



CHAPTER 8 ECOLOGY



8. ECOLOGY

- 8.1. This chapter provides an Ecological Impact Assessment (EclA) and presents the current ecological baseline at the application Site and informs a complete assessment of the potential effects of the scheme on those ecological features (including legally protected species) associated with the site, as defined by the information set out in this chapter.
- 8.2. It provides a description of elements of the ecological baseline, presents a scope of the assessment, defines integrated and embedded ecological mitigation and enhancement measures before considering the potential impacts of the Proposed Development, and makes further recommendations for further monitoring and management measures where required.
- 8.3. The EclA assessment methodology used has been adapted from the Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (Ref 8.1) . EclA is a process of identifying, quantifying and evaluating potential effects of development- related or other proposed actions on habitats, species and ecosystems. The findings of an assessment can aid competent authorities in understanding ecological issues when determining planning applications for consent.
- 8.4. A key consideration in scoping and subsequently assessing the impacts of any development is to define the habitats and species that need to be considered. The approach set out below is widely considered to be current best practice in terms of undertaking an EclA.
- 8.5. Ecological features (habitats, species and ecosystems) present within the Site and its zone of influence are scoped through the desk study and field survey process and their ecological importance determined with reference to a geographical context. In identifying these '*features*' or receptors, it is important to recognise that a development can affect habitats and species directly (e.g., the land-take required) and indirectly, (e.g., through noise generation or lighting).
- 8.6. The key elements of the EclA process are as follows:
- Identifying and characterising impacts;
 - Incorporating measures to avoid and/or mitigate these impacts;
 - Assessment of the significance of any residual effects after mitigation has been applied;
 - Where there are significant residual effects, identification of appropriate compensation measures to offset these; and

- Identifying opportunities for ecological enhancement.

8.7. A key principle of EclA is to identify those impacts that are ecologically significant. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting such a project (Ref 8.1).

RELEVANT LEGISLATION AND POLICY

8.8. Appendix 8.2 in Volume 2 of the ES details all the relevant legislation and policies associated with this report and covered by;

- Conservation of Habitats and Species Regulations 2017;
- Wildlife & Countryside Act 1981;
- Natural Environment & Rural Communities (NERC) Act 2006;
- National Planning Policy;
- Local Planning Policy;
- Core Strategy and Development Plan 2015-2033 January 2020; and
- Local Biodiversity Action Plan.

METHODOLOGY

Scope

8.9. The Site is located within an industrial area at Teesport. It is surrounded by industry and infrastructure on all sides though there is an area of grassland of approximately 10ha to the north west and a corridor of approximately 85m of grassland to the north east, linking to a further area of grassland of >20ha. It is approximately 500m from both Tees Dock and Dabholm Gut and 700m from the main River Tees. The majority of the Site is currently hardstanding or recently Made Ground but with some well-established semi-natural habitats, principally grassland, at the south of the site.

8.10. Detailed knowledge regarding the biodiversity associated with the site has been developed through a robust desk study and a Site UKHab survey to both confirm and note any changes that may have occurred over the course of the survey period.

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

- The habitats and plants and associated fauna (including bats, invertebrates, reptiles, amphibians, birds, badgers, common mammals) associated with the planning application boundary as shown.
- 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. This allows consideration of potential effects to biodiversity receptors associated with air quality, water, road transport and noise beyond the Sites boundaries.

Baseline Data Collection

Desk Study

8.12. The data have been used to update the scope of the survey work undertaken and to enable a full assessment of the likely impacts of the proposed activities on designated sites, habitats and species of conservation interest.

8.13. The following sources have been used as appropriate:

- INCA's in-house ecological data sets of species and habitats on Teesside;
- Multi Agency Geographic Information for the Countryside (MAGIC);
- Records and citations for designated sites (www.designatedsites.naturalengland.org.uk);
- Google Maps (www.maps.google.com);
- Bing maps (www.bing.com/maps); and
- Ordnance Survey maps (www.ordnancesurvey.co.uk) to identify any ponds within 250m of the Site, along with the presence of any significant barriers to the migration of great crested newt from these ponds to the Site itself.

