TEESWORKS

DORMAN POINT ENVIRONMENTAL STATEMENT

VOLUME 3: TECHNICAL APPENDICES
APPENDICES TO CHAPTER D (BIODIVERSITY AND ECOLOGY)

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Chapter D: Biodiversity and Ecology

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Appendix D1: Biodiversity Metrics – Proposed Tees Estuary Partnership definitions

Biodiversity Metrics – Proposed Tees Estuary Partnership definitions (April 2020)

Application

This iteration of the Tees Estuary Partnership Biodiversity Metric is based on the Defra Biodiversity Metric 2.0 (BM2.0) publication to which the rules and definitions below have been applied to give a local interpretation. This approach has been agreed by the steering group for the STDC Environment and Biodiversity Strategy, which included representatives STDC, Natural England, Environment Agency, Redcar & Cleveland Borough Council, Lichfields, INCA, Faithful & Gould, JBA and ARUP. These rules will be applied to that strategy and, as necessary, to imminent planning applications for that site. The principle of a local variation of the BM 2.0 metric has been agreed by the steering group of the Tees Estuary Partnership.

It is noted that should the Tees Estuary Partnership consider that it is preferable to use these definitions, or subsequent iterations, for other developments elsewhere on Teesside then there is the potential to do so until such time as the national Defra metric becomes mandatory.

Rationale

The local rules on Brownfield, Grassland and Pond habitats are not necessarily a departure from the BM 2.0 metric, rather they merely provide a more detailed interpretation on the Technical Guidance provided with BM 2.0.

The rule on Swamps is a slight departure from BM 2.0. There is very little of this habitat on STDC, other than on the SSSI so this will make little difference to the overall score but importantly it does allow for the opportunity to compensate for their loss where necessary and provides an incentive the improve their condition.

<u>Brownfield</u>

Habitats are classed as Open Mosaic Habitats (OMH) only where they meet all the descriptors set out in the definition of OMH for example as stated in the BM2.0 Technical Guidance.

Two descriptors of OMH from BM 2.0 that are particularly relevant to the classification of habitats at Teesworks are that there is a known history of disturbance with soils being moved or material added and that the site contains areas of bare, *loose* substrate. While most of the land at Teesworks (and the wider Teesside area) has been altered from its natural state by the addition of industrial spoil, principally in the form of blast furnace slag, this material has been added for the purpose of forming areas of flat, hardstanding as a base for industrial operations. The nature of this material, being porous, alkaline and low nutrient makes it conducive to colonisation by a diverse and slightly specialised flora, whilst retaining some bare ground, but in its structure it does not meet the description of OMH. In many cases this material has been in situ for decades and in places has developed a very thin layer of soil so that the surface may be loose but with certain exceptions this is merely a dressing on top of hardstanding and is not disturbed.

In these calculations such habitats are considered to fit with the Phase 1 Habitat classification as “ephemeral/ short perennial”. This does not have corresponding category under the UK Habitat Classification but does fit well with the would fit with the definition under Table TS-1 of the BM 2.0 Technical Supplement as, “sparsely vegetated land – Ruderal/Ephemeral”, which gives the following definition:

"The short lived transitory habitat of low growing early successional plants of open ground such as arable landscapes, derelict urban sites, quarries and railway ballasts. This will get replaced by more stable vegetation unless disturbance of soil continues. Reasonably variable in biodiversity value dependent on species present, do often provide important pollen and nectar sources along with open ground for insects."

These Ruderal/Ephemeral habitats are classed by BM2.0 as low distinctiveness so score a "2" for distinctiveness compared to a "6" for OMH.

Where an area is effectively unvegetated but is not sealed then this is classed as the BM 2.0 category of "artificial unvegetated; unsealed". This scores zero.

The criteria that have been used for condition assessments of the brownfield habitats are attached as Appendix 1 of this paper.

Grassland

Rank grassland of any kind, which would fit with the category of "Poor Semi-improved (B6)" in the Phase 1 Habitat classification, is classed as "Modified Grassland" which scores a "2" for distinctiveness.

Where grassland is other than Poor Semi-improved, it is classed as "Other Neutral Grassland", scoring a "4" for distinctiveness, except where there is some calcareous influence from the substrate, as evidenced in the composition of the flora, in which case it will be classed as "Lowland Calcareous Grassland" scoring "6" for distinctiveness.

Swamps

The BM 2.0 Technical Guidance classes Swamps as Fen, albeit in poor condition. Fen is therefore given a score of "8" for distinctiveness, albeit multiplied by a 1 for condition, and is classed as irreplaceable habitat thereby being taken out of the metrics calculations. This is considered to be an unintended consequence as some forms of Swamp and certainly most of those on Teesside are species poor and, it is argued, would be considered as being of lower conservation importance than Fen. There needs to be the opportunity to replace them with other habitats, of equal or greater distinctiveness, where it is considered beneficial to conservation and the incentive to improve them, which is lost if they are taken out of the metrics calculations.

