyor and overband magnet to a sizing trommel where various sizes are passed over eddy current separators. The non-ferrous metals separated by the eddy current separators are referred to as Zorba (mixed non-ferrous metals) and are stored in a dedicated bay for supply to off-Site customers; whereas the residual materials referred to as Shredder Heavy Fraction are removed off-Site for further processing due to the heavy fraction high content of recoverable metallics.
- The ferrous metals stream is transferred via a picking station for removal of any contaminants onto a ‘stacking conveyor’ to the ‘shred stockpile’ for storage and supply to off-Site customers as high purity ferrous, with a customer specification requirement of ‘free from dirt, free from non-ferrous metals and foreign material and excludes excessive moisture, introduced loose cast iron, incinerator material, grindings, swarf, turnings and borings’.

## 4.2 Likely Direct, Indirect or Secondary Impacts

### 4.2.1 Description of Development

The proposed development encompasses works on approximately 4.0ha of land and information on the probable changes in traffic volume and the extent of the Affected Road Network (ARN) are provided in shadow HRA Report. This includes consideration of changes in total traffic flows and Heavy Goods Vehicles (HGVs) during construction and operation of the proposed development. Predicted changes in traffic flow indicate the proposed development, during construction, is unlikely to lead to a level of change that requires further assessment as the criteria for such assessment are not met. However, once constructed, the proposed development is likely to be associated with an increase in traffic flows (specifically HGVs) on the wider road network including an increase of up to 274 HGVs (7% increase) at Link 9 Rover Way North.

There is no land-take proposed from within the boundary of any of the European sites considered within this assessment. The Site is not located in immediate proximity to any European sites, but the affected road network associated with the proposed development passes within 200m of one European site (UK0013030).

# 5.0 Assessment of Effects and Mitigation Measures

Potential impacts are assessed below, considering the Proposed Site Plan (see **Drawing 02**). Sites, species and habitats which have been scoped out in Section 3 are not considered further. Impacts primarily consider the construction and operation phases of development. Except where stated no additional impacts, or cumulative impacts from other proposed developments, are anticipated post-construction. Where required, avoidance and mitigation measures forming part of the development are incorporated into the assessments.

Taking the above into account, the principal potential impacts of the proposed development are outlined in the following sections.

## 5.1 Severn Estuary Ramsar site SSSI/ SAC/ SPA

### 5.1.1 Baseline Conditions

The Severn Estuary lies on the south west coast of Britain at the mouth of four major rivers (the Severn, Wye, Usk, and Avon).

The Annex I habitats that are a primary reason for selection of this site[17]: Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks, Estuaries, Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats, Reefs, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Atlantic salt meadows. The Annex II species that are a primary reason for selection of this site: *Petromyzon marinus*; Sea lamprey, *Lampetra fluviatilis*; River lamprey, *Alosa fallax*; Twaite shad.

The constituent SSSIs provide background information on habitat types and condition on a more refined scale than the overall European sites that they support. The data from condition assessments is limited to those assessments undertaken by Natural England for those parts (SSSI units) of the European sites within England[18]. The nearest SSSIs with published condition data is the Severn Estuary SSSI (England) which lies 17km east of the proposed development. The condition report for the Severn Estuary indicates that there are ongoing concerns about overgrazing, under grazing and public disturbance. The current condition of this SSSI unit is; 92.71% Favourable, 0.08% Unfavourable – Recovering, 5.54% Unfavourable – No Change, 1.67% Unfavourable – Declining.

The site regularly supports 4.1% Great Britain and 1.7% NW European *Cygnus columbianus bewickii* Bewick's swan population and a winter species assemblage including; European white-fronted goose, *Tringa tetanus* Redshank and *Tadorna tadorna* Shelduck.

## 5.2 Predicted Effects and their Significance

The Proposed Development has the potential to be associated, in the absence of mitigation, to have potential impacts on the Severn Estuary Ramsar SSSI/ SAC/ SPA and associated species.

### 5.2.1 Designated Sites

The proposed development has been assessed to not result in direct effects on habitats, but does have the potential, in the absence of mitigation, to be associated with indirect effects. Without appropriate design and controls, construction of the proposed development has the potential to result in changes in noise, to result in

[17] European Site Conservation Objectives for Severn Estuary/Môr Hafren Special Area of Conservation Site code: UK0013030

[18] https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1002284

visual disturbance to bird populations and to lead to a decrease in air quality. These indirect effects have the potential to impact the Severn Estuary Ramsar SSSI/ SAC/ SPA, as a result of:

**Construction**

- indirect effects - disturbance to key species, reduction in species density, changes in key indicators of conservation value through noise and visual disturbance.
- the movement of materials into and outside of the Site – which may generate noise (disturbance), dust and changes in air quality (environmental quality) adjacent to the Affected Road Network (ARN).

**Operation**

- The increase in traffic into and outside of the Site – which may generate noise (disturbance) and changes in air quality (environmental quality) adjacent to the Affected Road Network (ARN).

## 5.3 Mitigation and Compensation Measures

This section outlines the mitigation measures considered appropriate to avoid, reduce, mitigate or offset any potential significant effects on the ecological resource present on and within the zone of influence of the Proposed Development.

