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**Teesworks Foundry Site
Demolitions**

Ecological Screening assessment

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Prepared by	Version	Revision	Date
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1. Summary

- Demolition works are proposed in the area referred to as the Foundry Site.
- This report has assessed likely adverse impacts on biodiversity with the aim of determining whether the demolition works constitute EIA development for Ecology.
- INCA has a good understanding of the biodiversity of the Teesworks site and how these works are likely to affect biodiversity both on and off the Foundry Site.
- The five industrial plants to be demolished have low value for biodiversity due to the nature of the buildings and apparatus, and the absence of large areas of 'brownfield' habitat.
- Significant environmental effects on designated sites and biodiversity are mitigated for in the Outline Method Statement and the Teesworks Environment and Biodiversity Strategy, so it is assessed that significant environmental effects are unlikely.
- The report concludes that an EIA is not required.

2. Introduction

This document has been prepared by INCA associate Gray's Ecology (Appendix 1), on behalf of Teesworks to support a 'prior approval' planning applications for demolition works on the Foundry Site, Teesworks. This document provides a screening assessment for ecology, based on the requirements of an Environmental Impact Assessment (EIA), to demonstrate whether the need for an EIA is triggered.

3. Project description

The project involves the demolition of defunct industrial structures on previously developed industrial land, to provide a stable area of land for future development. An Outline Method Statement has been prepared by Thompsons of Prudhoe, and this details the safe methods to be employed to 'demolish down to grade/ top of concrete all above ground buildings, structures and conveyors, leaving the site clean, safe and free from waste associated with the works'.

4. Site location

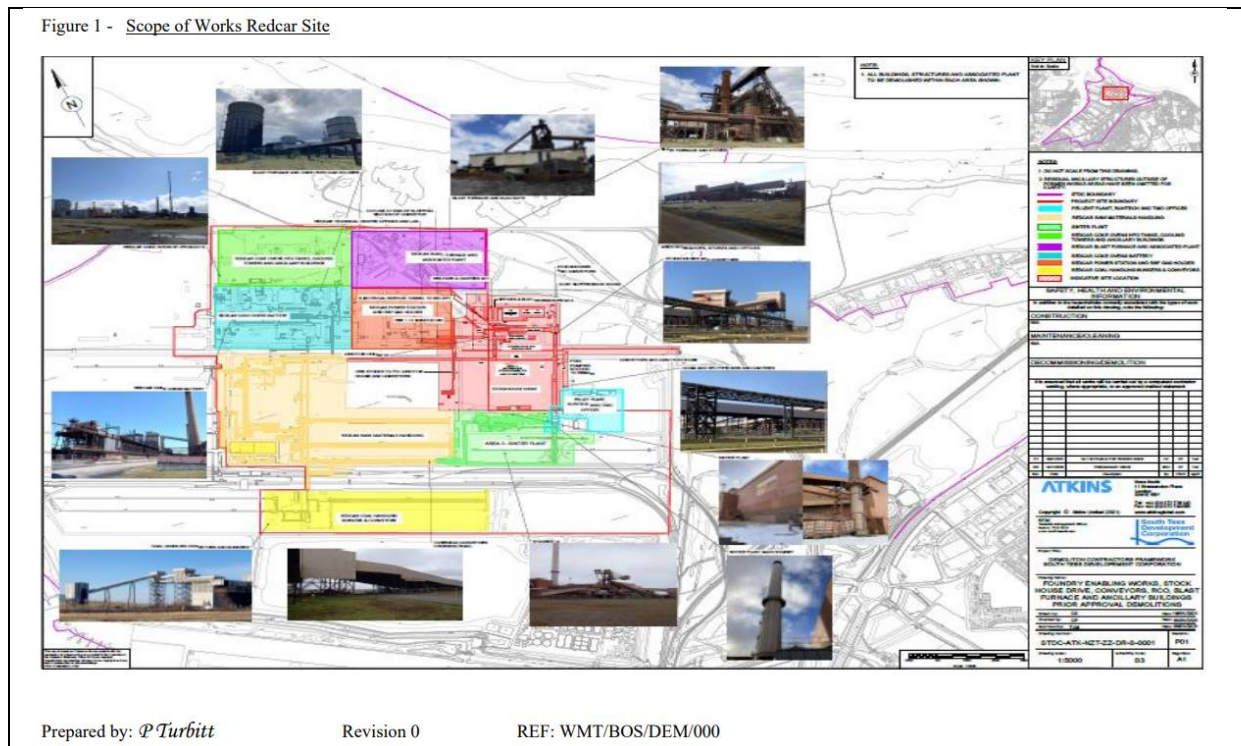
The site is in the borough of Redcar and Cleveland and is on industrial land west of the towns of Redcar, Coatham and Warrenby. It is centred on Ordnance Survey grid reference NZ 565-256 and is part of the larger Teesworks site, for which there is a master plan (Appendix 2).

