COMAH Regulations Ecology Report

LIANHETECH

August 2021

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1. Introduction

Lianhetech is a major hazard site under the Control of Major Accident Hazards (COMAH) Regulations (SI 2015/483) because of the nature of their industrial activities and the inventories of potentially dangerous substances stored and used on the site.

This report is for Lianehtech to consider in evaluating their operations. The report identifies the most important sites with ecological interest within a 10 km radius of their North Tees operations and summarises the ecological and nature conservation value of those sites. Since the COMAH Regulations pay particular attention to nationally or internationally protected sites e.g. Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPAs) and Ramsar Sites, these are covered in some detail. The regulations also include other sites of ecological interest, irrespective of the legally protected status, and species of high value or with legal protections. These other sites, e.g. Local Wildlife Sites (LWS) are also listed but in less detail. Many species of high value, or which are legally protected, are covered as an interest feature of the respective sites.

2. Locally Designated Sites

2.1 Locally designated sites comprise Local Nature Reserves (LNR) and Local Sites, with Local Sites encompassing Local Wildlife Sites (LWS) and Local Geological Sites (LGS). As geology is not predicted to be impacted then LGS are omitted from this report. All Local Nature Reserves within 10km of Lianhetech are shown in Appendix 3, with Local Wildlife Sites shown in Appendix 4.

2.2 Local Nature Reserves are statutory designated sites, which are declared by Local Authorities. To qualify for designation as an LNR they must have some substantive nature conservation interest but also have the benefit of providing public education or public enjoyment of nature. As their purpose is to provide significant public benefit there is not a benchmark for their nature conservation value, which may be less than that of a Local Wildlife Site however some LNRs are also nationally important Sites of Special Scientific Interest (SSSI). An LNR can be given protection against damaging operations through the Local Plan or through bye-laws of the relevant Local Authority. All Local Nature Reserves within 10km of Lianhetech are listed in Table 1.

2.3 Local Wildlife Sites are designated by Local Authorities following advice from the Tees Valley Local Sites Partnership. All sites that meet the criteria for selection, as set out by the Local Sites Partnership, should be selected, regardless of ownership, land-use or access. The full suite of LWS should therefore reflect all known areas of significant nature conservation within the Tees Valley. LWS do not have statutory protection but receive some protection from development through policies in the Local Plans of the respective Local Authorities. All Local Wildlife Sites within 10km of Lianhetech are listed in Table 2.

Table 1. Local Nature Reserves within 10km of Lianhetech .

Site	Code	Approx. Distance (km)	Map Ref	Main Ecological Interest	Area (ha)
Berwick Hills Community Park	LN 2	5.6 SW	NZ509191	BAP habitat – Reedbeds; Water Vole	9.29
Billingham Beck Valley Country Park	LN4	8.0 W	NZ454217	BAP habitats- Lowland Fen & Reedbeds	38.56
Charlton's Pond	LN7	6.4 W	NZ 469231	BAP habitat – Eutrophic Standing Waters	7.91
Cowpen Bewley Woodland Park	LN8	4.9 NW	NZ482253	BAP habitat – Lowland Meadow; Great Crested Newt site, dragonflies	50.5
Errington Woods	LN9	9.3 SE	NZ621203	BAP habitat – Lowland Mixed Deciduous Woodland. Great Crested Newt	70
Eston Moor	LN10	6.8 S	NZ562171	BAP habitat – Lowland Heath	c 105
Flatts Lane	LN11	7.6 S	NZ543163	BAP habitat – Lowland Mixed Deciduous Woodland	40.81
Greatham Beck	LN13	6.0 NW	NZ489289	No BAP habitats.	0.58
Linthorpe Cemetery	LN18	7.2 SW	NZ482188	No BAP habitats	20.64
Norton Grange Marsh	LN19	9.9 SW	NZ 440208	BAP habitat – Lowland Fen	<2
Seaton Dunes & Common	LN21	3.2 N	NZ529284	Wintering waterbirds; BAP habitats – Grazing marsh and sand dunes; Common Toad	96
Summerhill	LN26	8.1 NW	NZ485314	BAP habitats – Lowland Mixed Deciduous Woodland; Ponds	ca 42