FIELD SURVEY

- 8.14. A field survey of the Site was undertaken on 2nd September 2022, in suitable weather conditions. The survey was undertaken by Ian Bond CEnv MCIEEM and Mark Morris CEnv MCIEEM, both ecologists with INCA.
- 8.15. Other than areas of hardstanding, all parts of the Site were walked and assessed for their potential to support protected, priority or otherwise notable species. Habitats were defined using UK Habitats Classification. The value of the habitats was quantified using the Defra BM3.1 Biodiversity Metric (BM3.1), with the condition of the habitat blocks being differentiated from each other on the basis of the BM3.1 assessment tool (NB in some cases habitats graded into each other, in which case a judgement was made on where the appropriate boundaries lay).

Limitations

Desk Study

- 8.16. INCA has considerable knowledge of habitats and species on Teesside having worked specifically in that area for 30 years. This includes mapping habitats and specific species surveys, including on the land surrounding the site. Nevertheless, no desk study data can be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important 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

- 8.17. The field survey was undertaken at a time of year when some valued ecological receptors would not be evident, for example, priority butterfly species and nesting birds. In addition, no specific surveys were undertaken for any taxa. Instead, the presence of suitable habitat for those species was noted. Most of the plants were in a vegetative state at the time of the survey and while it is considered that by far the majority of plants could be identified to species it is possible that some, particularly vegetative grasses, may have been missed.

Assessment Approach

- 8.18. 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 (“CIEEM guidelines”) (Ref 8.2) as well as BS4202 (Ref 8.3) and BS8683 (Ref 8.4).

Important Ecological Features

8.19. 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

8.20. The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:

- International;
- National (i.e., UK/ England etc.);
- Regional (i.e., North East);
- County (i.e., Cleveland); and
- Local (i.e., within the Borough).

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

8.22. The value of habitats has been measured against published selection criteria where available. Examples of relevant criteria include: descriptions of habitats listed on Annex 1 of the Habitats Directive; descriptions of habitats of principal importance for biodiversity under Section 41 of Natural Environment and Rural Communities (NERC) Act 2006; Local Wildlife Site Selection Criteria; and Habitat Action Plans (HAPs) contained within Local Biodiversity Action Plans.

8.23. In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Reference has therefore been made to published lists and criteria where available. Examples of relevant lists and criteria include: species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive); species of principal importance for biodiversity under Section 41 of the NERC Act 2006 and Birds of Conservation Concern.

8.24. For the purposes of this assessment ecological features of local importance or greater and/or subject to legal protection have been subject to detailed assessment. Effects on other ecological features are considered unlikely to be significant in legal or policy terms.

Impact Assessment

8.25. 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.

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

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

8.27. 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.

8.28. 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; 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.

Significant Effects

8.29. 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 EclA, 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. This should not be confused with how significance is typically defined under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Cumulative Effects

8.30. There are two types of cumulative effect:

- Combined effects: when individual effects of the Proposed Development combine to create a cumulative effect; and
- Interactive effects: consideration of interactions between different effects in relation to a specific receptor.

8.31. Combined effects normally occur when different activities associated with a project act upon the same environmental receptor (e.g., the additive effect of physical disturbance from construction activities upon nesting birds may occur at the same time as transport related noise and lighting, that may act upon the same receptor(s) during the construction phase). In determining such effects, consideration would be given to the sensitivity of the receptor and the magnitude of environmental change. This is considered directly within the assessments included in this EclA and, as such, is not reported separately.

8.32. Interactive effects are assessed in relation to a specific receptor where the effect could be caused by the interactions of different types of effect from project activities even if individually these are insignificant (e.g., the interaction of noise disturbance and nesting birds).

8.33. The assessment of effects on biodiversity receptors has the potential to be exacerbated by climate change, and this has been incorporated into the approach to integrated and embedded mitigation as set out in this EclA.

Avoidance, Mitigation, Compensation and Enhancement

- 8.34. 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 would have a bearing on the required outcome which must be achieved.
- 8.35. 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.
- 8.36. It is important for the EclA to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:
- Avoidance is used where an impact has been avoided, e.g., through changes in scheme design;
 - Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
 - Compensation describes measures taken to offset residual effects, i.e., where mitigation in situ is not possible; and
 - Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

BASELINE ECOLOGICAL CONDITIONS

UK Habitats Classification Survey

- 8.37. The Site is currently in two parts separated by a road. The northern part (~15ha) is a sealed surface which is used for storage. Several small buildings are present on Site, prior to the commencement of any work being undertaken on Site, a Bat Risk Assessment will be conducted to reliably confirm the absence of roosting bats. South of the road the site is vacant land, part of which is recently made land, which is effectively bare ground. A further part has had the vegetation scraped off within the past 2-3 years but has now been colonised by a variety of mainly ruderal plant species. The majority of the remaining land

is grassland of varying quality, with a patch of scrub in one area and scrub forming slightly the majority of the vegetation on the embankments on the south and south-east perimeters. A UK Habitats Classification map is shown in Appendix 8.3 Volume 2 of the ES, with a description of each of the habitat blocks, other than sealed surface, given below.