A distinction is therefore made here between Swamps and other Fen communities, with Swamp defined as fitting the definition in "British Plant Communities Vol . 4" (Rodwell, 1995) as; "species-poor vegetation types, generally dominated by bulky-emergent monocotyledons, characteristic of open-water transitions with permanently or seasonally submerged substrates". (On Teesside these are typically the National Vegetation Classifications of S13, *Typha latifolia* swamp; S20 *Scirpus lacustris ssp. tabernaemontani* swamp and S21 *Scirpus maritimus* swamp. However S5 *Glyceria maxima* swamp, S8 *Scirpus lacustris ssp. lacustris* swamp and S14 *Sparganium erectum* swamp also occur and would come under this category) These are the ecological equivalent of Reedbeds and are therefore scored in the same manner with a "6" for distinctiveness. Condition assessment criteria specifically for Swamp/Reedbed have not yet been drawn up so professional judgement is used in assigning a condition score to them.

Where Swamp/ Reedbed forms the fringe of an open water body and its total area is less than that of the open water then it is classed as part of the waterbody. Where the area Swamp/Reedbed is greater than that of the open water then the habitat is classed as Swamp/ Reedbed.

Appendix 1. Brownfield conditions assessment criteria used in the calculations

1.1 Open Mosaic Habitat

In addition to meeting all criteria that define OMH, these additional criteria will be used to differentiate the condition of the OMH.

1. Has a minimum of ten early-successional plant species that typify this habitat (see list to be appended)
2. Incorporates more than one early successional habitat type, in addition to bare ground
3. Incorporates a wetland feature or has topographical heterogeneity over at least 25%
4. Contains more than one substrate type
5. Significant potential for both burrowing insect species and pollinating insect species.
6. Non-native plant species cover less than 5% (other than Buddleia and Red Valerian, which can total up to 10%)

Good condition = meets four of the above criteria
Fairly good = meets three of the above
Moderate = meets two of the above criteria
Fairly poor = meets one of the above criteria
Poor = meets none of the above criteria

1.2 Vacant/ derelict/ bare ground (=Ephemeral/ short perennial)

This differs from OMH in terms of the substrate, which is not loose. It is typical of the flat areas of made-ground on industrial Teesside with compacted but unsealed substrates, principally blast-furnace slag but in some cases crushed building materials. Condition depends principally on the diversity and coverage of typical herb species though like OMH some scattered bare ground is a positive factor.
Where grasses comprise >50% of the habitat block then it should be assessed under the relevant grassland category.

The following factors are used to determine the condition:

1. The number of early-successional plant species that typify this habitat (see list to be appended)
2. The percentage cover of early-successional herb species
3. The mixture of bare ground. Bare ground should be scattered. Where it occurs in blocks of >10% of the area it is a negative factor. Any blocks of bare ground of 0.25ha or larger should be recorded as a separate habitat.
4. The percentage cover of non-native, invasive plant species. (NB except Buddleia and Red Valerian. These can total up to 10% between them with anything above that being counted in the total invasive species cover)

The table below indicates the typical ranges for each condition category but as there are various permutations then professional judgement is needed in the assessment.

	No. species	% cover	Bare ground	Invasive species
Good	10 or more	75-90	10-20% unevenly distributed	<5%
Fairly Good	8 or more	65-90	10-20% unevenly distributed	<5%
Moderate	6 or more	50-90	10-40% unevenly distributed	<10%
Fairly Poor	4 or more	40-90	40-75%	<20%
Poor	Less than 4	10-25%	>75%	>20%

1.3 Unvegetated, unsealed surface.

This is defined as areas where the total vegetation cover including bryophytes and lichens is <10%. These areas do not score in the metric.

Appendix D2: INCA Report 201814 Preliminary Ecology Appraisal – Grangetown Prairie

INCA Report 201814 Preliminary Ecological Appraisal – Grangetown Prairie

Introduction

INCA was commissioned by the South Tees Development Corporation (STDC) to undertake a Preliminary Ecological Appraisal (PEA) of land at Grangetown Prairie (the site). The purpose of the PEA was to determine the current ecological value of the site and to identify any valued ecological receptors that are present or which might potentially be present or which might otherwise potentially be impacted by development on this site. This includes designated sites and any species to which legislation applies, such as protected species or invasive non-native plants. It also includes priority habitats and species, which are those habitats and species listed under Section 41 of the Natural Environment and Rural Communities Act (2006) as being of principal importance for the conservation of biodiversity in England. Priority habitats and species can be a material planning consideration.

In addition to identifying valued ecological receptors the PEA also identifies any ecological constraints to development and any opportunities for mitigation and ecological enhancements.

As part of the site visit, an environmental DNA test was undertaken for Great Crested Newts.

Details of proposed development for the site were not known at the time of the assessment; therefore this is not an Ecological Impact Assessment (EcIA) of a specific development.