Table 2. Local Wildlife Sites within a 10km radius of Lianhetech

Site	Ref	Approx. Distance	Map Ref	Main Ecological Interest	Area (ha)
A19 Gorse Field	LS1	9.2 W	NZ442238	BAP habitats – Lowland Meadow; Lowland Fen	5
Air Products Reedbeds	LS2	7.4 SW	NZ467208	BAP habitat – Reedbeds	6.1
Brenda Road Brownfield	LS8	4.4 NW	NZ514286	BAP habitat – Open Mosaic Habitat; Great Crested Newt	7
Brenda Road Sewage Works	LS9	3.6 N	NZ518267	BAP habitat – Open Mosaic Habitat; Dingy Skipper butterfly	1.3
Brierton Quarry	LS10	7.7 NW	NZ479300	Former sand quarry, partially refilled. Colonising naturally with scrub and ruderal species. Small area of neutral grassland.	3.9
Chaloner Pits	LS 12	9.9 SE	NZ604178	Great Crested Newt	0.6
Coronation Drive Embankment	LS16	6.5 N	NZ520309	BAP habitat – Lowland Meadow	1
Dunsdale Woods Complex	LS20	8.9 SE	NZ597181	BAP habitat – Lowland Mixed Deciduous Woodland	c34
Dunsdale Meadow	LS21	8.7 SE	NZ602188	BAP habitat – Lowland Meadow	0.5
Eston Pumping Station	LS84	3.3 E	NZ565237	Mosaic of habitats	1
Gravel Hole	LS27	8.9 W	NZ 445231	BAP habitat – Lowland Meadow	2.5
Greenabella Marsh	LS28	2.1 NW	NZ518262	BAP habitat – Reedbeds; Waterbirds,	c 50
Hartlepool Power Station	LS33	2.9 N	NZ525275	Ungrazed grassland with pools and scrub. Common Lizard	20
Marton West Beck	LS46	9.9 S	NZ513147	BAP habitat – Lowland Mixed Deciduous Woodland; Water Vole	No data

Maze Park	LS47	6.5 SW	NZ 468194	BAP habitats – Open Mosaic	ca 9ha
Middlebeck	LS48	7.4 SW	NZ521188	Water Vole	n/a
Newham Beck complex	LS50	9.2 S	NZ501153	BAP Habitats – Lowland Meadow & Lowland Mixed Deciduous Woodland	3.5
North Burn Marsh	LS52	9.3 NW	NZ 444278	BAP habitat Lowland Fen	0.5ha
Norton Bottoms	LS54	8.2 SW	NZ 456215	BAP habitat - Reedbeds	5.1
Norton Foundry Tip Grassland	LS55	9.5 W	NZ 438232	BAP habitat – Lowland Meadow	1.2
Old River Tees	LS56	8.7 SW	NZ 472182	BAP habitats – Reedbeds; Saltmarsh	No data
Phillips Tank Farm	LS58	2.9 NW	NZ508265	Dingy Skipper butterfly; Great Crested Newt; Wintering waterbirds	c 72
Portrack Meadows	LS60	7.2 SW	NZ476198	BAP habitats –Saltmarsh; Open Mosaic Habitat	4
Queens Meadow	LS61	4.2 NW	NZ502274	Great Crested Newt; amphibians	c15
Redcar to Saltburn Coast	LS62	9.0 E	NZ631233	Coastal grassland; Common Lizard	No data
Rossmere Park	LS64	6.2 NW	NZ503299	Entire wintering pop of Teesmouth Little Egrets roost here.	1.0
Seaton Common	LS68	3.0 N	NZ535285	Breeding Common Toad.	67
Teessaurus Park	LS69	5.2 SW	NZ 485215	BAP habitat – Open Mosaic Habitat	2
The Howls	LS71	9.9 NW	NZ463314	Ancient semi-natural woodland	9.3
Tot Fenny's Field	LS77	5.3 W	NZ481259	Lowland Meadow and Lowland Fen.	1.0
Whinney Banks Pond	LS80	7.3 SW	NZ476184	No BAP habitats listed	1.2
Wilton Woods Complex	LS82	6.5 S	NZ 582192	Ancient Semi-Natural Woodland	>100
Zinc Works Field	LS83	2.3 N	NZ533268	Ornithological importance, particularly passage migrants	14

3. Nationally Designated Sites

3.1 There are two Sites of Special Scientific Interest (SSSI) within a 10km radius of Lianhetech; Teesmouth and Cleveland Coast SSSI and Lovell Hill Pools SSSI. The location, distance from Lianhetech, main interest features and size for each SSSI is given in Table 3, with further details on each site in sections 3.2 and 3.3 respectively. The location of the SSSIs in relation to Lianhetech is shown in Appendix 1.