Habitat Block 1

- 8.38. This is mainly bramble *Rubus fruticosus agg.*, scrub with some elder *Sambucus nigra*, and *Cotoneaster sp.* Some young trees were present in the form of whitebeams, *Sorbus sp.*,
- 8.39. No trees were found to offer potential bat roosting opportunity. The habitat does offer bird breeding habitat.
- 8.40. An image of this habitat block can be found in Figure 8.1.



Figure 8.1: Habitat Block

Habitat Block 2

- 8.41. This is an area of Made Ground which has recently been infilled with iron slag, raising the ground level about the habitat blocks to the south. It has become vegetated in part, almost exclusively with Narrow-leaved Ragwort *Senecio inaequidans*, but it is in effect bare ground therefore it has been classed as artificial, unsealed surface in the BM3.1 assessment. An image of this habitat block can be found in Figure 8.2.



Figure 8.2: Habitat Block 2

Habitat Block 3

8.42. This area has had the vegetation scraped off, probably 2-3 years ago, to reveal a clay substrate. It is now a mixture of bare ground with a variety of ruderal species of which White Melilot *Melilotus alba*, is the most abundant. However, grass is re-colonising and Birds-foot Trefoil *Lotus corniculatus* is frequent. It is therefore considered as other neutral grassland as a best-fit with UK Habitats Classification. This habitat block is shown in Figure 8.3



Figure 8.3: Habitat Block 3

Habitat Block 4

This comprised tall, species-poor grassland, with the grass species being principally Cocksfoot *Dactylis glomerata*.

Habitat Block 5

8.43. Herb-rich grassland with a shorter sward than the surrounding grassland areas as the grass species is principally Red Fescue *Festuca rubra*. White Melilot is abundant and both Wild Carrot *Daucus carota*, and Birds-foot Trefoil are frequent in the sward. Each of Yarrow Achillea *millefolium*, Kidney Vetch *Anthyllis vulnerata*, Wild Parsnip *Pastinaca sativa*, and Black Medick *Medicago lupulina*, are at least occasionally present, with further herb species present at a lower level of abundance. Two small specimens of Himalayan Cotoneaster *Cotoneaster simonsii*, were present. This is listed as an invasive plant species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

8.44. A photograph of this habitat block is shown in the foreground of Figure 8.4



Figure 8.4: Habitat Block 5, with part of the embankment (habitat Block 6) in the background

Habitat Block 6

8.45. This habitat block is the embankment which forms the southern and eastern perimeters. It currently comprises around 50% scrub so could arguably be classed as grassland, though the area of scrub will inevitably increase over time therefore it has been classed as mixed scrub. The grassland component of this habitat block is species-poor with few herb species. The embankment can be seen in the background on the left hand side of Figure 8.4

Habitat Block 7

8.46. This is again species-poor grassland with few herbs and no marked variation in sward height. Low growing scrub comprises approximately 5-10% of this habitat block.

Habitat Block 8

8.47. This comprises two narrow strips of verge between the road and the car parking area. These have been colonised by a variety of ruderal plant species of which Wall Lettuce *Diplotaxis muralis*, Weld *Reseda luteola*, Barren Brome *Bromus sterilis*, Red Valerian *Centranthus rubra*, and Mayweed *Tripleurospermum inodorum*.

Species

Badger Meles meles

8.48. There was no sign of badgers on the Site. There are no records of badgers from any of the industrial areas on South Tees, with the closest known current population being on the Eston Hills, 5km to the south and separated from the site by urban and industrial areas. Therefore, badger is scoped out of further assessment.