The development site is approximately rectangular in shape and comprises of:

- Redcar Coke Ovens & Battery
- Redcar HFO Tanks
- Redcar Power Station & Gas Holder
- Redcar Blast Furnace
- Sinter Plant

The site location is shown in Figure 1 (a low-quality snip taken from the 'Outline Method Statement Redcar Site' prepared by Thompsons of Prudhoe, ref: WMT/REDCAR/DEM/000). Details and high-resolution figures are provided in that document which has been separately submitted to the local planning authority (LPA).

Figure 1. Site location.



5. Legislation

The key piece of legislation is the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. The project is potentially included under Schedule 2, under description 10a 'Infrastructure projects – industrial estate development projects'.

Relevant wildlife legislation (Appendix 2) includes:

- The Conservation of Habitats and Species Regulations 2017
- Wildlife and Countryside Act (W&C Act) 1981 (as amended)
- Natural Environment and Rural Communities (NERC) Act 2006

6. Assessment methodology

This section sets out the methods used in assessing the total biodiversity value of the site and in identifying the potential for any Valued Ecological Receptors (VERs) to be impacted by the proposed demolition works. The following VERs have been considered in this assessment:

- Statutory designated sites
- Non-statutory designated sites
- Priority Habitats
- Habitats of local importance, for example those for which Local Wildlife Sites could be designated
- Priority Species and other Protected species
- Local biodiversity action plan habitats and species

Priority Habitats and Priority Species are those species listed under Section 41 of the NERC Act (2006) as being of principal importance for the conservation of biodiversity in England. Protected species are specifically mentioned in wildlife legislation and include W&C Act Schedule 1 species such as barn owl and little ringed plover.

Other habitats and species which have been identified as being important in a local context, for example in the Tees Valley Biodiversity Action Plan (BAP) (Appendix 2).

In assessing the impact of a potentially damaging operation on a VER, the geographical extent over which that impact might be significant needs to be considered. This is referred to as the Zone of Influence (ZOI) and requires understanding of the output of the potentially damaging operation, its pathway to the receptor, the ecology and sensitivity of the receptor and the conservation importance of the receptor. The ZOI for an internationally designated site is greater than that for a local site. For the purposes of this assessment, the following ZOIs have been used.

- Internationally designated sites - 10km from the closest site perimeter
- Nationally designated sites – 5km from the closest site perimeter
- Locally designated sites and Priority Habitats – 2km from the closest site perimeter
- Priority Species and Protected species – considered individually for each species
- Widespread species and habitats – site only

Assessment of the ecological value of the site involved a combination of a desk study of available information and site visits. The desk study was based principally on data collected by INCA, which has carried out ecological surveys across almost all of the industrial land in the wider South Tees area over more than a 20-year period (see section 7). Information used for the assessment included:

- INCA's own, comprehensive biological records system
- Redcar and Cleveland Borough Council published data on Local Wildlife Sites and Local Nature Reserves
- Natural England and Magic Map (Defra's UK.Gov website) published data on international and national designated nature conservation sites

7. Historic survey work

INCA has undertaken on-site ecological survey work across the Teesworks site. This has included:

- Great crested newt (GCN) survey 2007
- Extended Phase 1 habitat survey 2014
- Preliminary Ecological Appraisal 2017
- Reptile survey 2018
- Ecology survey 2018
- Ecology Walkover survey 2020
- Various *ad hoc* surveys 2001-2021

Off-site ecological surveys include monthly, high-tide waterbird counts from 1989 to 2021 between Redcar and South Gare and Coatham Marsh (with the results submitted to the British Trust of Ornithology).

8. Baseline ecology

Across the wider Teesworks site, one Priority Habitat and 23 Priority Species have been identified as present and these are constraints which require mitigating. These are listed in Table 1 as VERs.

There are no designated nature conservation sites within Teesworks. However, there are international, national and local nature conservation sites close to Teesworks and these are listed in Table 2.

The analysis undertaken to define the baseline ecology is given in Appendix 3.

Table 1. On-site VERs

Open Mosaic Habitat	Priority habitat
Common pipistrelle bat	Priority species
Hedgehog	Priority species
Brown hare	Priority species
Common lizard	Tees Valley Biodiversity Action Plan species
Barn owl	W&C Act Schedule 1 species
Little ringed plover	W&C Act Schedule 1 species
Peregrine	W&C Act Schedule 1 species
Skylark	Priority species
Grey partridge	Priority species
Herring gull	Priority species
Linnet	Priority species
Reed bunting	Priority species
Curlew	Priority species
Dunnock	Priority species
Starling	Priority species
Song thrush	Priority species
Lapwing	Priority species
Shelduck	BAP species
Common toad	Priority species
Grayling butterfly	Priority species
Small heath butterfly	Priority species
Wall butterfly	Priority species
Dingy skipper butterfly	Priority species

Table 2. Off-site VERs

Teesmouth & Cleveland Coast SPA	Internationally designated site
Teesmouth & Cleveland Coast Ramsar	Internationally designated site
Teesmouth & Cleveland Coast SSSI	Nationally designated site
Coatham Marsh LWS	Locally designated site
Habitats and species associated with designated sites	-

9. Initial Ecology screening considerations

The EIA screening process poses several questions, which inform whether a project has the potential to cause harm to nature conservation sites and biodiversity. Table 3 shows the responses to these questions.