The Teesmouth & 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 and includes some additional, non-SPA areas as well as adding new interest features.

Parts of the Teesmouth and Cleveland Coast SSSI are also designated as Teesmouth National Nature Reserve (NNR). The NNR consists of two parts, the intertidal mudflats at Seal Sands and the dunes and grazing marshes around North Gare. As the interest features of the NNR are a sub-set of the SSSI it is not described separately.

The closest parts of the Teesmouth and Cleveland Coast SSSI to Lianhetech are the River Tees and Seal Sands, 0.5km and 1km from Lianhetech respectively. Of the various interest features of the SSSI, the main one which is associated with the river is foraging Common Tern. Common Terns nest at Saltholme and forage along the intertidal section of the river and certain of its tributaries and out

to sea. Although Common Terns can utilise all of the intertidal parts of the river, their use of the river at any one time is determined by the location of the small fish that they feed on and no particular areas of the river are critically important to them. The main interest features of the SSSI that are found at Seal Sands are the assemblage of non-breeding birds, which are present in large numbers and the Harbour Seal colony, which breeds there.

Lovell Hill Pools is 8.1km SE of Lianhetech but it is at approximately 80m higher elevation and separated by Lazenby Bank. Therefore there is unlikely to be any ecological connection to this site.

Table 3. Nationally designated sites within 10km of Lianhetech

Site	Approx. Distance	Map Ref	Main Ecological Interest	Area (ha)
Teesmouth & Cleveland Coast	0.5 km E – 1.0km N	various	Many features – see below	2977.03
Lovell Hill Pools	8.1km SE	NZ596188	Dragonflies assemblage Great Crested Newt	10

3.2 Teesmouth & Cleveland Coast SSSI

The 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 palaeoenvironmental 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 site 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 site supports nationally important numbers of three breeding species: pied avocet *Recurvirostra avosetta*, little tern *Sternula albifrons* and common tern *Sterna hirundo*. Avocets and common terns both nest within the SSSI. Little terns from a large nearby colony at Crimdon (in the adjacent Durham Coast SSSI) use the SSSI for foraging and pre- and post-breeding gatherings, with only occasional recent nesting attempts. The extensive sand dunes, saltmarshes and wetlands across the site support a diverse assemblage of breeding birds. This includes a number of 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 site 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. Redshank 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 regularly used by ringed plover and knot.

Invertebrate assemblage

The extensive complex of sand dunes within the site 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, 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.

In order to inform an assessment of potential impacts, Table 4 gives information for each of the qualifying features where they occur within 10km of Lianhetech and the time of year when they are present. This list excludes geological interest features which have no potential to be impacted.

Table 4. SSSI interest features in relation to Lianhetech

Qualifying feature	**Principal locations**	**Distance to (km)**	**Key periods**
Saltmarsh	Greatham Creek	2.8 NW	All year
Sand Dunes	Seaton Snook	2.8 N	All year
Harbour Seal	Seal Sands and Greatham Creek	1.3 N	Breeds June – July, though present all year
Breeding Birds	All wetland habitats. Closest site is the Brinefields	1.9 W	March - July
Non-breeding birds	Present on intertidal areas and margins of large freshwater bodies.	1.0 N	August - March
Invertebrate assemblage	Sand Dunes with Seaton Snook being the closest location	2.8 N	All year

3.3 Lovell Hill Pools

This is an area of pools and wetland habitats resulting from subsidence of old ironstone mining operations at the top of Wilton Bank. Lovell Hill has some botanical interest with species such as *Dactylorhiza* orchid spp., ragged robin (*Lychnis flos-cuculi*), bog stitchwort (*Stellaria alisine*) and celery-leaved buttercup (*Ranunculus sceleratus*). The site holds five species of amphibians, including Great Crested Newt and has ornithological interest. Breeding bird species include Tufted Duck, Water Rail and Sedge Warbler.

The site's main interest and criteria for SSSI designation is as a dragonfly habitat. Thirteen species have been recoded of which ten are known to have bred, including Variable Damselfly (*Coenagrion*

pulchellum), a nationally scarce species, Emerald Damselfly (*Lestes sponsa)* and Common Hawker *(Aeshna juncea)*, both of which are local Biodiversity Action Plan species.

4. Internationally Designated Sites

4.1 There are two internationally designated sites within a 10km radius of Lianhetech; 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 whereas Ramsar sites are wetlands of international importance. The Ramsar site shares the same boundary as the 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.