Otter Lutra lutra

8.49. While otter has been recorded from Dabholm Gut, approximately 500m to the north and on a watercourse approximately 800m to the south-west, there is no suitable habitat for the species on the Site and no connecting watercourses. It cannot be ruled out that the species would not traverse the Site when moving between watercourses, but any such events are likely to be exceptional.

Bats

8.50. The Site could provide some foraging opportunities for bats but given the relatively isolated nature of the Site, surrounded by industrial operations and the high levels of artificial lighting in the surrounding area, it is likely that any use by bats is very low. Several small buildings are present on Site, which are likewise considered to have low roosting potential for bats for the same reasons. Roosting potential of

bats in the onsite buildings will be assessed through a Bat Risk Assessment. Should the potential for roosting bats be other than negligible, the appropriate level of survey effort will be undertaken, in line with the “Bat Survey Guidelines 3rd edition.”, to determine presence/absence of bats.

Great Crested Newt Triturus cristatus

8.51. There are no ponds on the Site, with the closest pond being 200m to the south. Great Crested Newt (GCN) is considered to be absent from the South Tees area. The closest known record is from 1988 from a pond on the golf course 3km to the north. INCA carried out GCN surveys of all the ponds in the South Tees area in 2007, including the pond 200m to the south, and all proved negative. More recently (2018-2022) INCA has undertaken eDNA surveys at several ponds on industrial sites on South Tees and all have proved negative. GCN is therefore scoped out of further assessment.

Reptiles

8.52. Common Lizard *Zootoca vivipara*, is established along the dunes and coastal grassland from South Gare to Redcar and small numbers extend into the northern perimeter of the former steel works site, 2km to the north of the Site. The closest known record to the Site is of a single Common Lizard found at the Northumbria Water Pumping Station in 2009, 1km to the north (Northumbrian Water data). However, a reptile survey of the area surrounding the Northumbria Water Pumping Station was carried out by INCA in 2021 with negative results. While there is some potentially suitable habitat for Common Lizards on the Site, given that the Site is largely surrounded by developed land and over 2km from the closest current records, it is considered unlikely that they would be present, and they are scoped out of further assessment.

Water Vole Arvicola amphibius

8.53. Water Vole is considered to be absent from the South Tees area. The closest Water Vole records to the Site from the past decade being from Spencer Beck, 5km to the south west, though Water Vole is not regularly present there. There is no suitable habitat for Water Vole on the site or in the surrounding area, therefore it is scoped out of further assessment.

Breeding Birds

8.54. The Site is expected to support a suite of breeding birds, both ground nesting and those which nest in scrub. Two species on the red list of “Birds of Conservation Concern 5”, Skylark *Alauda arvensis*, and Linnet *Carduelis cannabina*, were seen on the Site during the field survey and there is suitable habitat for both to breed there. The only other red-list species which the Site has the potential to support are Grey Partridge *Perdix perdix*, and Lapwing *Vanellus vanellus*. Both of these species are present on the

industrial areas to the north-east of the Site. Of Schedule 1 breeding birds, Little Ringed Plover, *Charadrius dubius*, also nests on industrial areas to the north-east and could potentially nest on the sparsely vegetated areas on the Site.

Priority Mammal Species

- 8.55. It is likely that Brown Hare *Lepus europaeus*, and European Hedgehog *Erinaceus europaeus*, will use the site, at least on occasion, but the limited amount of suitable habitat on the site means that it would form a small part of the home range for a few individuals of each species at most. Therefore, loss of habitat for those species is not considered a significant issue, nevertheless mitigation will be provided to avoid harm to those species.
- 8.56. Harvest Mouse, *Micromys minutus*, is present at Kirkleatham, 3km south-east but it has never been found on any industrial sites on South Tees. Given the absence of any nearby records and the relative isolation of the Site, Harvest Mouse is scoped out of further consideration.

Priority Amphibian Species

- 8.57. As the site is 200m from a pond that is known to support breeding Common Toads, *Bufo bufo*, some individuals may use the terrestrial habitats on the Site but given the distance from the pond this is unlikely to be significant in terms of the population, so Common Toad is scoped out from further assessment.

Priority Invertebrates

- 8.58. There is a significant amount of suitable habitat for Dingy Skipper *Erynnis tages*, on the Site. This butterfly is widespread on industrial sites on Teesside, with Teesside as a whole arguably being a national stronghold for the species. Therefore, it is assumed that the Site will support a significant population of this species. Other Lepidopteran species, which are listed as priority species, including Small Heath *Coenonympha pamphilus*, Shaded Broad-bar *Scotopteryx chenopodiata*, and Cinnabar *Tyria jacobaeae*, are likely to be present. However, such species are listed as priority species as requiring further research rather than as conservation priorities, so are not considered further in this assessment.