Table 3. Basic biodiversity screening assessment.

Question	Potential to cause harm
Are there any areas on or around the location which are protected under international, national, or local legislation for their ecological, landscape, cultural or other value, which could be affected by the project?	Yes
Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g., wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests, or woodlands, which could be affected by the project?	Yes
Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g., for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?	Yes
Are there any inland, coastal, marine, or underground waters on or around the location which could be affected by the project?	Yes

10. Further Ecology screening considerations

As nature conservation sites and biodiversity (VERs) could be harmed, further assessment has been undertaken (Table 4). This has been done by assessing the following potentially damaging operations:

- Destruction of habitats
- Destruction of bird nests
- Destruction of bat roosts
- Airborne contamination via dust
- Groundwater contamination
- Short-term, high levels of noise
- Long-term, high levels of noise
- Vibration
- Disturbance by personnel

Table 4. Assessment of potentially damaging operations

Potentially damaging operation	Mitigation including embedded mitigation in the Outline Method Statement
Destruction of Open Mosaic Habitat	Loss of habitats is compensated for via the Teesworks Environment and Biodiversity Strategy.
Destruction of bird nests	Operations to be undertaken outside of the bird nesting season (March to August inclusive).
Destruction of bat roosts	Likely impact is negligible due to low suitability of buildings for bats.
Airborne contamination via dust	Dust suppression detailed in Outline Method Statement.
Groundwater contamination	Assessed as likely to be no more harmful than during the period that industry was operational (when wildlife was unaffected).
Short-term, high levels of noise	Likely impact on sensitive species (roosting birds; harbour seal) is negligible due to distance (over 1.9km).
Long-term, high levels of noise	Likely impact on sensitive species (roosting birds; harbour seal)

	is negligible due to distance (over 1.9km).
Vibration	Likely impact on sensitive species (roosting birds) is negligible due to distance (over 1.9km).
Disturbance by personnel	Likely impact on sensitive species (roosting birds) is negligible due to distance (over 1.9km).

The closest high tide waterbird roosts, where birds congregate and are vulnerable to disturbance, are shown in Table 5.

Table 5. Distance to key, high tide waterbird roost sites.



11. Mitigation measures

There are two delivery mechanisms for mitigation measures. Embedded mitigation measures are included in the Outline Method Statement and these are shown in Table 6.

INCA is preparing a 'Teesworks Environment and Biodiversity Strategy' (in prep) and this document will deliver further mitigation measures.

Table 6. Embedded mitigation.

Potentially damaging operation	Embedded mitigation
Dust	<p>Thompsons will minimise the production of dust during all stages of the project. Prior to commencement of works controls will be put into place to minimize the production of dusts.</p> <p>During the demolition phase of the works Thompsons will minimize dust emissions by utilizing machine dust suppression systems, pressure washer bowzers etc. A water supply is present on site for Thompsons use. An assessment of the Conveyors has highlighted that accumulated dust maybe present; Thompsons will use water to dampen the demolition workface as works</p>

	<p>progress and the arisings produced during the demolition works. Care will be taken not to flood working areas.</p> <p>excavator machines are equipped with a dust suppression system to reduce the dust at source, Thompsons will also use a pressure washer / water hose at ground level to reduce dust exposure.</p>
Groundwater contamination	All drains within the exclusion zone will be sealed using sandbags to prevent demolition debris from entering and protected using a steel plates.
Noise	<p>Thompsons will follow the best practice outlined in the current edition of BS 5228 'Noise and Vibration Control on Construction and Open Sites' during the planning and implementation of site activities and operations. The recommendations within BS 5228 Parts 1 to 4 shall be employed at all times to minimise the emission of noise from the site. Thompson's contracts are conducted with regard to our Noise at Work Policy and procedures. Methods will be sought which will eliminate the requirement to conduct such works where possible. If this is not possible then their use will be minimized and controlled.</p> <p>Each task will be subject to a noise risk assessment.</p> <p>Thompsons will carry out regular noise monitoring</p>
Vibration	<p>Thompsons will strictly control nuisance vibration via the selection of our demolition technique. High impact works will be strictly minimised.</p> <p>Thompsons will adhere to the requirements of BS 5228 Part 1:1997 Code of Practice for Noise and Vibration Control on Construction and Open Sites, the Control of Pollution Act 1974, and the Environmental Protection Act 1990.</p> <p>Thompsons will carry out our works to strictly minimise noise, vibration and airborne dust as much as possible.</p>
Pollution	<p>Thompsons will identify any hazardous materials and deal with the disposal of such materials in accordance with our statutory requirements.</p> <p>Thompsons will ensure that our works do not pollute the environment including nuisance noise, windblown dust, spillages etc and will prevent polluting materials from leaving the site in accordance with the contract specification.</p> <p>Operatives are Environmental Awareness trained and this includes emergency drills for clean-up / control of spillage. In the event of leakage / spillage operatives will follow the emergency clean-up / control procedure.</p>

12. Likelihood of harm following mitigation

Following assessment of the potentially damaging operations and the embedded mitigation, the likelihood of harm has been considered (Tables 7 and 8).