4.2 Teesmouth and Cleveland Coast SPA

The Teesmouth and Cleveland Coast Special Protection Area (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.

As of 2019, the SPA has been further 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 pied avocet *Recurvirostra avosetta* have also been added as new qualifying features of the SPA.

The boundary of the SPA extension covers an area from Castle Eden Denemouth 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. This increases the area of the existing SPA (1,251.50 ha) by 10,974.78 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.

4.3 Teesmouth and Cleveland Coast Ramsar

The existing Teesmouth and Cleveland Coast Ramsar boundary has also been extended to include the additional terrestrial wet grassland, saltmarsh, deep and shallow pools and intertidal areas for breeding and non-breeding waterbirds, as for the SPA. 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. The Ramsar now covers 2094.02ha. 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, Macroplea mutica, Philonthus dimidiatipennis* and *Trichohydnobius suturalis.*

The qualifying features for the Teesmouth and Cleveland Coast SPA/Ramsar are given in Table 5. The number of birds in the Ramsar assemblage is greater than for the SPA as it includes mute swan *Cygnus olor* and greylag goose *Anser anser,* both of which are resident all year; the SPA only includes migratory and wintering waterbirds.

Table 5. Qualifying features for Teesmouth and Cleveland Coast SPA/ Ramsar

Feature	Count (period)	% of Population	Interest type	Selection Criteria	New feature (Y/N)
Sandwich Tern *Thalasseus sandvicensis*	1,900 individuals (1988-1992	4.3% GB, 1.3% Western Europe/Western Africa	Annex 1 (non-breeding)	Stage 1.1 (SPA), Criterion 6 (Ramsar)	N
Little Tern *Sternula albifrons*	81 pairs (2010-2014)	4.3% GB	Annex 1 (breeding)	Stage 1.1	N
Common Tern *Sterna hirundo*	399 pairs ((2010-2014)	4.0% GB	Annex 1 (breeding)	Stage 1.1	Y
Pied Avocet *Recurvirostra avosetta*	18 pairs (2010-2014)	1.2% GB	Annex 1 (breeding)	Stage 1.1	Y
Ruff *Calidris pugnax*	19 individuals (2011/12-2015/16)	2.4% GB	Annex 1 (non-breeding)	Stage 1.1	Y
Red Knot *Calidris canutus*	5,509 individuals (1991/92-1995/96)	1.6% NE Canada/Greenland/Iceland/UK population	Migratory (winter)	Stage 1.2 (SPA), Criterion 6 (Ramsar)	N
Common Redshank *Tringa totanus*	1,648 individuals (1987-1991)	1.1% East Atlantic population	Migratory (passage)	Stage 1.2 (SPA), Criterion 6 (Ramsar)	N
Feature	Count (period)	Average number of individuals		Selection Criteria	
Waterbird assemblage	2011/12-2015/16	26,014 individuals (SPA assemblage), 26,786 individuals (Ramsar assemblage)		Stage1.3 (SPA), Criterion 5 (Ramsar)	

The conservation objectives for the SPA and the individual species and/or assemblage of species for which the site has been classified are:

"Subject to natural change, ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site."

In order to inform an assessment of potential impacts, Table 6 gives information for each of the qualifying features where they occur within 10km of Lianhetech and the time of year when they are present.

Table 6. SPA interest features in relation to Lianhetech

Qualifying feature	Principal locations	Distance (km)	Key periods
Sandwich Tern	The mouth of the Tees or at sea. Most birds roost at North Gare.	2.5 N	July – mid August.
Little Tern	Usually breeds at Crimdon though since 2019 has bred at Seaton Carew	5.3 N	May-July
Common Tern	Breeds at Saltholme and occasionally on the brinefields. Feeds along the entire intertidal section of River Tees out to sea	3.0 SW	May - August
Pied Avocet	Breeds on the North Tees brinefields and at Saltholme	2.2 W	April - July
Ruff	Present on intertidal areas and margins of large freshwater bodies.	1.1 N	August - March
Red Knot	Present on intertidal areas. The closest site regularly used is Seal Sands, although most birds now favour North Sands in Hartlepool.	1.1 N	November - March
Redshank	Present on intertidal and freshwater areas. The closest site regularly used by significant numbers is Seal Sands.	1.1 N	August - March
Waterbird assemblage	Distributed across most intertidal and freshwater areas and some terrestrial areas. The closest sites regularly used by large numbers are Seal Sands and Cowpen Marsh.	1.1 N	November- March

5. Species of high value or those with special protection

5.1 This section addresses those species that would fall into the categories listed under Appendix 4 of the DETR 1999, "Guidance on the Interpretation of Major Accident to the Environment for the Purposes of the COMAH Regulations"

Species of high value or those with special protection are considered within that document to be:
• priority species under the UK Biodiversity Action Plan
• species listed in the Habitats Directive Annexes (UK species only)
• species listed in the Annexes of the Birds Directive
• species listed in the schedules of the Wildlife and Countryside Act 1981 (and subsequent amendments to these schedules)
• all Red Data Book species.