In line with current best practice and planning policy the Proposed Development has been designed adopting the Mitigation Hierarchy, which provides a structured approach to minimising impacts upon valued ecological receptors. The applicability of the hierarchy to this development are as follows:

- **Avoidance** - Avoiding adverse effects through good design should be the primary objective of any proposal. This may be achieved, for example, through either the selection of alternative designs, alterations to Site layout, or by selecting an alternative site where no harm to biodiversity would occur.
- **Mitigation** - Adverse effects that cannot be avoided should be adequately mitigated. Mitigation measures are put in place to minimise the negative impact of a plan or project during or after its completion. Examples of mitigation include the use of pollution interceptors on surface drainage schemes, dust suppression and the minimisation of light spill.
- **Compensation** - The protection of biodiversity assets should be achieved through avoidance and mitigation wherever possible. Compensation, the next step in the hierarchy, is proposed for unavoidable impacts, such as habitat losses.
- **Enhancement** - Almost all development proposals provide opportunities to enhance or create new benefits for wildlife, which should be explored alongside the application of the hierarchy of measures to resolve potential adverse effects. Examples at BGS include enhancing retained habitats within the Site installing roosting boxes for bats, and nesting boxes for birds.

Mitigation in relation to dust, noise, and risks of water pollution during construction are set out in the relevant sections of this report and will be delivered though a CEMP, which is to be agreed with the councils and other relevant stakeholders and consultees, post-consent. With these measures in place, it is likely that significant effects upon numerous receptors will reduced, as detailed in the relevant sections below.

### 5.3.1 Construction

The development does not fall within the Severn Estuary Ramsar SSSI/ SAC/ SPA and no direct habitat loss is proposed as part of the development plans.

Negative impacts on the air and potential pollution within the European sites will be avoided during construction through good practice environmental and pollution control measures employed with regard to current best practice guidance such as, but not limited to, the following:

- CIRIA C532, 'Control of water pollution from construction sites: guidance for consultants and contractors' (2001);
- CIRIA C741, 'Environmental good practice on site guide' (2015 4th Ed.); and
- Preparation and implementation of Construction Environmental Management Plan (CEMP).

Construction Environmental Management Plan (CEMP) would be developed prior to commencement of any construction work, which would outline measures to ensure that the construction phase of the works minimise the risk to both groundwater and surface water. The following would be included within the CEMP:

- During construction there will be heavy plant and machinery required on site and as a result it is appropriate to adopt best working practices and measures to protect the water environment, including those set out in Pollution Prevention Guidance (PPG1);
- In accordance with GPP2 any above ground on-site fuel and chemical storage will be bunded;
- An emergency spill response kit will be maintained during the construction works (GPP21);
- A vehicle management system / road markings will be put in place wherever possible to reduce the potential conflicts between vehicles and thereby reduce the risk of collision (GPP21);
- A speed limit will be used to reduce the likelihood and significance of any collisions;
- Drip trays will be placed under vehicles which could potentially leak fuel/oils;
- Stockpiling of soils/made ground will only occur in demarked areas which have drainage to intercept, control and manage runoff shed from stockpiles;
- The use and deployment of cut-off ditches and silt fences;
- Road cleaning;
- Any water contaminated with silt or chemicals will not be discharged directly or indirectly to the water environment without prior treatment;
- The use and placement of concrete will be carefully controlled so as not to cause a direct or indirect impact on the water environment;
- Use of cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Adequate water supply on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use of enclosed chutes and conveyors and covered skips;
- Minimising drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- Erection of solid screens or barriers around dusty activities or the Site boundary that are at least as high as any stockpiles on site;
- Recording all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook; and
- Avoid bonfires and burning of waste materials.

Noise & visual disturbance – available evidence from Cutts et al (2013)[19] provides an indication of the potential for and mechanism through which disturbance may occur. The disturbance toolkit provides information for the following interest features:

- High sensitivity (noise and visual): shelduck;
- High sensitivity (noise): redshank;
- Moderate sensitivity: curlew, grey plover, teal (using mallard as a proxy for behaviour), pintail (using mallard as a proxy for behaviour);
- Low sensitivity: dunlin, ringed plover.

No specific winter bird surveys have been undertaken as part of this EcIA therefore it has been assumed that all of the above species are present along the Severn Estuary east of the Site. The Site itself is set approximately 300m back from the Severn Estuary with a section of scrub/ trees offering some screening of the Site along the eastern edge and an area of grassland and scrub separate the Site from the edge of Estuary.

### Visual Disturbance

The Site itself is set back approximately 300m from the closest point of the Severn Estuary therefore, it is considered unlikely that Curlew, grey plover, teal, Redshank and pintail would be adversely affected by the proposed development (construction) through visual disturbance the distance these species are known to be affected by visual disturbance between 100 - 300m (Cutts et al (2013)[20]). Shelduck experiences visual disturbance under 500m so there is a potential for disturbance of this species through visual construction affects.

However, the proposed development is sited on a site which is already an active industrial area and therefore birds within the vicinity are considered likely to be habituated to the current level of visual stimulus. It is not considered likely that the construction visual stimulus would provide a significant increase.