The site is located on the south side of the road between Eston Road and Tees Dock Road with a central grid reference of NZ546214. The site boundary is shown in Figure 1. The site is approximately 65ha in extent and entirely comprises former industrial land as can be seen from the historical map in Figure 2, dated 1960. There were three sets of buildings remaining on the site, none of which are in use and all of which are in various states of disrepair.

Figure 1. The site boundary shown in red

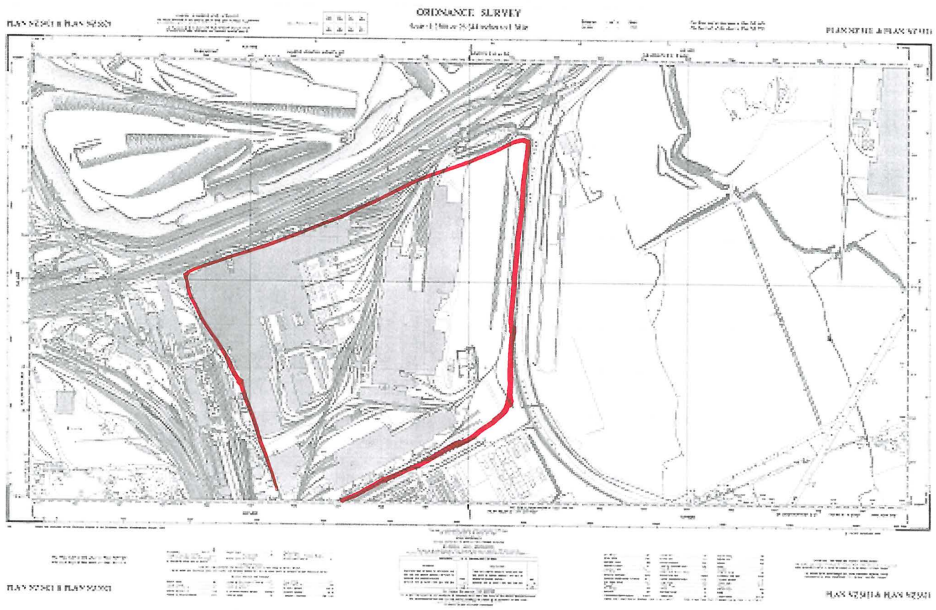

Figure 2. Historical map of the site from 1960. The current site lies within the red boundary marked on the map.

Review of available data

INCA has obtained a considerable amount of data on wildlife in the South Tees and Wilton industrial estates over more than a decade and holds the most comprehensive data set for ecological records in this area. This includes, in August 2007, undertaking a PEA and vegetation survey specifically of the majority of the Grangetown Prairie site. The following review of ecological receptors that are found in the wider South Tees area and therefore may be relevant to the site is based on INCA's data and other data that is in the public domain.

Designated Sites

The only statutory designated nature conservation site that is within 2km of the site is the North Tees Mudflats component of the Tees & Hartlepool Foreshore & Wetlands SSSI. This also forms a part of the European Site, Teesmouth & Cleveland Coast SPA. North Tees Mudflats comprised 20ha of intertidal mud which is designated for supporting wintering waterbirds.

Natural England is proposing an extension to the Teesmouth & Cleveland Coast SPA and the underlying SSSIs which would include the River Tees as far upstream as Tees Barrage. Under these proposals the tidal reaches of the river would for the most part be designated for supporting breeding Common Tern *Sterna hirundo* by providing foraging opportunities. Any intertidal margins along the river would also support wintering waterbirds.

There are no locally designated nature conservation sites within a 2km radius of the site.

Protected species

Great Crested Newts, *Triturus cristatus* (GCN)
INCA carried out GCN surveys of all of the waterbodies on the former Corus site in 2007 and of four ponds at Teesport in 2005. All proved to be negative for GCN. The closest current records of GCN to the site are at Lovell Hill Ponds which is approximately 5km away to the south east. There are records from the 1980s from Wilton Lake; however this was surveyed in 2013 along with a further nine water

bodies between Marske and the Wilton Industrial Complex for the Forewind Dogger Bank wind turbine proposal, all of which proved negative for GCN (Peak Ecology, 2013).

Bats
INCA has recorded Common Pipistrelle *Pipistrellus pipistrellus* foraging in small numbers across various parts of the Wilton Industrial Complex and one occasion a single Noctule bat *Nyctalus noctula* commuting over that area. Common Pipistrelle is more of a generalist in terms of its use of habitats than any other British bat species and in the North East is the only species that has been found to roost in urban areas (Jackson, 2012). It is likely to forage in small numbers in any areas that have suitable habitat to support its prey of flying insects.

Reptiles
Common Lizard, *Zootoca vivipara*, has been recorded from the coastal dune areas from South Gare to Coatham Common. No reptiles are known to have been recorded on the former Steelworks site or any other industrial or urban areas on South Tees and the closest record is approximately 5km away from the site.