The lists below include only those species falling into the above categories that are known or expected to be present within a 10km radius of Lianhetech. As Red List species are the most numerous of the above categories these are considered first, with species from the other categories only listed where they are not listed in any of the preceding lists.

5.2 Red List species

Red Data Book species are now more conventionally referred to as Red List species. These are based primarily on the JNCC's "Species Status Assessment project" which ended in 2008, and which is in turn based on IUCN 2001 guidelines. The classification system assessed all species and categorises them in descending order of conservation concern from Extinct to Least Concern. The species that are considered here are those which fall into the "threatened" categories of Critically Endangered, Endangered and Vulnerable.

Certain taxa are currently assessed under criteria other than the IUCN guidelines. Red listed birds are those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery. For those invertebrate groups that have not been assessed under IUCN guidelines, those that are classed as Nationally Rare, ie occurring in 15 or fewer hectads nationally, are here considered as equivalent to Red List species. Other than certain butterflies and those species recognised by the Ramsar citation (listed in Table 5), no red-listed or nationally rare invertebrate species are known within a 10km radius of Lianhetech, nor are any red-listed plants or fungi known within that area.

Table 7. Red -listed species

Species	Taxon	Notes
Water Vole	Mammal	Only extant sites are Saltholme and Greenabella
Hedgehog	Mammal	Widespread throughout the area
Dingy Skipper	Butterfly	Occurs across many brownfield sites and likely to be present in close proximity to Lianhetech
Grayling	Butterfly	Occurs across many brownfield sites and likely to be present in close proximity to Lianhetech
White letter Hairstreak	Butterfly	Small numbers found in Billingham
Pochard	Bird	Occurs on the North Tees Marshes
Grey Partridge	Bird	Scarce resident; occasionally breeds on North Tees brinefields
Shag	Bird	Marine, confined to the mouth of the Tees and Tees Bay
Lapwing	Bird	Large numbers winter in North Tees Marshes and a few pairs breed there, including on the North Tees brinefields
Ringed Plover	Bird	Winters in lower estuary and adjacent coasts (a few pairs breed)
Whimbrel	Bird	A few present in North Tees Marshes in May and July / August
Curlew	Bird	Hundreds present in and around the Tees Estuary, June to April.
Black-tailed Godwit	Bird	Virtually confined to Seal Sands, Greatham Creek and Saltholme
Ruff	Bird	Scarce migrant and winter visitor
Woodcock	Bird	Some birds winter on brownfield sites
Kittiwake	Bird	Up to 500 pairs breed on jetties and buildings, April to August
Herring Gull	Bird	Large numbers associated with landfill sites, with a few pairs breeding on buildings around North Tees
Merlin	Bird	Very small numbers winter on North Tees Marshes, July to March.
Skylark	Bird	Uncommon breeding bird of North Tees Marshes & brownfield sites. A few pairs breed on North Tees brinefields.
Grasshopper Warbler	Bird	Scarce breeding bird of brownfield sites with low scrub
Starling	Bird	Several thousand attend winter roosts in Saltholme area
Fieldfare	Bird	Common and widespread winter visitor
Song Thrush	Bird	Widespread breeding bird, but population declining
Redwing	Bird	Common and widespread winter visitor

Mistle Thrush	Bird	Uncommon breeding bird, often in industrial sites
House Sparrow	Bird	Remains common and widespread, although declining
Tree Sparrow	Bird	Uncommon resident of rural and urban fringe habitats
Yellow Wagtail	Bird	A handful of pairs breed on the North Tees Marshes, April to August.
Linnet	Bird	Common resident and migrant, often on brownfield sites
Twite	Bird	About a hundred winter at North and South Gare, October to March

5.3 UK priority species

UK priority species were those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). The full list currently extends to 1,150 species but many of those species they are listed only as requiring further research rather than for specific conservation action. Those listed for research only, include many species that are still common and widespread; these have therefore been excluded from this assessment. Table 8 lists those UK priority species found within 10km of Lianhetech, which have not already been identified in Table 7 as Red-list species.