### Noise Disturbance

A summary of changes in the predicted noise levels under operation is provided by entran Chapter 7. Noise modelling at the receptor locations indicates the following:

An assessment of the potential impact of operational noise for the asphalt plant was undertaken by entran[21] and has been used to inform the assessment of impact for the operational phase of the development. No formal acoustic appraisal has been conducted of the potential impact noise occurring during the construction phase, and consequently standardised figures for construction noise have been taken from British Standard BS 5228-1:2009 +A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

Figures from BS 5228 consider the average volume of noise from a hand-held concrete breaker to be 93dB at 10m (louder than similar equipment mounted on plant, as less insulation is typically added) and piling to be 120dB at 10m. It is typically accepted that point noise sources decrease in volume by 6dB every time the distance from the source doubles, when taken across a flat plane with no baffles/barriers. On this basis, the noise level from any potential concrete breaking on the application site boundary would be anticipated to be approximately 66dB at the boundary of the Severn Estuary site, and the pile-driving to be approximately 93db. This is approximately equivalent to a running dishwasher and a lawn mower, respectively. However, the intervening landscape between the application site and the Severn Estuary is not a flat unobstructed plane. To the east and south, the land outside the application site the landscape rises in a high bank covered in woodland. Both the

[19] Cutts et al. (2013). Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects. Institute of Estuarine & Coastal Studies (IECS), University of Hull.
[20] Cutts et al. (2013). Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects. Institute of Estuarine & Coastal Studies (IECS), University of Hull.
[21] Entran., (2022) Commercial Noise Assessment.

bank and woodland will act as an effective baffle to noise propagation, likely to significantly reduce the noise level at the boundary of the Severn Estuary site.

The landscape surrounding the application site is also industrial in character, with the application site being constructed within the grounds of an operational metals recycling facility and close to a steelworks. The existing soundscape is therefore one in which industrial noises including operating plant and metal processing are normal. Local bird populations, including those that are qualifying features for the Severn Estuary SPA, will be habituated to a considerable degree of anthropogenic noise. Background noise levels close to the application site, at NAL02 the east of the Site, were recorded to be 66dB (Table 4 entran Noise Chapter 7), although it is noted that background noise levels on the shore will likely be lower.

Potential changes to the European site are therefore considered **highly unlikely** as a result of the proposed development.

### 5.3.2 Operation

#### Noise Disturbance

A summary of changes in the predicted noise levels under operation is provided by entran Chapter 7. Noise modelling at the receptor locations indicates the following:

The ambient noise survey indicates that current activities are not clearly perceptible at the receptor locations. The combined sound levels indicate that the introduction of the proposed activities would increase the Site sound emissions by less than 1 dB. With reference to Error! Reference source not found. this area is subject to use by wintering shelduck which can be assumed to be a high sensitivity species. The level of change however is lower than the level than stated in Cutts et al (2013) to generate a response.

Potential changes to the European site are therefore considered **highly unlikely** as a result of the proposed development.

## 5.4 Cumulative Effects

The Cardiff Council Planning Portal was searched for any active or proposed applications which could present any potential cumulative effects. No recent applications (refused or not yet determined) were found through the portal which had the potential for cumulative effects.

There is committed development at the current Cardiff Motocross Centre MX site (Outline Planning Permission (21/02182/MJR) granted) for the removal of fill material and the construction of up to 50,000 sqm of industrial accommodation (b8 use class), new access roads and associated landscaping works which is adjacent to the Site; 50m to the east.

Construction impacts are temporary in nature and dependent on activities on any given day, with the likelihood of activities coinciding at a single location being limited. Any cumulative noise-related impacts that may exist are limited to prolonged exposure to risk of effects rather than heightened risk on any given day (e.g. two sites may break concrete at different times, increasing the duration of noise).

The completion of the industrial accommodation development to the east of the application site would ultimately provide a significant baffle to any construction noise arising from the application site. In addition the proposals incorporate the construction of a large bund to provide visual and acoustic screening for the industrial accommodation development from the coast. Should the industrial accommodation development be completed first, any risk of construction noise from the application site having a significant negative impact on the Severn Estuary SSSI/ SPA/ SAC/ Ramsar sites would be significantly reduced. The proposed development is not considered likely to result in significant effects on the Severn Estuary SSSI/ SPA/ SAC/ Ramsar sites when considered in combination with other plans and projects, with respect to noise and acoustic impact.

Review of the APIS website has indicated that the background level of $NO_x$ (18.39µg/$m^3$) at the nearest point of this site to the Affected Road Network (ARN) in 2019 is lower than the relevant critical level (30µg/$m^3$). This indicates that the assumed background concentrations of pollutants in the atmosphere are in the absence of committed development below the level at which direct adverse effects on receptors may occur according to present knowledge. With committed development, concentrations of $NO_x$ at the nearest point of this site to the ARN in 2023 are predicted to be ≤36.95µg/$m^3$ and are predicted to exceed the relevant critical level value in proximity to Rover Way North in the absence of the proposed development. The project is predicted to add a further ≤1.55µg/$m^3$ (greatest level of change) to this which would lead to a predicted continued exceedance of the relevant critical level value at the nearest point of this site to the ARN.