Otter *Lutra lutra*
Otter has been recorded on Dabholm Gut and Coatham Marsh on the south side of the Tees and at several locations on the north side of the river. As an otter's territory typically extends for several kilometres it is possible that it will occur at any location on Teesside where there are suitable water bodies with connectivity to other suitable habitat.

Water Vole *Arvicola amphibious*
The most recent record of Water Vole on the STDC site is from an unspecified location on the former Corus site in 2007. Water Vole has been recorded from Coatham Marsh in the past though not within the past decade. INCA has carried out Water Vole surveys on Dabholm Beck, Kettle Beck and Kinkerdale Beck in the intervening period with negative results. The closest known current location for Water Voles is on Spencer Beck approximately 2km to the south west of the site.

Badger *Meles meles*
The closest record of badger is from Wilton Woods. In 1995, three rescued badgers were released at an artificial sett on the eastern boundary of the Wilton Industrial Complex but surveys by INCA in 2014 established that they were no longer present. There is no suitable habitat for badger nearer to the site than Wilton Woods.

Nesting birds
There is no information on nesting birds specifically for the site but the various species of birds present on Teesside between them nest in a variety of habitats and are likely to be present anywhere where there is suitable habitat.

Priority Species

European Hedgehog *Erinaceous europaeus*
Hedgehogs are frequently encountered as road casualties on the A174 approximately 3-4km south of the site but very rarely on the A66 east of the A19 though they could still be present in areas around the site where there is suitable habitat.

Brown Hare *Lepus europaeus*
Brown Hare has been recorded as a road casualty on the A66 adjacent to the site and is known to occur across the wider former Corus site, as well as on the nearby Teesport estate.

Common Toad *Bufo bufo*
Toads have been recorded in several ponds across the South Tees Development Corporation area though never in large numbers.

Butterflies
Of the several priority butterfly species, Dingy Skipper *Erynnes tages* and Grayling *Hipparche semele* are closely associated with relatively open areas on brownfield sites. Dingy Skipper and Grayling have both been recorded in good numbers on the Wilton Industrial Complex with Grayling having been found in high numbers at the eastern end of the former Corus site.

Invasive non-native plants

There are no records from the site itself but Giant Hogweed, *Heracleum mantegazzianum* is known to be present at Teesport (1km to the north east) where INCA monitors it annually in order to facilitate control measures.

Survey details

The site was visited on 10th May 2018 by Ian Bond, Ecologist with INCA. The entire site within the red line boundary was walked and the habitats and key features of ecological interest within the site were noted. The buildings were inspected for their potential to support roosting bats.

The weather conditions at the time of the survey were dry and sunny, with a light breeze and a temperature of around 16°C.

No specific surveys for species were carried out other than the environmental DNA test for Great Crested Newts. Instead the site was assessed for its potential to support protected or priority species and any anecdotal species records were noted.

Survey results

Habitats

For the purposes of describing the vegetation, the site was divided into nine areas based on the types of vegetation cover present. These areas are shown in Figure 2. The boundary demarcations are approximate and in any case the vegetation often graded from one type to another. Figure 3 also shows the location of two target notes both of which refer to water bodies on the site.

Figure 3. Broad areas of vegetation types. (Target notes are shown as T1 and T2)

Area 1.
This is former industrial land which appears to have been cleared relatively recently with the ground comprising crushed rubble with areas of concrete hardstanding. It is in the early stages of becoming vegetated with less than 50% vegetation cover. The vegetation comprises principally individual clumps of Creeping Bent, *Agrostis stolonifera* with some Narrow-leaved Ragwort *Senecio inaequidens* and Stonecrops *Sedum spp*. In the south-east corner there is a small amount of young Hawthorn, *Craetagus monogyna*, which is approximately five years old.

Area 2.
This is similar to Area 1 and would have formed part of the same industrial area. Where it was vegetated the vegetation is noticeably taller than Area 1 though the vegetation is still quite sparse. Rosebay Willowherb *Chamerion angustifolia* is starting to invade though was not yet forming characteristic clumps.

Area 3
The substrate in this area is a light soil which was dressed with crushed iron slag. It is quite sparsely vegetated with the most abundant herb species being Hop Trefoil *Trifolium dubium,* a *Melilotus* species and Catsear *Hypochaeris radicata*. There are small amounts of Kidney Vetch *Anthyllis vulnerata* and Hawkweed *Pilosella sp*. The vegetation is typical of that which forms on many brownfield sites on Teesside due to the calcareous influence of the iron slag base. However, it was not very species-rich and only a moderate quality example of that type of habitat.

Area 4.
For the most part the ground conditions and ground flora are similar to Area 3, the main difference being quite extensive colonisation by scrub which mainly comprises Sea Buckthorn *Hippophae rhamnoides*. There is also a small area of good quality calcareous vegetation.