Invasive Non-native Plant Species

- 8.59. Two small specimens of Himalayan Cotoneaster *Cotoneaster simonsii*, have been recorded on the site. Cotoneasters are widespread on industrial sites on Teesside, and it is possible that a detailed search might find some other examples on the Site. Giant Hogweed *Heracleum mantegazzianum*, is present on land between Dabholm Gut and the Site, where it is subject to ongoing treatment. While it was not present on the Site during the field survey it is spread by seeds so could easily colonise in the future.

ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

8.60. As this is an outline planning application, details of landscaping and other mitigation measures are not available, therefore this assessment has been undertaken on the basis that all existing habitats on the Site will be removed as part of the development.

Designated Sites

Statutory Designated Sites

8.61. The Teesmouth and Cleveland Coast SPA/ Ramsar is located approximately 500m away at its closest point. Potential impacts on this European site have been considered in the accompanying Habitats Regulations Assessment.

8.62. The SPA/ Ramsar is underpinned by the Teesmouth and Cleveland Coast Site of Special Scientific Interest (the SSSI. The SSSI is designated for some features in addition to those which it shares with the SPA. These include sand dunes, saltmarsh and breeding Harbour Seals. However, none of these additional interest features are found closer than 3km from the Site. The effects that have the potential to impact on the SSSI are the same as those considered in the accompanying HRA and none of those is considered likely to impact these additional SSSI interest features given the distances involved.

8.63. No other statutory designated sites are present within a 5km radius.

Non-Statutory Designated Sites

8.64. There is a single Local Wildlife Site (LWS) within a 2km radius of the site, which is Eston Pumping Station LWS. This is a 1ha site, approximately 600m north-east of the site. It is designated for a mosaic of habitats, which are principally wetland, including reedbeds. No pathways from the site to the LWS have been identified other than airborne, however the habitats on the LWS would have low sensitivity to such as NOx and particulates, therefore it is considered that there would be no impact on the LWS.

Habitats

8.65. There are no priority habitats present on the Site. The majority of the habitats on the site were of low conservation importance. An exception is Habitat Block 5, which was a herb-rich and moderately species-rich grassland. Although herb-rich, this habitat block would not be classed as the priority habitat Lowland Meadow, as defined in the UK Habitats Classification. Nor did not meet the criterion for designation as a Tees Valley Local Wildlife Site due to a lack of diversity in the grass species. As it did not

meet the criterion for designation as an LWS, it is assessed as being of less than County significance, however it is considered to be significant at the level of the borough, i.e., Local importance.

Unmitigated Impacts

8.66. There would be a loss of habitat totalling 47.48 BDUs. This includes 3.46ha of grassland that is assessed as being of Local importance.

Mitigation

8.67. Mitigation may be possible as part of a future detailed application, both by retaining some habitats on site and through the implementation of a landscaping scheme.

Residual Impacts

8.68. As it is unclear at this stage to what extent mitigation may be possible, the residual impact is considered to be the same as unmitigated impacts, i.e. the loss of habitat totalling 47.48BDUs and the loss of 3.46ha of grassland of Local importance.

Biodiversity Net Gain

8.69. The biodiversity value of the habitats on Site, pre-construction, have been calculated using BM3.1 and is expressed in terms of Biodiversity Units (BDUs). The number of BDUs for each habitat block is shown in Table X. It should be noted that Habitat Block 5 achieved moderate rather than good condition as the number of vascular plant species per m² was eight rather than the required nine species and due to the presence of the two small examples of invasive Cotoneaster. However, had the survey been undertaken earlier in summer then it is possible that this habitat block may have averaged nine vascular plant species per m². A total of 47.48 Biodiversity Units (BDUs) are associated with the Site.