Over time this fertilisation effect could result in reduced species diversity within the meadow, as less competitive plant species lose their advantage as nutrient levels increase. However, it is considered highly unlikely that the effect attributable to the portion of the increased nutrient load arising from the proposed development would be measurable.

## 5.5 Enhancement

Statutory Pre-Application response from Cardiff Council (Enquiry ref: SPA/22/00014/MJR, dated 13th April 2022) stated:

*"Future Wales (Policy 9) seeks all development to improve the resilience of ecosystems (similar to paragraph 6.4.9 of PPW) and whilst it is acknowledged that the context of the industrial nature of the site may provide limited opportunity for ecology enhancement it should be considered …"*

The application site is within an active industrial site and therefore opportunities for appropriate enhancement are limited. If there are any opportunities to increase the boundary planting this could be a beneficial enhancement to the Site with the additional benefit of additional screening, planting that could be considered include; Hawthorn, hazel, holly, spindle, crab apple, field maple, beech, blackthorn, dog rose, dogwood, elder, field and dog rose, honeysuckle (as an addition to other plants) guelder rose, wayfaring tree, wild service tree, wild privet and oak.

## 5.6 Summary of Effects

A summary of potential impacts, proposed mitigation, residual effects and, where relevant, proposed compensation measures is provided for each important ecological feature included in the assessment in **Error! Reference source not found.** Assuming the mitigation and enhancements are implemented as described, no further residual impacts are anticipated with regards to species as a result of the proposal.

**Table 5.1: Summary of Potential Impacts, Proposed Mitigation, Residual Effects and Proposed Compensation Measures**

| Ecological Feature | Potential Impacts | Significance (pre-mitigation) | Proposed Mitigation | Means of Delivering Mitigation | Significance of residual effects |
|---|---|---|---|---|---|
| Severn Estuary SSSI | Changes in air quality resulting in changes to the distribution of interest features or the habitats on which they depend.<br>Changes to noise and visual disturbance to birds within the SPA during construction leading to displacement of feeding or roosting activity. | Minor<br><br>Importance: National;<br>Level of impact: Negligible adverse | Appropriate measures to protect the designated site and qualifying features will be detailed in the CEMP; and<br>Standard good-practice methods of working. | CEMP - Planning Condition | Absence of Significant effect |
| Severn Estuary SPA/ SAC/ Ramsar | Changes in air quality resulting in changes to the distribution of interest features or the habitats on which they depend.<br>Changes to noise and visual disturbance to birds within the SPA during construction leading to displacement of feeding or roosting activity. | Minor<br><br>Importance: National;<br>Level of impact: Negligible adverse | Appropriate measures to protect designated site and qualifying features will be detailed in the CEMP; and<br>Standard good-practice methods of working. | CEMP - Planning Condition | Absence of Significant effect |

# 6.0 Conclusions

This report describes the baseline ecological conditions at the Site and provides an evaluation of the ecological resources that occur within the Site or have potential to be affected by operations within it. It also describes in detail the potential ecological impacts resulting from the proposed development and describes the mitigation and avoidance measures that are required to reduce the magnitude of these effects.

The application site is industrial in context, located east of Cardiff town centre north of the Tremorfa Industrial Estate. As a working Asphalt and Recycling plant the Site is dominated by unvegetated bare ground with occasional patches of sparse vegetation.

The ecological receptors that have been identified include designated sites (Severn Estuary SSSI, Severn Estuary Ramsar site/ SPA/SAC, Gwent Levels Rumney and Peterstone SSSI); LWS close to Site (Cardiff Heliport Fields SINC, Lamby Salt Marsh SINC, Pengham Moors SINC, River Rhymney SINC and Tidal Sidings SINC); there are no habitats of principal importance or any populations of protected, rare or notable species groups associated with the site.

The Site is of limited intrinsic ecological and nature conservation value comprising of industrial landscape dominated by bare unvegetated ground with occasional . However there are a number of potential impacts on receptors associated with the development of the Site which migration has been designed to avoid;

- indirect effects - disturbance to key species, reduction in species density, changes in key indicators of conservation value.

Broadly such effects may be associated with:

- construction/operational activities with the potential to affect the Severn Estuary (Wales) SPA through noise and visual disturbance; and
- the movement of materials into and outside of the Site – which may generate noise (disturbance), dust and changes in air quality (environmental quality) adjacent to the Affected Road Network (ARN).

Which will be mitigated for through the implementation of a Construction Environmental Management Plan (CEMP).