Table 7. Assessment of likelihood of harm to on-site VERs

Valued Ecological Receptor	Embedded mitigation	Additional mitigation	Residual level of harm
Open Mosaic Habitat	None	Teesworks Environment and Biodiversity Strategy.	None
Common pipistrelle bat	None	None	Insignificant due to low suitability of site and buildings
Hedgehog	None	Teesworks Environment and	Insignificant due to

		Biodiversity Strategy.	abundance of suitable habitat elsewhere on Teesworks.
Brown hare	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to abundance of suitable habitat elsewhere on Teesworks.
Common lizard	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to low suitability of site
Barn owl	None	Works to be outside the nesting season.	None
Little ringed plover	None	Works to be outside the nesting season.	None
Peregrine	None	Works to be outside the nesting season.	None
Skylark	None	Works to be outside the nesting season.	None
Grey partridge	None	Works to be outside the nesting season.	None
Herring gull	None	Works to be outside the nesting season.	None
Linnet	None	Works to be outside the nesting season.	None
Reed bunting	None	Works to be outside the nesting season.	None
Curlew	None	Works to be outside the nesting season.	None
Dunnock	None	Works to be outside the nesting season.	None
Starling	None	Works to be outside the nesting season.	None
Song thrush	None	Works to be outside the nesting season.	None
Lapwing	None	Works to be outside the nesting season.	None
Shelduck	None	Works to be outside the nesting season.	None
Common toad	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to low suitability of demolitions sites for common toad.
Grayling butterfly	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to abundance of suitable habitat elsewhere on Teesworks.
Small heath butterfly	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to abundance of suitable habitat elsewhere on Teesworks.
Wall butterfly	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to abundance of suitable habitat elsewhere on Teesworks.
Dingy skipper butterfly	None	Teesworks Environment and Biodiversity Strategy.	Insignificant due to abundance of suitable habitat elsewhere on Teesworks.

Table 8. Assessment of likelihood of harm to off-site VERs

Valued Ecological Receptor	Embedded mitigation	Additional mitigation	Residual level of harm
Teesmouth & Cleveland Coast SPA	Yes	None	None
Teesmouth & Cleveland Coast Ramsar	Yes	None	None
Teesmouth & Cleveland Coast SSSI	Yes	None	None
Coatham Marsh LWS	Yes	None	None
Eston Pumping Station LWS	Yes	None	None
Habitats and species associated with designated sites.	Yes	None	None

13. Conclusion

- Demolition works are proposed in the Teesworks area referred to as the Foundry Site.
- This report has assessed likely adverse impacts on biodiversity with the aim of determining whether the demolition works constitute EIA development for Ecology.
- INCA has a good understanding of the biodiversity of the Teesworks site and how these works are likely to affect biodiversity both on and off the Foundry Site.
- The five industrial plants to be demolished have low value for biodiversity due to the nature of the buildings and apparatus, and the absence of large areas of 'brownfield' habitat.
- Significant environmental effects on designated sites and biodiversity are mitigated for in the Outline Method Statement and the Teesworks Environment and Biodiversity Strategy, so it is assessed that significant environmental effects are unlikely.
- The report concludes that an EIA is not required.

End

Appendix 1. Report compiler

The author, Graham Megson, has an MSc in Ecology from Durham University and has been based in Teesside for 32 years. He has experience working as an Ecologist, Biodiversity Officer and Countryside Manager and has contributed to several wildlife recording schemes during this time, including being the British Trust for Ornithology (BTO) led Wetlands Bird Survey (WeBS) counter, for the sectors between Redcar and South Gare, since 1989.

Appendix 2. Links to referenced documents

RCBC (2018) South Tees Area SPD. <https://www.redcar-cleveland.gov.uk/resident/planning-and-building/local-plan/Pages/South-Tees-Area-SPD.aspx>.

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. <https://www.legislation.gov.uk/uksi/2017/571/contents/made>

The National Archives: The Conservation of Habitats and Species Regulations 2017 <http://www.legislation.gov.uk/uksi/2017/1012/contents/made>.

The National Archives: Wildlife & Countryside Act 1981
<http://www.legislation.gov.uk/ukpga/1981/69>.

National Archives: Natural Environment and Rural Communities Act 2006.
<http://www.legislation.gov.uk/ukpga/2006/16/contents>.

Tees Valley BAP. <https://teesvalleynaturepartnership.org.uk/wp-content/uploads/2012/11/Tees-Valley-priority-habitats-and-species-updated-5-jan-2012-pdf.pdf>.

Appendix 3. Baseline Ecology

The baseline Ecology for the Teesworks site and for Valued Ecological Receptors adjacent to the site have been defined and details are provided below.

Internationally designated sites

There are two internationally designated sites within a 10km radius of the site; the Teesmouth and Cleveland Coast Special Protection Area (SPA) and the Teesmouth and Cleveland Coast Ramsar site. SPAs are designated under the EU Wild Birds Directive. Ramsar sites are wetlands of international importance designated under the Ramsar Convention on Wetlands but which are afforded the same level of protection in policy terms in respect of new development as European sites. The Teesmouth and Cleveland Coast Ramsar site shares the same boundary as the Teesmouth and Cleveland Coast SPA except where the SPA includes a marine component. The intertidal element of the Teesmouth and Cleveland Coast SPA is also classed as a European Marine Site and shares its interest features with the SPA. The location, distance from the site, main interest features and size for each internationally designated site is given in Table 9.