Area 5.
This area is very similar to Area 1 in terms of substrate and vegetation.

Area 6.
The substrate in this area is similar to Areas 3 & 4 and the vegetation is similarly sparse and calcareously-influenced. There is a slightly greater diversity of herb species compared to Areas 3 & 4, including Catsear and Hawkweeds *Hieraceum sp*. Overall the quality is moderate but there are two pockets of high quality calcareous vegetation, the largest of which is approximately 50x80m in extent.

Area 7.
This mainly comprises fairly rank grassland consisting of Cocksfoot *Dacytlis glomerata*, Red Fescue *Festuca rubra* and False Oat Grass *Arrhenatherum elatius* though some herb species are present, particularly Kidney Vetch and Birds Foot Trefoil *Lotus corniculatus*, which are respectively frequent and occasional in the sward.

Area 8.
This comprises around 2ha of young woodland/ scrub. The main tree species present in the more open parts of this area is birch *Betula pendula* with some Rowan *Sorbus aucuparia*, and Sallow *Salix sp*. In the central part where the woodland becomes denser the trees are predominantly Italian Alder, *Alnus cordata* on the fringes but otherwise a mixture of native broadleaves and Corsican Pine *Pinus nigra*, which forms an amenity shelter belt along the boundary with Eston Road. This opens out into light scrub of birch and bramble *Rubus fructicosus* at the southern end.

Area 9.
This is a large embankment comprising mainly railway ballast, the wide lower plateau of which is very sparsely vegetated with some grass and Red Valerian *Centrathus rubra*. The vegetation on the sides of the embankment is a mixture of young trees with *Buddleia* bushes.

Target Note 1. Standing Water

On the land approximately at the intersection of Areas 3, 4, 5 & 6 there are a number of shallow pools of standing water spread over an area of approximately 250m x 150m. The pools are, with one exception, shallow depressions with a layer of silt on the base that hold water to varying degrees. Some of these pools would appear to merge depending on the amount of water present therefore the

total number of pools with water is likely to vary depending on the time of year at which they are surveyed. At the time of the survey at least eight pools had an area of standing water of approximately 25m² or more. Most of the pools have a narrow fringe of Common Reed *Phragmites australis*. Water in these shallow pools is at most 20-30cm deep and very clear. Submerged vegetation is only present in one of the pools and this comprises Stonewort, *Chara sp.*, which is an indicator of low nutrient water bodies. Due to the clarity of the water, the shallow depth and the lack of submerged vegetation it was possible to see any fauna that were in the ponds.

The largest water body is a pond of approximately 150m² in area, at least 45cm deep and had concrete sides along part of its perimeter. Due to the depth of the water and the surface water being slightly choppy, it was not possible to clearly see any fauna or submerged vegetation except on its fringes.

There are some further pools that had formed on a white, chalk-like precipitate. These held no aquatic life whatsoever and in most cases were dry at the time of the survey

Target Note 2. Holme Beck.

An open length of Holme Beck runs north-south through the south-west extremity of the site before being culverted beneath the remainder of the site. The open watercourse is approximately 100m long, 1m wide and 30cm deep and had a fast flow rate at the time of the survey. The banks were made of vertical concrete panels and stone so there was no bankside vegetation.

Buildings

The Torpedo Shed is a long, steel-framed structure with corrugated metal cladding and associated brick buildings along the south and west perimeter. This is shown from the south east corner in Photograph 12. The brick buildings have a concrete roof with no roof voids and no fascia boards or other wooden cladding.

The Oxygen Plant is a small, stand-alone building, as shown in Photograph 13. It was still partially in use during the INCA survey in 2007 but is now dilapidated with the roof deteriorating. The roof has an underlayer of wood and there are fascia boards under the guttering; however the wooden roof is tightly bound onto the brick walls so does not leave any gaps that a bat could access to roost.

The third complex of buildings, shown in Photograph 14 and comprising a metal-clad store and offices is similar to the Torpedo Shed in construction. The office block on its northern elevation is also brick with a concrete roof and no roof voids, fascia boards or cladding that a bat might use as a roost.

Species

Relatively few species of fauna were seen during the site survey. Those of note are listed below:

- Two Brown Hare *Lepus europeaus* were seen on Area 4.
- There were single breeding territories of both Lapwing *Vanellus vanellus* and Skylark *Alauda arvensis* in the general area of A3/A4.
- Toad tadpoles *Bufo bufo* were present in almost all of the pools of standing water including the largest pond; an adult toad was also present in Area 7.
- A single Smooth Newt *Lissotriton vulgaris* was seen in the largest pond.
- A flock of around 200 Herring Gulls *Larus argentatus* was using the largest pond for bathing and a Moorhen *Gallinula chlorops* was present among the smaller pools.
- A few passerine birds were present in Area 8.