Considering the:

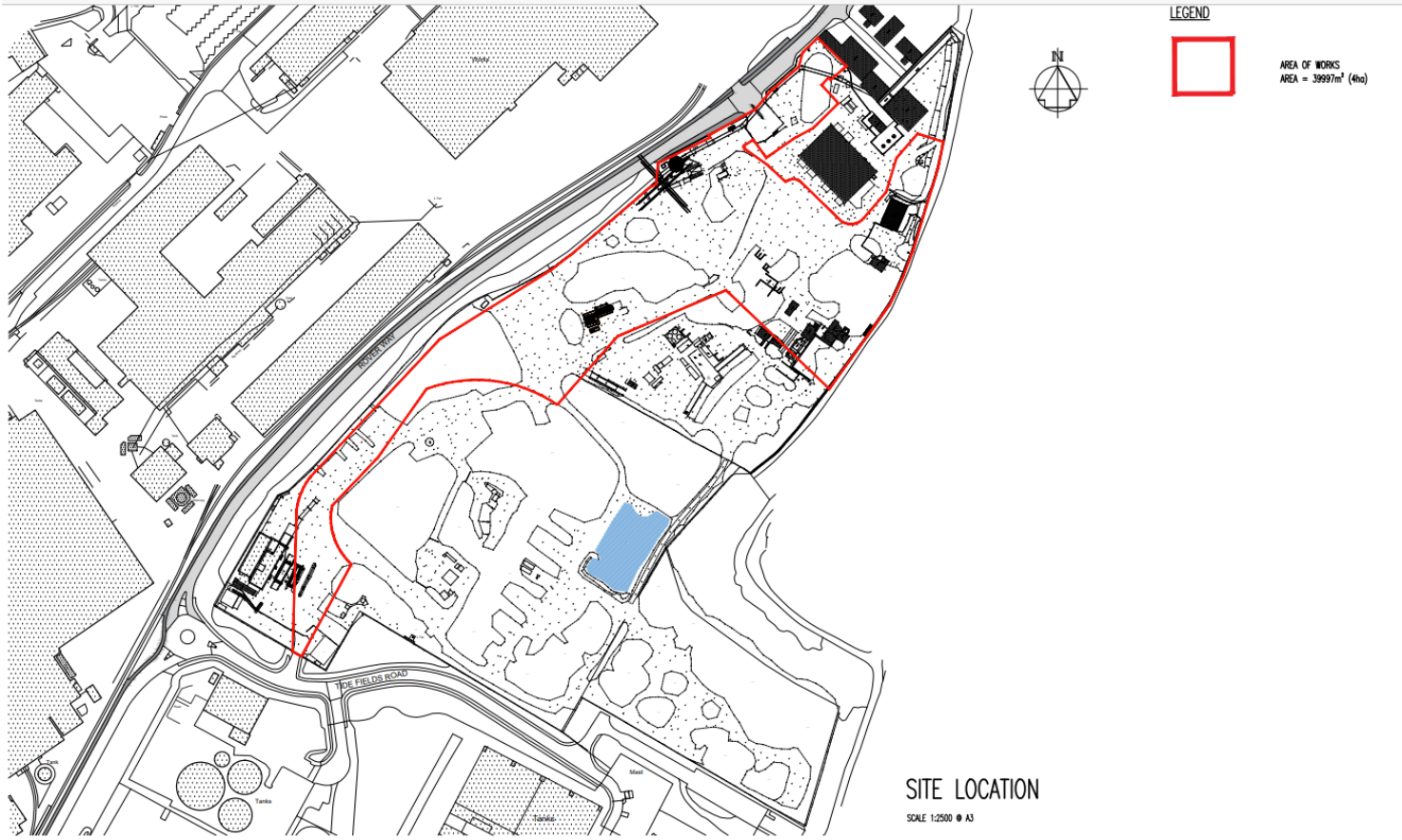
- Detailed ecological baseline;
- The integrated and embedded ecological mitigation and enhancement measures; and
- The assessment of likely significant effects as set out in Section 8 of this EcIA

Taking account of the avoidance, mitigation and compensation measures outlined, no residual likely significant effects are predicted to result from the construction or operational phases. Mitigation measures will be identified in a Construction Environmental Management Plan.