8.70. Table 8.1 shows a Summary of Biodiversity Units.

Table 8.1: Summary of Biodiversity Units				
Habitat Block	Habitat Type	Area (ha)	Condition	BDUs
1	Mixed scrub (h3h)	0.16	Moderate	1.28
2	Bare ground (u1c)	0.78	n/a	0
3	Other Neutral Grassland (g3c)	0.48	Poor	1.92
4	Other Neutral Grassland (g3c)	0.79	Poor	3.16
5	Other Neutral Grassland (g3c)	3.46	Moderate	27.68
6	Mixed scrub (0h3h)	0.93	Moderate	7.44
7	Other Neutral Grassland (g3c)	1.40	Poor	5.60
8	Other Neutral Grassland (g3c)	0.1	Poor	0.40
Total		8.10		47.48

8.71. The baseline condition of the Site totals 47.48 Habitat Units (BDUs). The Environment Act (2001) requires that development achieves a biodiversity net gain of 10%. Therefore the development will need to achieve 52.23 BDUs.

Unmitigated Impacts

8.72. To align with the Environment Act 2021 as well as national and local policy the following recommendations will be followed.

Recommendations

8.73. A hierarchical approach must first be applied:

Avoid

8.74. Consideration should be given as to whether it is possible to retain some of the existing habitats.

Mitigate (on site)

8.75. The development will include landscaping proposals, which will provide some Habitat Units. In addition, it may be possible to set-aside some non-operational area specifically for habitat creation, focusing on higher value habitats than are currently on site, for example good-quality grassland and Open Mosaic Habitats.

8.76. If it proves possible to retain some habitats on site then there is scope to enhance them, thereby providing an uplift to the value of those areas in terms of Habitat Units.

8.77. The management of enhanced, and/or new habitats would need to be secured in a Biodiversity Management Plan for a period of 30 years.

Compensate

8.78. If after avoidance and on-site mitigation has been applied there remains a net deficit of HUs, then compensatory measures will be required to achieve the remaining number. This could be in one of two forms:

a) Off-site Mitigation

To provide habitat creation/ enhancement on an alternative site, which ideally would be in the Tees Valley in order to achieve benefits to biodiversity locally.

b) Financial Compensation

Should it not be possible to achieve off-site habitat creation/ enhancement locally then there remains the option of buying Habitat Units from a national Habitat Banking scheme.

BREEDING BIRDS

8.79. All breeding birds are protected by Part 1 of the Wildlife and Countryside Act 1981 from deliberate or reckless damage; destruction of the bird's nest or eggs, killing or injury of any unfledged young, and Schedule 1 breeding birds are protected from disturbance.

Unmitigated Impacts

8.80. Works could damage or destroy bird breeding habitat, potentially causing damage or destruction of a nest, eggs and unfledged young. A Schedule 1 bird may be disturbed by the construction works.

8.81. Breeding bird habitat will be lost to the area.

Mitigated

8.82. Vegetation clearance should avoid the bird breeding season from and including March to August, or where works are to be carried out between March and August inclusive, prior to vegetation clearance, the Site will be visited by a suitably qualified ecologist within 48 hours of works commencing, to determine whether or not breeding birds are present.

8.83. Should nesting birds be found to be present then suitable measures will be implemented to avoid harm or, in the case of Schedule 1 birds, disturbance. These measures will be set out in a Method Statement.

8.84. Mitigation may be possible as part of a future detailed application, both by retaining some habitats on site and by providing opportunities for breeding birds in the landscaping scheme.

Residual Impacts

8.85. Following implementation of the above mitigation, there should be no harm to breeding birds. As it is unclear at this stage how much breeding bird habitat can be retained or created, it is assumed that there would be some loss of breeding bird territories. Given the relatively small scale of the habitats on the Site and the limited variation in habitats, the total number of breeding bird territories across all species is likely to be in high, single figures. This figure is likely to include some species of conservation concern such as Skylark and Linnet.

MAMMALS

8.86. It is likely that Brown Hare and hedgehog will occasionally be present on the Site, and it cannot be ruled out that otter might cross the Site on rare occasions

Unmitigated Impacts

8.87. Construction works could inadvertently kill or injure an animal. Reasonable avoidance measures should be followed to avoid potential impacts.

Mitigation

8.88. The following methods of working will be carried out to reasonably avoid killing or injuring mammals that may be present on site:

- Ensure that trenches and other open features 50cm deep or more have a means of escape for mammals - block open pipes to stop mammals entering them.