Invasive non-native plant species

A small number (<10) of Cotoneaster shrubs were present in Area 7 with a single example in Area 8. These includes Small-leaved Cotoneaster *Cotoneaster microphylla*, which is listed on Schedule 9 of the Wildlife & Countryside Act (1981) as a species which it would be illegal to cause to grow in the wild.

No other Schedule 9 plant species were observed.

Assessment

Designated Sites
At its closest point the site is 1.5km away from North Tees Mudflats and 1.3km away from the River Tees. The potential for impacts on the European Site will in due course be considered through a separate Habitats Regulations Assessment.

Bats
The buildings on the site are of negligible risk for supporting roosting bats. There are some limited foraging opportunities for bats associated principally with the water bodies and the young woodland on the site but most of the site is of relatively low potential for foraging bats, as is the surrounding area. Therefore bat usage of the site is likely to be low and restricted to foraging by the occasional Common Pipistrelle.

Reptiles
Most of the site is unsuitable for reptiles being open and compacted. Those limited areas that are potentially suitable, i.e. those with a varied topography and a mosaic of vegetation clumps and open areas have only become suitable recently. The closest known population of reptiles is 5km to the east and the intervening and other surrounding areas are for the most part unsuitable for reptiles.
It is not impossible that reptiles could use the railway corridor that links the site to the coast but even if this were the case they would be unlikely to disperse onto the site itself given that the parts closest to the railway line are among the most unsuitable habitats on the site.

Otter
There is no suitable habitat on site for Otters.

Water Vole
There is no suitable habitat on site for Water Voles.

Badger
There is no suitable habitat on site for Badgers.

Nesting birds
Several species of bird were encountered on the site of which some were exhibiting breeding behaviour in the form of territorial calls or displays. There is some potential for nesting birds over much of the site although the precise locations and species may vary from year to year. Also the number of birds encountered during the survey that could be nesting on the site was relatively low which probably reflects the generally sparse vegetation across the site. The site is considered unlikely to support any notable assemblage of nesting birds therefore a breeding bird survey is not considered necessary.

The site forms part of the home range of at least two Brown Hares. While an area of this size of the entire site is large enough in itself to support two Hares in typical habitat the sparse vegetation across much of the site means that it will probably only form part of wider home ranges.

Common Toads breed on the site with good numbers of tadpoles in most of the pools of standing water. This is considered to be a significant site for this species in a South Tees context.

There is some potential for both Dingy Skipper and Grayling butterflies on the site

Constraints on development

The presence of nesting birds will be a constraint on development in as much as the clearance of vegetation or other areas that they might use as nesting sites would need to be undertaken outside of the breeding season. Alternatively the area to be cleared should first be checked by a suitably qualified ecologist with clearance only taking place if it is confirmed that no birds are nesting in the area to be cleared.

Precautions will be required during site clearance works to ensure that the Cotoneaster that is present is not spread to other areas.

Mitigation and Enhancement Opportunities

The most valuable ecological features on the site are the areas of high quality calcareous vegetation and the breeding population of Common Toad. Other features such as the water bodies and the young woodland are of low value per unit area as both are immature habitats; however each covers a reasonably large area which increases their overall value.

It is anticipated that any development on this site would require SUDS. Should it be possible to incorporate a water body or bodies as part of the SUDS then this could mitigate for the loss of the existing water bodies. This should also mitigate for the loss of those pools as breeding habitat for Common Toad. It may be possible to design the SUDS so that it is an improvement on the existing water bodies thereby providing an ecological enhancement.

It is unclear at this stage how much of the young woodland would need to be cleared to facilitate development but it may be possible to compensate for any losses through a landscaping scheme for the whole site.

The total area of high quality calcareous vegetation amounts to something in the region of two hectares. Although this is a valuable habitat, it is quite easy to recreate provided that there is a nutrient-poor calcareous substrate and a nearby seed source. It may be possible to recreate this on part of the site as part of the landscaping scheme or else off-set this with similar habitat creation on other areas of the STDC site.

The opportunities for ecological enhancements will depend on the nature and extent of development on the site and could potentially range from as simple as nest boxes for birds to something as ambitious as naturalising the course of the Holme Beck. This could be dealt with through a Landscape & Ecological Management Plan for the site once development proposals have been agreed.

Conclusion and recommendations

There is a significant level of biodiversity interest across the site as a whole though only small areas of the site are of high biodiversity value.

Mitigation for loss of biodiversity should be provided and enhancements for biodiversity sought where possible, in line with the National Planning Policy Framework. There may be scope to provide mitigation and enhancements on site, for example through a Landscape & Ecological Management Plan for the site. If on-site mitigation and enhancements are not possible then off-site measures should be provided.

Other than breeding birds it is considered unlikely that any protected species would be present on the site therefore no further, specific surveys for protected species are recommended.

Prior to development or site clearance a detailed survey for Schedule 9 plants would be required to ensure that all individual plants have been identified and can be dealt with appropriately.