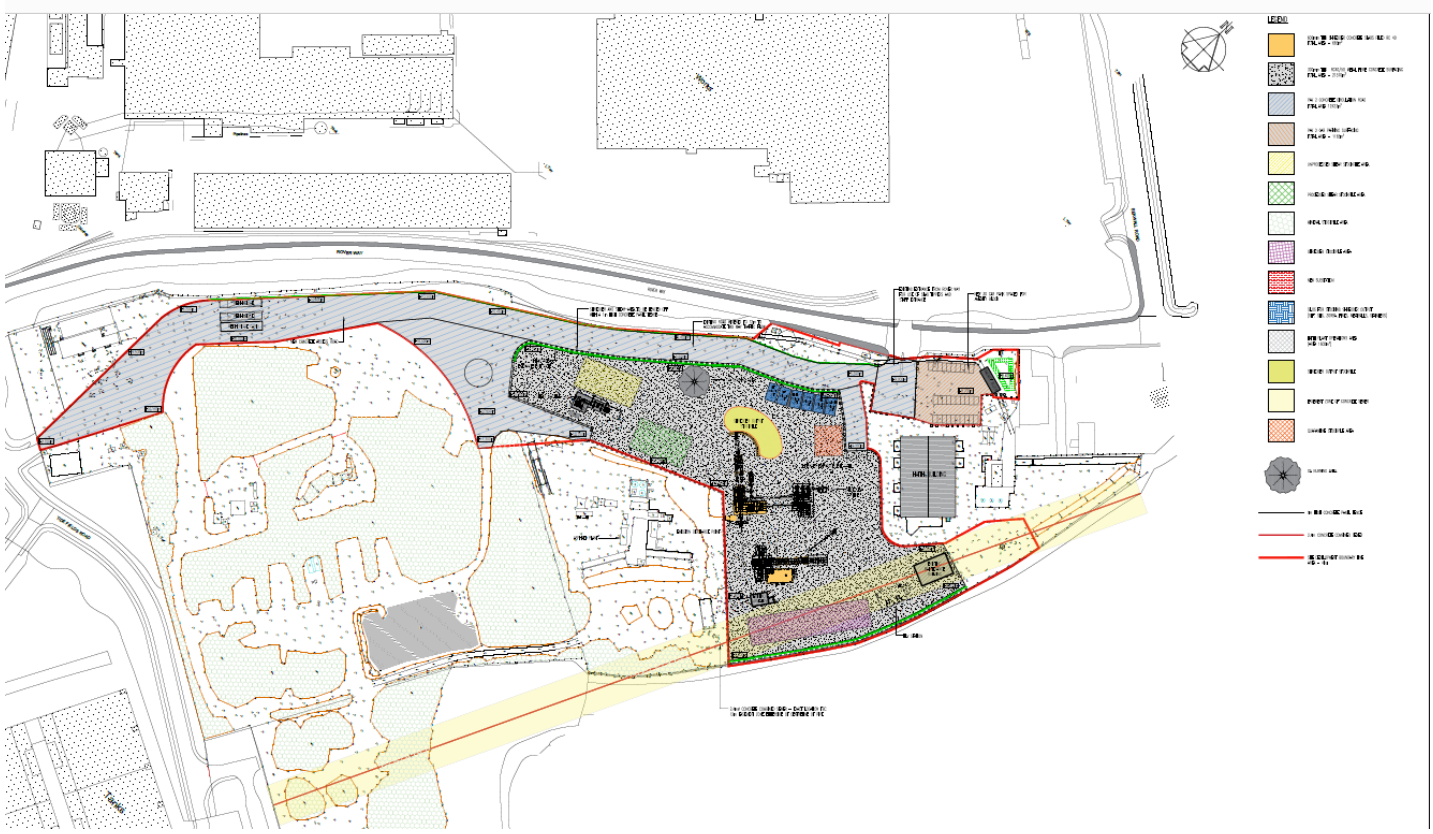
No significant impacts resulting from cumulative effects of other developments are anticipated.

# DRAWINGS

Drawing 01 – Site location



Drawing 02 – Proposed site plan



# APPENDIX A

Relevant Legislation and Planning Policy

# APPENDIX B

Preliminary Ecological Assessment Report

# APPENDIX A

## Relevant Legislation and Planning Policy

# Relevant Legislation and Planning Policy

## Legislation

A summary of legislation relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original legislation should be consulted for definitive information.

### Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb[1] wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

### Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

### Protection of Badgers Act 1992

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

---

[1] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

### Natural Environment & Rural Communities (NERC) Act 2006

Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity to have due regard for biodiversity and nature conservation during the course of their operations. Public authorities include government departments, local authorities and statutory undertakers.

Section 41 of the Act (Section 42 in Wales) requires the publication of a list of habitats and species publish which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.

Note that Sections 40 and 42 were superseded in Wales by the Environment (Wales) Act 2016 (see below).

### Environment (Wales) Act 2016

The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 Section 6 of the Act introduces a new biodiversity duty, which replaces and enhances the biodiversity duties set out in the NERC Act 2006 and requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems.

Section 7 of the Act lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales.

## Planning Policy

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information. For local planning policy relevant to biodiversity the relevant local plans should be consulted.

### National Planning Policy (England)

The National Planning Policy Framework (NPPF)[1] sets out guidance for local planning authorities and decision-makers in how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05[2], the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. Specific policies relating to habitats and biodiversity are set out in paragraphs 174 and 179-182 of the NPPF.

Paragraph 174 states that:
*"Planning policies and decisions should contribute to and enhance the natural and local environment by:*
*a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
*b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
*c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
*d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
*e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development f) should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
*F) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate".*

Paragraph 179 states that:
*"To protect and enhance biodiversity and geodiversity, plans should:*
*a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
*b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."*

Paragraph 180 of the NPPF states that:
*"When determining planning applications, local planning authorities should apply the following principles:*
*a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
*b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
*c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
*d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."*

Paragraphs 181-182 relate to European sites (referred to as habitats sites) and state:
*"The following should be given the same protection as habitats sites:*
*a) potential Special Protection Areas and possible Special Areas of Conservation;*
*b) listed or proposed Ramsar sites; and*
*c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*

*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."*

## National Planning Policy (Wales)

Planning Policy Wales (PPW)[2] sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales. Section 6.4 of PPW relates to biodiversity and ecological networks.

[2] Welsh Government. 2018. Planning Policy Wales. Edition 10, December 2018.