Table 9. Internationally designated sites

Site	Approx. Distance	Key species	Area (ha)
Teesmouth and Cleveland Coast SPA	adjacent	Wintering and passage waterbirds, breeding populations of avocet, common tern, little tern	12,226.28
Teesmouth and Cleveland Coast Ramsar	adjacent	Waterbirds, breeding populations of avocet, common tern, little tern	2,094.02

Teesmouth and Cleveland Coast SPA

The Teesmouth and Cleveland Coast SPA was first classified in 1995 for its numbers of European importance of breeding little tern *Sternula albifrons*, passage sandwich tern *Thalasseus sandvicensis*, wintering red knot *Calidris canutus* and passage common redshank *Tringa totanus*, as well as an assemblage of over 20,000 waterbirds. The SPA was updated in 2000 to include additional areas of coastal and wetland habitats important for waterbirds.

In 2019, the SPA was extended to include at sea foraging areas for breeding little tern and breeding and foraging areas for common tern *Sterna hirundo*, the latter being proposed as a new qualifying feature in the light of recent increases in the size of the breeding population within the site. The extension includes additional areas of terrestrial habitats such as wet grassland, saltmarsh, deep and shallow pools and intertidal areas important for other foraging and roosting waterbirds which were existing features of the SPA. Non-breeding ruff *Calidris pugnax* and breeding avocet *Recurvirostra avosetta* have also been added as new qualifying features of the SPA.

The boundary of the SPA extension covers an area from Crimdon Dene in the north to Marske-by-the Sea in the south and includes the River Tees up to the Tees Barrage resulting in a revised SPA area of 12,226.28 ha. The seaward boundary has been drawn to include waters out to around 3.5km from Crimdon Dene, to include the areas of greatest importance to the little terns at that colony, and out to around 6km offshore further south to include the areas of greatest importance to the common terns at the Saltholme colony.

Teesmouth and Cleveland Coast Ramsar

The existing Teesmouth and Cleveland Coast Ramsar boundary was extended in 2019 to include additional terrestrial wet grassland, saltmarsh, deep and shallow pools and intertidal areas for breeding and non-breeding waterbirds. Historically the Teesmouth SPA and Ramsar have effectively shared the same boundary and interest features however the Ramsar extension only covers those terrestrial extension areas of the SPA down to Mean Low Water and does not extend outside of the SPA extension. Although not a qualifying feature the Ramsar site citation recognises that the site supports a rich assemblage of invertebrates, including the following seven Red Data Book species: *Pherbellia grisescens*, *Thereva valida*, *Longitarsus nigerrimus*, *Dryops nitidulus*, *Macrolea mutica*, *Philonthus dimidiatipennis* and *Trichohydriobius suturalis*.

Nationally Designated Sites

There are two nationally designated sites within a 5km radius of the proposed demolition works site; Teesmouth & Cleveland Coast Site of Special Scientific Interest (SSSI) and Teesmouth National Nature Reserve ('NNR'). The NNR is a sub-set of the SSSI and comprises two parts; the intertidal mudflats at Seal Sands and the dunes and grazing marshes around North Gare. As it is a part of the SSSI with the same interest features then it is not described or assessed separately.

The Teesmouth and Cleveland Coast SSSI is an amalgamation and rationalisation of the seven SSSIs which were formerly present in the Teesmouth area. It extends the original SSSIs geographically to underpin the non-marine elements of the extension to the Teesmouth and Cleveland Coast SPA and Ramsar (the SPA) and includes some additional, areas that are outside of the SPA as well as adding new interest features. The Teesmouth and Cleveland Coast SSSI was confirmed by Natural England (NE) in January 2019. The interest features of the SSSI and their relation to the site are shown in Table 10.

Table 10. Interest features of the Teesmouth and Cleveland Coast SSSI

Qualifying feature	Principal locations with respect to the site	Distance to the site (km)
Jurassic geology	Redcar Rocks	3.2
Quaternary geology	Seaton Carew	6.2
Saltmarsh	Confined almost entirely to the Greatham Creek area north of the Tees, with a small quantity at Bran Sands	1.9
Sand Dunes	South Gare to Coatham Common.	0.4
Harbour seal	Present in the estuary and river. Hauls out on	3.2

	Seal Sands and Greatham Creek. There are no haul out locations south of the Tees.	
Breeding birds	Present on all areas of suitable habitat, including South Gare to Warrenby and Coatham Marsh.	0.1
Non-breeding Birds	Present on intertidal, freshwater and marine areas. Coatham Sands is the closest site holding significant numbers.	0.7
Invertebrate assemblage	Present on all areas of suitable habitat, including South Gare to Warrenby and Coatham Marsh.	0.1

The Teesmouth and Cleveland Coast SSSI is an extensive mosaic of coastal and freshwater habitats centred on the Tees Estuary, including sand dunes, saltmarsh, mudflats, rocky and sandy shore, saline lagoons, grazing marshes, reedbeds and freshwater wetlands. These habitats support rich assemblages of invertebrates, breeding seals and large numbers of breeding and non-breeding seabirds and waterbirds. The site is of special interest for the following nationally important features that occur within and are supported by the wider habitat mosaic.