Table 8. UK priority species, that are not Red-listed

Species	Taxon	Notes
European Greater White-fronted Goose	Bird	Individuals and small groups regularly present on the North Tees Marshes in winter
Great Bittern	Bird	One or two winter at Saltholme (usually at Haverton)
Tundra Swan	Bird	Occasional winter visitor to the North Tees Marshes
Black-throated Diver	Bird	A few may spend the winter in Tees Bay
Arctic Skua	Bird	Scarce autumn visitor to Tees Bay (August – September)
Great Crested Newt	Amphibian	Large populations at Graythorp and Cowpen Bewley Woodland Park.
Brown Hare	Mammal	Widespread across most industrial areas. Good numbers on the North Tees Marshes
Harvest Mouse	Mammal	Present at Saltholme and Greenabella
Otter	Mammal	Found throughout the River Tees and its main tributaries.
Noctule bat	Mammal	Small numbers forage over North Tees Marshes.
European Eel	Fish	Juveniles migrate upstream in spring with adults returning to sea in autumn
River Lamprey	Fish	Adults move upstream to spawn in early summer with their offspring migrating to sea in autumn and winter. Otherwise complete their lifecycle outside of the area.
Sea Lamprey	Fish	Adults move upstream to spawn in early summer with their offspring migrating to sea in autumn and winter. Otherwise complete their lifecycle outside of the area.
Atlantic Salmon	Fish	Adults migrate upstream June to October with peak numbers principally in July and August. Their offspring, known as smolts, migrate out to sea in spring. Otherwise complete their lifecycle outside of the area
Purple Milk Vetch	Plant	Present on Seaton Dunes
Flat Sedge	Plant	Rare and confined to Seaton Common
Prickly Saltwort	Plant	Rare but on sandy beaches either side of the Estuary.

5.4 Species listed under annexes of the Habitats and Birds Directives

Both Directives list species under a number of annexes for various purposes. Those species considered here are those listed under Annex I of Birds Directive as requiring special conservation measures and under Annex IV of the Habitats Directive as requiring strict protection.

Other than Otter and Great Crested Newt, listed above, no species listed under Annex IV of the Habitats Directive are known to be present in or around Teesside.

Annex I birds listed in Table 9 are limited to species within 10km of Lianhetech, which aren't otherwise listed in Tables 7 and 8 as Red List or UK Priority Species.

Table 9. Annex I bird species

Red-throated Diver	Fairly common migrant and winter visitor to the marine environment
Great Northern Diver	One or two winter in Tees Bay, sometimes within the Estuary
Slavonian Grebe	Scarce migrant and winter visitor to the marine environment
Barnacle Goose	Around a hundred spend the winter in the Saltholme area
Peregrine Falcon	Resident; up to five pairs breed in and around Teesside.
Avocet	Up to 30 pairs breed around North Tees Marshes, March to August.
Golden Plover	A thousand or more typically winter on the Estuary's wet grasslands. Breeds on the North York Moors
Arctic Tern	Fairly common migrant in Tees Bay during late summer
Common Tern	200-400 pairs typically nest in the Saltholme area, May to August. Occasionally breeds on the brinefields.
Sandwich Tern	Common in Tees Bay, July to September
Short eared Owl	Small numbers winter around Seaton Common and Greatham Creek