Paragraph 6.4.3 of PPW states that:

*"The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement."*

It goes on to state that:

*"Development plan strategies, policies and development proposals must consider the need to:*

- *support the conservation of biodiversity, in particular the conservation of wildlife and habitats;*
- *ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;*
- *ensure statutorily and non-statutorily designated sites are properly protected and managed;*
- *safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and*
- *secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks."*

Section 6.4 goes on to set out policy in respect of:

- The Biodiversity and Resilience of Ecosystems Duty, as set out in Section 6 of the Environment (Wales) Act 2016;
- Designated Sites, including:
    - Sites of Special Scientific Interest;
    - Special Protection Areas, Special Areas of Conservation and Ramsar Sites;
    - Proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; and
    - Non-statutory Designations.
- Protected Species; and
- Trees, Woodlands and Hedgerows.

PPW is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. TAN 5[3] deals with Nature Conservation and Planning and states in paragraph 2.4:

*"When considering policies and proposals in local development plans and when deciding planning applications that may affect nature conservation, local planning authorities should:*

- *Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;*

[3] Welsh Assembly Government. 2009. Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning. September 2009.

- *Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;*
- *Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;*
- *Ensure that appropriate weight is attached to designated sites of international, national and local importance;*
- *Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;*
- *Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;*
- *Ensure that the range and population of protected species is sustained;*
- *Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered."*

# APPENDIX B

Preliminary Ecological Assessment Report

Boyer Planning

# Proposed Celsa Shredder
# Rover Way, Cardiff

## Preliminary Ecological Appraisal

April 2022

Sturgess Ecology

# Contents



Document reference: C277/D1/V1

Cover photographs: Typical views across the Celsa site.

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

**Sturgess Ecology**
**12 Lon Ysgubor, Rhiwbina, Cardiff, CF14 6SG**
**e-mail: peter@sturgess-ecology.co.uk**
**Web: www.sturgess-ecology.co.uk**