DINGY SKIPPER BUTTERFLY

8.89. As there is a significant amount of suitable habitat for Dingy Skipper on the Site, comprising its larval food plant Birds-foot Trefoil, in association with patches of bare ground, it is likely that the Site will hold a significant population of the species. The criterion for designation of a Local Wildlife Site for Dingy Skipper is a count of 10 or more individuals. It has not been possible to undertake a survey for Dingy Skipper during the flight season for that species but based on experience on other industrial sites, it is considered likely that the population would meet this criterion thereby making it of County importance.

Unmitigated Impacts

8.90. There is likely to be a loss of a population of Dingy Skipper butterfly, predicted to be of County importance.

Mitigation

8.91. Mitigation may be possible as part of a future detailed application, both by retaining some habitats on site and through the implementation of a landscaping scheme.

Residual impacts

8.92. As it is unclear at this stage to what extent mitigation may be possible, the residual impact is considered to be the same as unmitigated impacts, i.e., the loss of a population of Dingy Skipper of County importance.

INVASIVE NON-NATIVE PLANT SPECIES

8.93. Himalayan Cotoneaster is present on the Site and Giant Hogweed is present in the surrounding area so has the potential to colonise the Site.

8.94. Both plants are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), and it is therefore an offence to plant them or cause them to grow in the wild. While it is not unlawful for such plant to be present on a site, care must be taken to ensure that the plants do not spread as a result of any works on the Site.

Unmitigated Impacts

8.95. There is the potential for the plants to be spread through such as earthworks.

Mitigation

8.96. The Site should be re-visited no greater than 1 month prior to construction commencement to check for the current status and extent of invasive plant species.

8.97. Prior to any works that could result in the spread of the plants, a method statement will be provided to the local authority detailing measures which will be undertaken to prevent their spread.

Residual impacts

8.98. Given the mitigation measures described above, there should be no impacts from Invasive Non-native plant species.

CUMULATIVE EFFECTS

Construction Phase

8.99. Other than potential effects on European sites, which are assessed in the accompanying Habitats Regulations Assessment, the adverse effects that have been identified with the construction phase are limited to the loss of habitats and dependent species. Therefore, consideration of cumulative effects is confined to other developments in the South Tees area which are predicted to result in the loss of similar habitats and species.

8.100. The Site is surrounded to the north and south by the former steel works, which is being redeveloped by the South Tees Development Corporation (STDC). This will result in the loss of large areas of habitat, in particular grasslands of varying quality. The re-development is proceeding under a variety of planning permissions pertaining to individual sub-sites however, to prevent the net loss of biodiversity across the STDC area as a whole a Biodiversity Strategy has been devised and submitted to the Local Planning Authority. The Biodiversity Strategy outlines options for avoidance, mitigation and compensation, which will ensure no overall net loss of biodiversity. Therefore, as there would be no net loss of biodiversity from the STDC developments then there would be no cumulative effects with this development.

8.101. No other developments which have the potential for cumulative effects have been identified.

Operational Phase

8.102. The only potential cumulative effects during the operational phase are those related to air quality, which are addressed in the accompanying HRA, so are not repeated here.

CONCLUSIONS

8.103. Following the mitigation described above, the impacts of the Proposed Development are predicted to be:

- The loss of habitats totalling 47.48 BDUs.
- The loss of an area of 3.46ha of grassland of Local importance.
- The loss of a small number of breeding bird territories.
- The loss of a population of Dingy Skipper of County importance.

8.104. Avoidance or further mitigation for some, or all, of these ecological receptors may be possible through detailed design of the development.

8.105. Should avoidance and/or further mitigation not be sufficient to prevent the loss of the valued ecological receptors described above or if there is a net loss of Habitat Units, then compensatory measures will be required address any deficit.

8.106. A strategy to address any shortfall in biodiversity obligations should be submitted to the Local Planning Authority for agreement prior to development commencing and subject to such a strategy no significant adverse impacts on ecology are anticipated.

REFERENCES

Ref 8.1: CIEEM. (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine

Ref 8.2: Chartered Institute for Ecology and Environmental Managers (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine v1.2 (April 2022). Chartered Institute of Ecology and Environmental Management, Winchester.

Ref 8.3: The British Standards Institution 2013 BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6

Ref 8.4: The British Standards Institution 2021 BS 8683 Process for designing and implementing Biodiversity Net Gain – specification. Published by BSI Standards Limited 2021. ISBN 978 0 539 01986