5.5 Species listed under the Schedules of the Wildlife & Countryside Act (1981) as amended

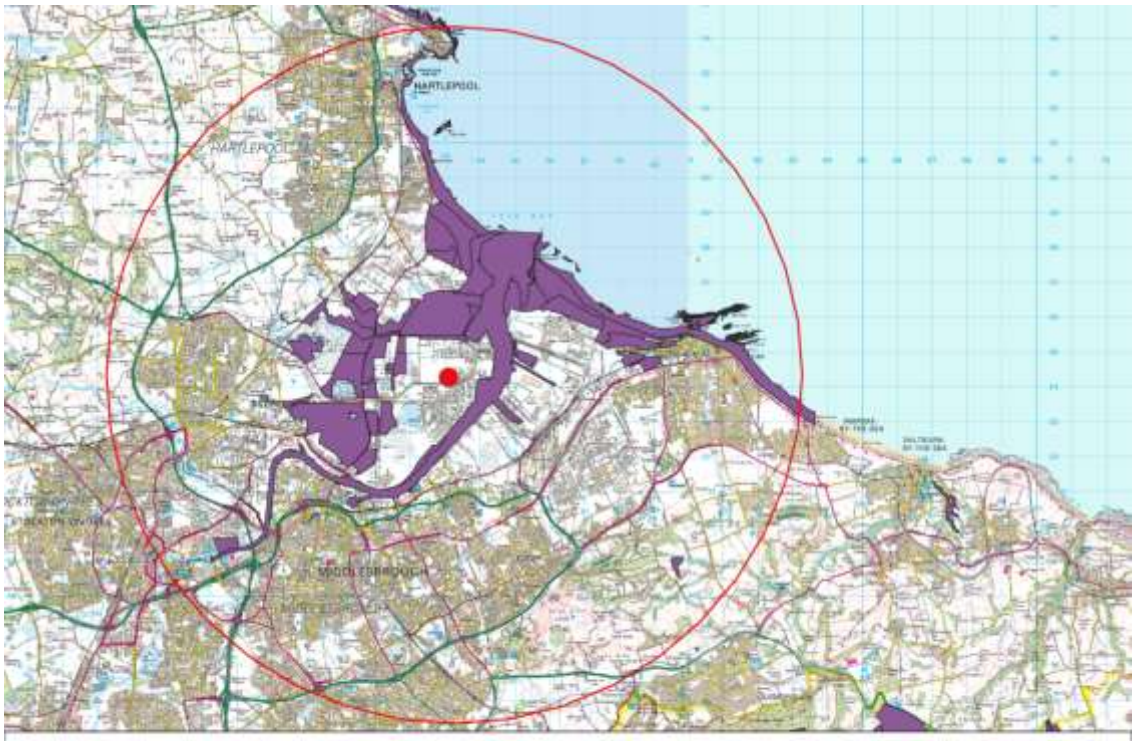
The Wildlife & Countryside Act provides various levels of protection. For some species this is only from such as possession or sale. Those species considered here are confined to those protected from killing or injury.

The only species that are protected under the Wildlife & Countryside Act, that are not listed as Red List or UK Priority, or Annex 1 species, and which are found within 10km of Lianhetech are Common Lizard and bat species other than Noctule.

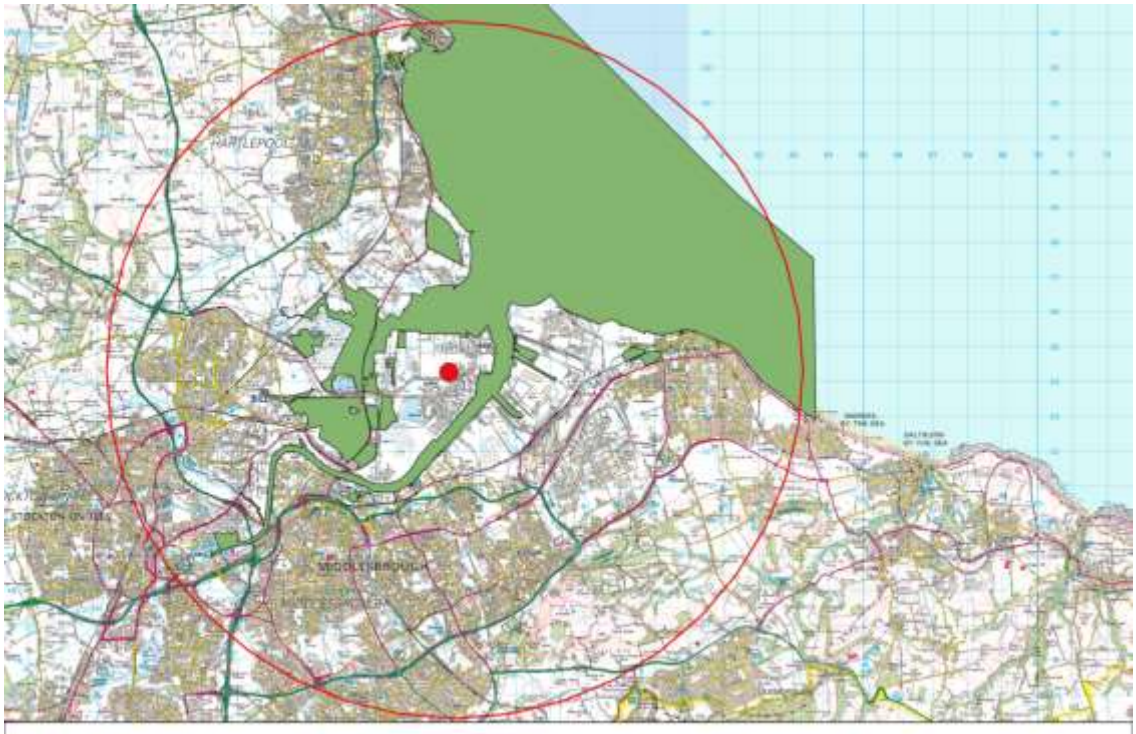
Common Lizard has been recorded on four occasions between Dorman's Pool and Seaton Carew but it is not known whether a population is established on North Tees. South of the River Tees it occurs along the coastal strip from South Gare to Redcar.