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Appendix D3: Environmental DNA survey for Great Crested Newt

Great Crested Newt environmental DNA survey – Grangetown Prairie

Introduction

It is considered that there is a low likelihood of Great Crested Newts (GCN) being present on the Grangetown Prairie site. This is due to the lack of any previous records from the South Tees Development Corporation area and the lack of any recent records of GCN from within a 5km radius of the site, despite surveys of almost all suitable ponds in that area. As such it is considered that it was not necessary to undertake GCN surveys of the site in order to inform a planning application. Nevertheless as there was the opportunity to do so within the stipulated survey season, an environmental DNA (eDNA) survey was carried out in the standing waterbodies that had formed on the site (see Target Note 1 in INCA Report 201814).

Methods

Water samples were taken on 10th May 2018. The samples were taken using the established methodology as set out in Biggs et al, (2014) with a total of 20 water samples being taken. The standing waterbodies were in close proximity to each other with no more than 50m between any two waterbodies and in most cases only a matter of a few metres separating them. They were therefore considered as effectively being one breeding area for any population of amphibians that might be present. Samples were therefore taken from the larger pond and the three largest, shallow pools with the resulting 20 samples being combined.

The results were sent off for analysis by SureScreen Scientifics, which is an accredited company for carrying out analysis of GCN eDNA.

Results

The results were received from SureScreen Scientifics on 30th May 2017 and were negative. The sample had passed each of the necessary quality checks therefore the result can be accepted as evidence of the absence of Great Crested Newts from these waterbodies.

Conclusion

It is concluded that GCN are absent from the site

References

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust: Oxford

Appendix D4: Preliminary Ecological Appraisal – Holme Beck

INCA Report 202005 Preliminary Ecological Appraisal – Holme Beck

1. Introduction

INCA was commissioned by the South Tees Development Corporation (STDC) to undertake a Preliminary Ecological Appraisal (PEA) of the section of Holme Beck which runs above ground along the eastern side of Eston Road. The location and extent of this section of Holme Beck is shown in Figure 1.

The open section of the Beck starts a few tens of metres north of the junction of Eston Road with the A66 and continues for approximately 150m before being culverted again. The culverted section then runs approximately due north until the railway line, at which point the culvert turns 90° east with the Beck then discharging into open water in Cleveland Channel. Formerly, Holme Beck would have continued due north, discharging into the Tees; its former channel is still evident along the eastern side of the former South Bank works.

INCA has previously undertaken an ecological survey at Grangetown Prairie in May 2018, which included this section of Holme Beck.

Figure 1. Holme Beck with the extent of the open section indicated by the blue line

2. Survey details

The site was visited on 31st January 2020 by Ian Bond, Ecologist with INCA. The entire length of the Beck which is above ground was walked and features relevant to its current ecological value and potential to support protected or other notable species were recorded. Binoculars were used to view the beck where required.

Weather conditions at the time of the survey were dry, with the temperature mild for the time of year and approaching 10°C. The survey followed several days of dry weather although there had been light overnight rain the preceding night.

It was possible to view the entire length of this section of the Beck, albeit with very short sections of one or a few metres in length being partially obscured by overhanging vegetation. It is therefore considered that there were no constraints on the validity of the survey.

No specific surveys for species were carried out. Instead the Beck was assessed for its potential to support protected or other notable species.

4. Survey results

This section of Holme Beck runs immediately adjacent to Eston Road. As can be seen from Photograph 1 it is within one metre of the fence. The road runs on the other side of this fence with no intervening pavement or other boundary; therefore, the Beck is never more than one metre from the road. Photograph 2 shows the point at which the watercourse appears above surface; it would appear that additional drainage from the road enters the Beck at that point through a pipe.

This section of the Beck is canalised and straight. The sides are vertical and around 1.2m in height. At the northern end these comprise concrete blocks but for most of their length the embankments are made from stone. In places the lower parts of the embankments appear to consist of earth, but it was unclear whether this was just a covering of earth on top of the stone. Similarly, the bed of the Beck consisted of silt but given that the surrounding land is "made ground" comprising blast furnace slag which is likely to be of considerable depth, then it is likely that it is a layer of silt on some other surface rather than a natural bed.

There was a high flow of water at the time of the survey, with the depth of the water being around 15-20cm. Various items of rubbish were in the watercourse. A typical section of the Beck is shown in Photograph 3.

The upper parts of the embankments were colonised principally by Bramble *Rubus fructicosus agg*., and Pendulous Sedge *Carex pendula*, with some grass in places. The first 0.5m of the embankments were unvegetated apart from some Bryophytes. No aquatic vegetation was seen in the Beck.

No invasive non-native plant species were seen in or around the Beck. There was no suitable habitat for Water Vole *Arvicola amphibius* or other protected or notable species that might otherwise be associated with watercourses.