Jurassic geology

The foreshore between Redcar Rocks and Coatham Rocks provides exposures of parts of the Lower Jurassic succession that are otherwise unexposed in the Cleveland Basin. These complement the younger Lower Jurassic successions exposed further south in Robin Hood's Bay and are sedimentologically distinct from rocks of the same age to the south of the Market Weighton Axis. The sequence of ammonite assemblages that occur here indicates that the succession is very complete and may provide a key for the comparison of other Hettangian and Sinemurian successions in the Northwest European Province.

Quaternary geology

Tees Bay includes a feature known as the 'submerged forest' which has been well studied on the foreshore at Hartlepool between Carr House Sands and just north of Newburn Bridge, but which is also exposed south of Teesmouth on the foreshore at Redcar. On the Hartlepool foreshore there is complex of peats, estuarine and marine sediments deposited during the Holocene, which overlie glacial deposits from the last Ice Age. Within the peats there are tree stumps and branches. This sequence is also rich in fossils and contains archaeological evidence from the Mesolithic to the Romano-British periods. The palaeo-environmental records at Hartlepool indicate changes in sedimentation due to fluctuations in relative sea level during the mid-Holocene, from approximately 7,000 to 3,000 years BP. The location of Hartlepool on the fulcrum between areas of crustal uplift to the north and subsidence to the south makes these sediments crucial in interpreting Holocene sea level change.

Saltmarsh

The Tees Estuary supports the largest area of saltmarsh between Lindisfarne and the Humber Estuary. Its saltmarshes show a succession of vegetation types, from pioneer marshes of glasswort *Salicornia* species and annual sea-blite *Suaeda maritima*, through common saltmarsh-grass *Puccinellia maritima* communities, to stands dominated by common couch *Elytrigia repens* and its hybrid with sea couch *Elytrigia atherica*, *Elytrigia x drucei*, at the limit of tidal influence. The common saltmarsh-grass communities are diverse and sea aster *Aster tripolium*, common sea-lavender *Limonium vulgare* and thrift *Armeria maritima* provide a colourful late summer display.

Sand dunes

The SSSI supports an extensive complex of dunes flanking both side of the Tees Estuary. It is the largest dune complex between Druridge Bay (Northumberland) and Spurn Point (East

Yorkshire). There are two main dune systems: Seaton Dunes to the north of the Tees, and Coatham Dunes to the south. The dunes support a large area of semi-natural vegetation including the typical succession from strandline vegetation, occasionally including sea sandwort *Honckenya peploides* and sea rocket *Cakile maritima*, through foredunes of sand couch *Elytrigia juncea* and mobile dunes dominated by both marram *Ammophila arenaria* and lyme-grass *Leymus arenarius*, to fixed dune grassland with diverse swards, where herbs such as common bird's-foot trefoil *Lotus corniculatus*, lady's bedstraw *Galium verum*, fairy flax *Linum catharticum* and common restharrow *Ononis repens* form a prominent component. The fixed dunes also support a number of scarce and threatened species, including purple milkvetch *Astragalus danicus*. There are a number of damp depressions in both dunes ('slacks'), which support a range of wetter vegetation types. A particularly prominent feature of some of the slacks are large and colourful stands of marsh orchids *Dactylorhiza* species and their hybrids. Some of the slacks show affinities with saltmarsh vegetation, with salt-tolerant species such as saltmarsh rush *Juncus gerardii*, sea plantain *Plantago maritima* and sea milkwort *Glaux maritima*. More consistently wet slacks support swamp communities. The dunes also show transitions to wetter habitats and saltmarsh.

Harbour seal

Harbour seals *Phoca vitulina* (also known as common seal) have lived at the mouth of the River Tees for hundreds of years but were lost from the estuary for much of the 20th Century, principally due to pollution. They recolonised the estuary in the 1980s and have subsequently established a regular breeding colony which is the only pupping site in north-east England. Harbour seals are present in the estuary and the tidal Tees throughout the year, with regular haul outs at Greatham Creek and Seal Sands. Pupping tends to occur in June and July on the intertidal mud of Seal Sands.

Breeding birds

The SSSI supports nationally important numbers of three breeding species: pied avocet, little tern and common tern. Pied avocets and common terns both nest within the SSSI. Little terns nest in a colony at Crimdon and/ or on Seaton Carew beach, and use the SSSI for foraging and pre- and post-breeding gatherings. One or two pairs have attempted to breed at South Gare over the last few years. The extensive sand dunes, saltmarshes and wetlands across the site support a diverse assemblage of breeding birds. This includes several scarce and declining species, such as shoveler *Spatula clypeata*, pochard *Aythya ferina*, ringed plover *Charadrius hiaticula* and little ringed plover *Charadrius dubius*.