The numbers of bats and the diversity of bat species around industrial sites on Teesside are relatively low, in all likelihood due to the scarcity of tree cover and the high levels of lighting. What bats are present are almost exclusively Common Pipistrelles *Pipistrellus pipistrellus*, which is the UK's commonest species and the one which is the most generalist in its habitat selection. Several other species of bat are present in wooded or wetland areas towards the periphery of the 10km radius, but only Noctule *Nyctalus noctula*, is known to be present close to Lianhetech, its roosts are thought to be several kilometres away.

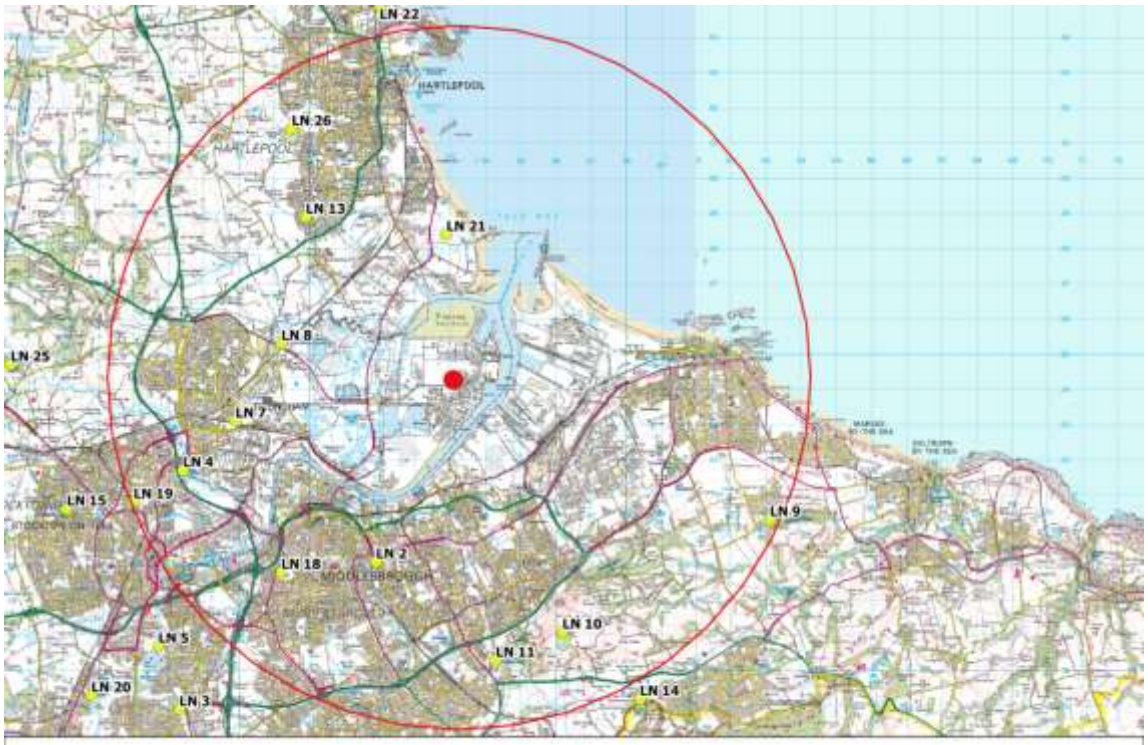
Appendix 1. Nationally designated sites within a 10km radius of Lianhetech



Appendix 2. Internationally designated sites within a 10km radius of Lianhetech



Appendix 3. Local Nature Reserves within a 10km radius of Lianhetech



Appendix 4. Local Wildlife Sites within a 10km radius of Lianhetech