Photograph 1 The northern end of the open section of Holme Beck (photographed May 2018)

Photograph 2. The point where Holme Beck becomes open. The culvert discharges from the south (left of the picture). A drainage pipe feeds in from the western side. (Photographed January 2020)

Photograph 3. A typical section of Holme Beck. (Photographed January 2020)

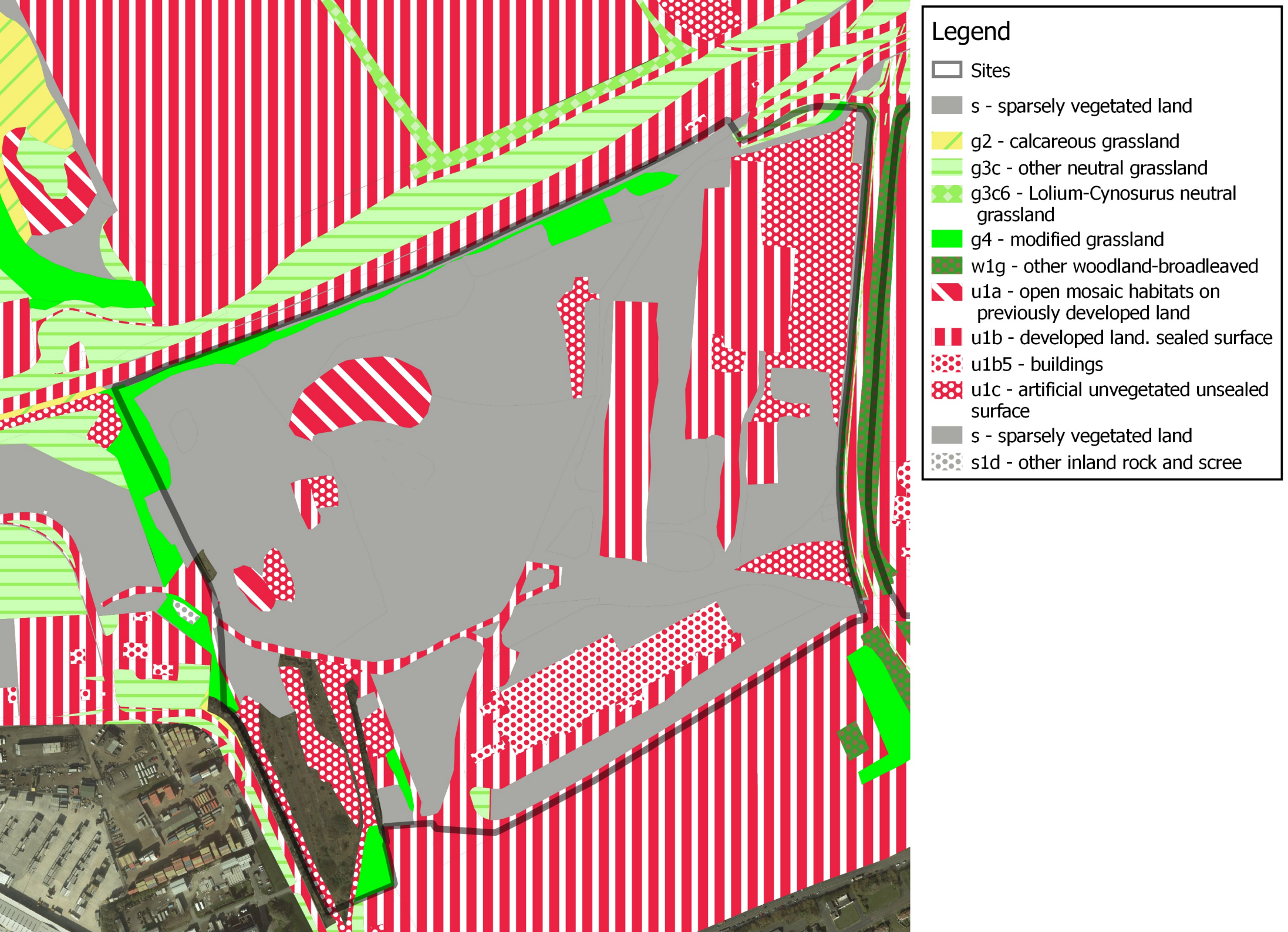
5. Conclusion

This section of Holme Beck is currently in very poor ecological condition. It is possible that the bed and parts of the lower embankments comprise silt and earth, but otherwise there are no natural features.

There is no suitable habitat to support protected or other notable species.

There are no invasive, non-native plant species associated with the Beck.

Appendix D5: UK Habitat Classification – habitat survey map


Legend
Sites
s - sparsely vegetated land
g2 - calcareous grassland
g3c - other neutral grassland
g3c6 - Lolium-Cynosurus neutral grassland
g4 - modified grassland
w1g - other woodland-broadleaved
u1a - open mosaic habitats on previously developed land
u1b - developed land. sealed surface
u1b5 - buildings
u1c - artificial unvegetated unsealed surface
s - sparsely vegetated land
s1d - other inland rock and scree