Non-breeding birds

The extensive areas of open water, grazing marsh and intertidal habitats within the site provide safe feeding and roosting opportunities for large numbers of waterbirds throughout the year. The SSSI is of special interest for its non-breeding populations of ten species (shelduck *Tadorna tadorna*, shoveler, gadwall *Mareca strepera*, ringed plover, knot *Calidris canutus*, ruff *Calidris pugnax*, sanderling *Calidris alba*, purple sandpiper *Calidris maritima*, redshank *Tringa totanus*, Sandwich tern *Thalasseus sandvicensis*) and an assemblage of over 20,000 non-breeding waterbirds. The assemblage comprises a wide variety of waterbirds, including (in addition to the aforementioned species that are reasons for notification in their own right), large numbers of wigeon *Mareca penelope*, lapwing *Vanellus vanellus*, black-headed gull *Chroicocephalus ridibundus* and herring gull *Larus argentatus*. Shoveler, gadwall and ruff are predominantly associated with the extensive freshwater wetlands of the site, while ringed plover, knot, sanderling, purple sandpiper and Sandwich tern mostly use the open coast. Redshanks are widespread across the site, but the greatest foraging concentrations occur, along with the largest numbers of shelduck, on the intertidal mud of Seal Sands and Greatham Creek. Seal Sands and Bran Sands are also extensively used by ringed plover and knot.

Invertebrate assemblage

The extensive complex of sand dunes within the SSSI supports a nationally important invertebrate assemblage, including at least 14 threatened species. The assemblage is diverse and makes use of a wide range of niches, with a strong dependency on open but consolidated sand exposures within which to nest and hunt, as well as on flower-rich swards for nectar and pollen gathering. The assemblage does not include a high number of rarities but is a good example of its type in the north of its range. As such, species such as the tephritid fly *Acanthiophilus helianthi*, whose larvae feed within the capitula of carline thistle *Carlina vulgaris*, occur towards the northern edge of their British range. The grayling butterfly *Hipparchia semele* is found here and remains a scarce species on this north-eastern coastal strip.

Locally designated sites

There are two relatively close locally designated sites referred to as Local Wildlife Sites (LWS):

- Eston Pumping Station; 2.1km south of the application site. Designated for its mosaic of habitats, including Urban grassland, a form of brownfield habitat.
- Coatham Marsh LWS 1.8km east of the application site. Designated for its Saltmarsh, Coastal grasslands, Flushes, seepages and springs, Neutral grassland, Urban grassland and vascular plants.

Priority species

Great Crested Newt (GCN) *Triturus cristatus*

All GCN surveys on Teesworks have been negative and this species is considered not to be present.

Bats

Common pipistrelle *Pipistrellus pipistrellus* is a Priority species but not a BAP species. INCA has recorded common pipistrelle foraging in small numbers across various parts of the nearby industrial areas. Common pipistrelle is more of a generalist in terms of its use of habitats than any other British bat species. There are few mature trees on the site and the majority of buildings on the site are assessed as being of negligible Bat Roost Potential (BRP). Therefore, the population of common pipistrelle is assessed as being low.

Breeding birds

The Teesworks area supports a diversity of breeding birds, including several species of ground-nesting birds associated with the flat, open areas, the scrub and the wetland features. These include some Priority species (see below).

Water Vole *Arvicola amphibius*

INCA has carried out water vole surveys on Dabholm Beck, Kettle Beck and Kinkerdale Beck with negative results, and this species is considered not to be present.

Hedgehog *Erinaceus europaeus*

Hedgehog is Priority species. Dropping shave been noted on-site and night-time security team report regularly seeing hedgehogs. The Teesworks site is assessed as supporting a population of hedgehogs.

Brown hare *Lepus europaeus*

Brown hare is a Priority species and a BAP species which has been recorded regularly. The Teesworks site is assessed as supporting a population of brown hares.

Common lizard *Zootoca vivipara*

Common lizard is a BAP species. Surveys by INCA have found small numbers of common lizards at several areas within Teesworks. The Teesworks site is assessed as supporting populations of common lizard and this constraint is mitigated through an on-going relocation scheme.

Barn owl *Tyto alba*

Barn owl is a Priority Species and a BAP species. Several pairs nest in (mostly brick) structures across the Teesworks site.

Little ringed plover *Charadrius dubius*

Little ringed plover is a W&C Act Schedule 1 species and a BAP species with one breeding pair raising two young in 2021.

Peregrine falcon *Falco peregrinus*

Peregrine falcon is assessed as nesting on Teesworks (one to two pairs), although no nest site is known. This species regularly perches on the gas holding tanks on the Redcar Coke Ovens By-Products site and the Redcar Power Station site.

Skylark *Alauda arvensis*

Priority Species. Several pairs breed.

Grey partridge *Perdix perdix*

Priority Species and BAP species. One or two pairs breed.

Herring gull *Larus argentatus*

Priority Species. There is a roof-nesting colony on one the large sheds on site, at OS grid reference NZ 568-254 (Figures 2 and 3).

Figure 2. Location of herring gull colony.