# 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).

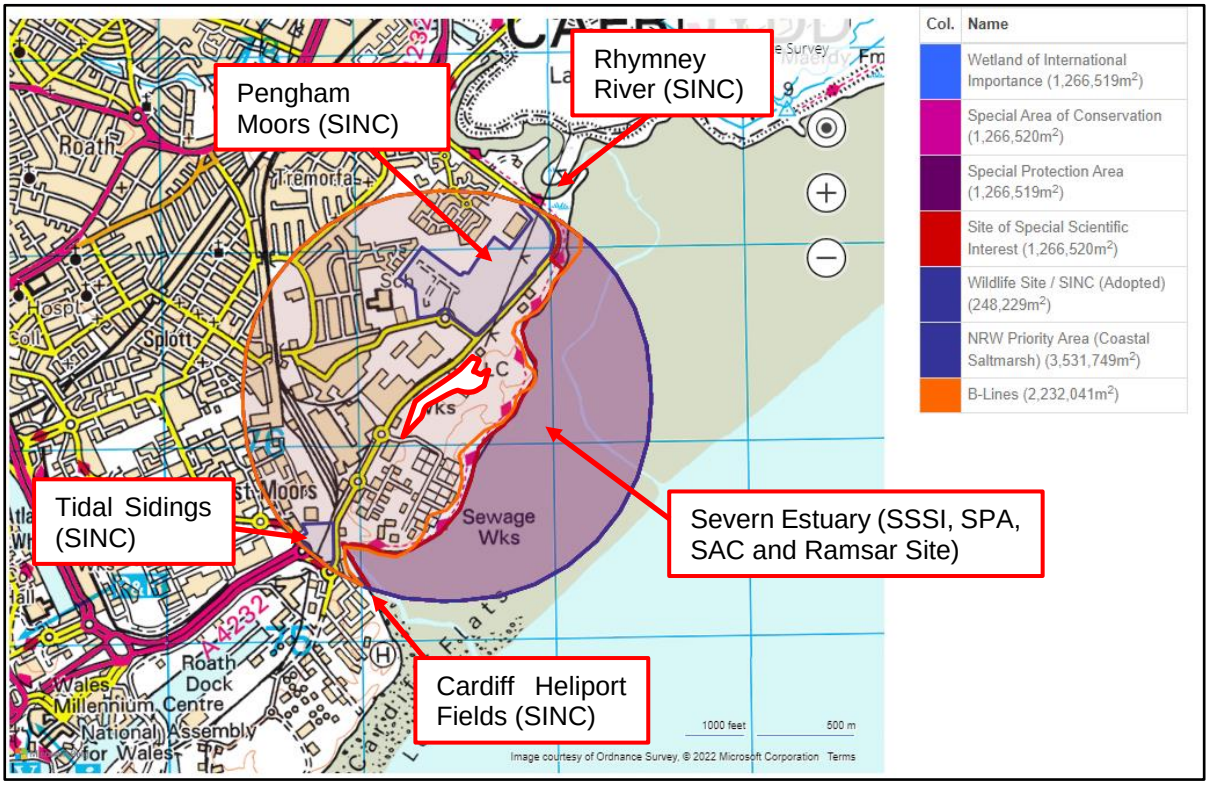



**Figure 2. Sites of Importance for Nature Conservation within SEWBReC search area**

### *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.

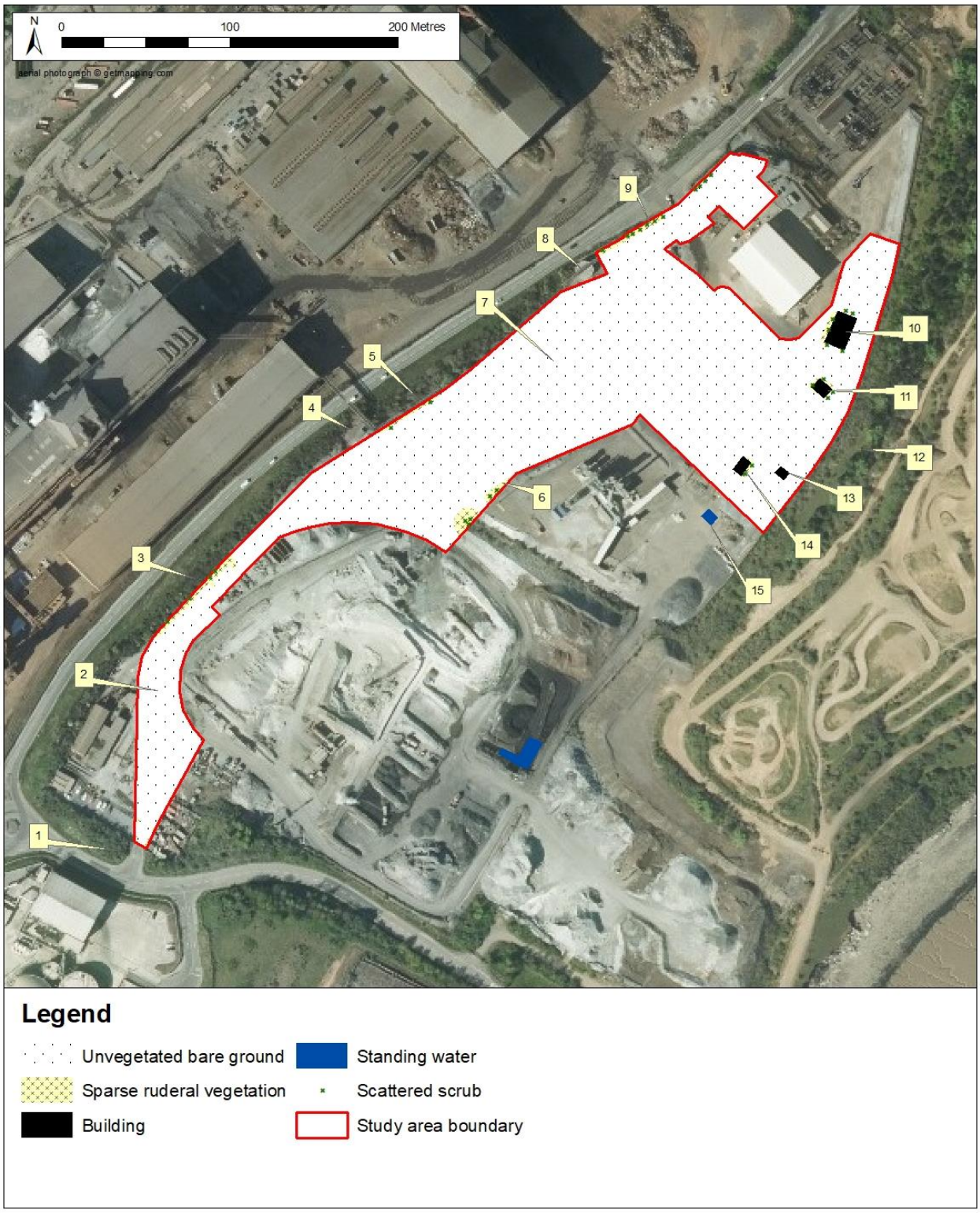



**Figure 3. Habitat survey plan**

**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) |

## EUROPEAN OFFICES


**AYLESBURY**
T: +44 (0)1844 337380

**BELFAST**
belfast@slrconsulting.com

**BIRMINGHAM**
T: +44 (0)121 2895610

**BONN**
T: +49 (0)176 60374618

**BRADFORD-ON-AVON**
T: +44 (0)1225 309400

**BRISTOL**
T: +44 (0)117 9064280

**CARDIFF**
T: +44 (0)2920 491010

**CHELMSFORD**
T: +44 (0)1245 392170

**DUBLIN**
T: +353 (0)1 296 4667

**EDINBURGH**
T: +44 (0)131 335 6830

**EXETER**
T: +44 (0)1392 490152

**FRANKFURT**
frankfurt@slrconsulting.com

**GRENOBLE**
T: +33 (0)6 23 37 14 14

**LEEDS**
T: +44 (0)113 5120293

**LONDON**
T: +44 (0)203 8056418

**MAIDSTONE**
T: +44 (0)1622 609242

**MANCHESTER**
T: +44 (0)161 8727564

**NEWCASTLE UPON TYNE**
newcastle@slrconsulting.com

**NOTTINGHAM**
T: +44 (0)115 9647280

**SHEFFIELD**
T: +44 (0)114 2455153

**SHREWSBURY**
T: +44 (0)1743 239250

**STIRLING**
T: +44 (0)1786 239900

**WORCESTER**
T: +44 (0)1905 751310