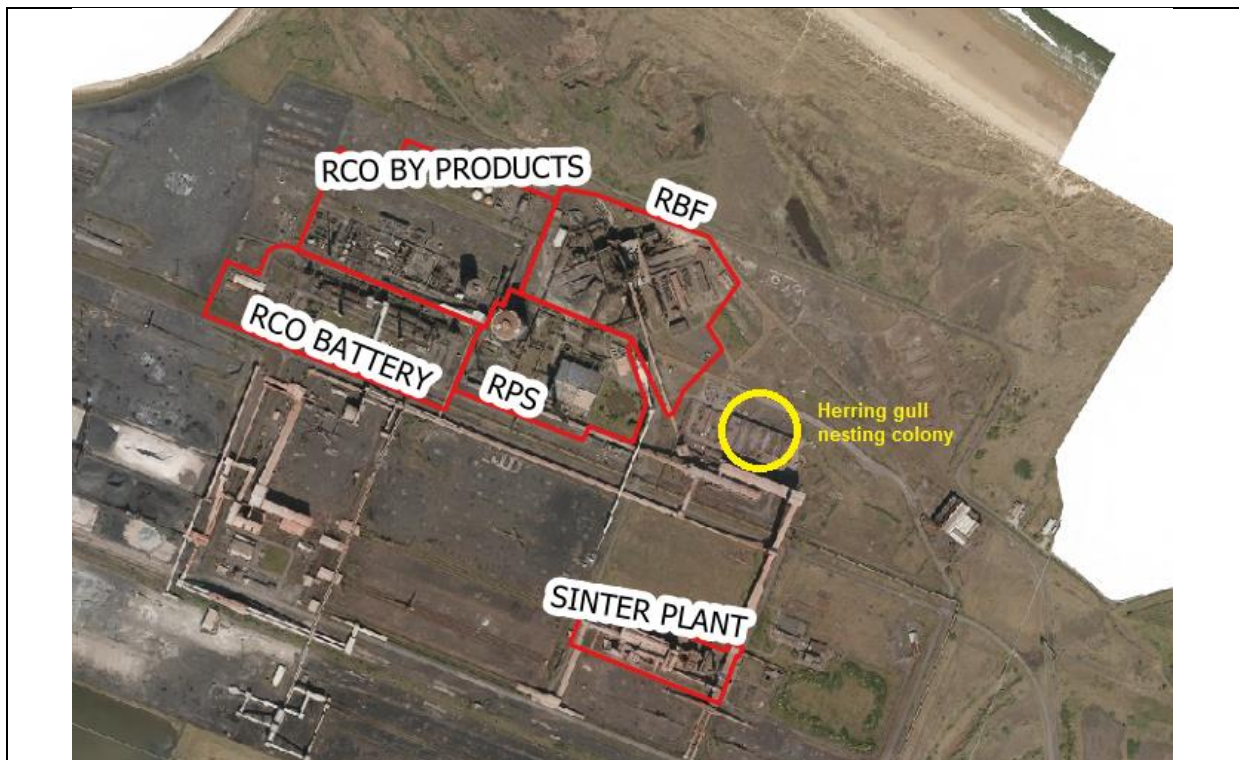


Figure 3. Location of herring gull colony.



Linnet *Linaria cannabina*

Priority Species. Assessed as a common and widespread breeding bird.

Reed bunting *Emberiza schoeniclus*

Priority Species. Several pairs recorded in suitable habitat.

Curlew *Numenius arquata*

Priority Species. No breeding pairs but some open areas of the site used for foraging and roosting.

Dunnock *Prunella modularis*

Priority Species. Several pairs recorded in suitable habitat.

Starling *Sturnus vulgaris*

Priority Species. Several pairs assessed to be present.

Song thrush *Turdus philomelos*

Priority Species. A few pairs in suitable habitat.

Lapwing *Vanellus vanellus*

Lapwing is a Priority Species. Several pairs recorded nesting in suitable habitat, e.g. two pairs raised four young on Tear Drop in 2021. Open areas used for roosting.

Shelduck *Tadorna tadorna*

Shelduck is a BAP species. Several pairs nest on site.

Common Toad *Bufo bufo*

Common toad is a Priority species. Common toad has been recorded as breeding in most ponds in the Teesworks area. The Teesworks site is assessed as supporting a population common toads.

Grayling butterfly *Hipparchia semele*

Grayling is a Priority species and a LBAP species. There have not been any targeted surveys for butterflies on the site however grayling is known to be present in regionally significant numbers when assessed across the entire Teesworks area.

Small heath butterfly *Coenonympha pamphilus*

Small heath is a Priority species. There have not been any targeted surveys for butterflies on the site, however there are numerous records and this butterfly is assessed as common when assessed across the entire Teesworks area.

Wall butterfly *Lasiommata megera*

Wall is a Priority species. There have not been any targeted surveys for butterflies on the site however wall is known to be present in regionally significant numbers when assessed across the entire Teesworks area.

Dingy Skipper butterfly *Erynnis tages*

Dingy skipper is a Priority species and a LBAP species. There have not been any targeted surveys for butterflies on the site however dingy skipper is known to be present in regionally significant numbers when assessed across the entire Teesworks area.

End