Royal HaskoningDHV
Enhancing Society Together

Section 10 Appendix 10.2
Terrestrial Ecology
Survey Reports

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Extended Phase 1 Survey of an area across Wilton International and Teesport

Geoff Barber
February 2014

INCA
Industry Nature Conservation Association

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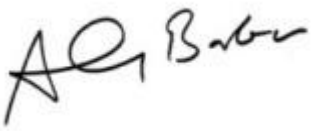
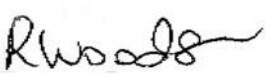
Report prepared for and on behalf of the Industry Nature Conservation Association by

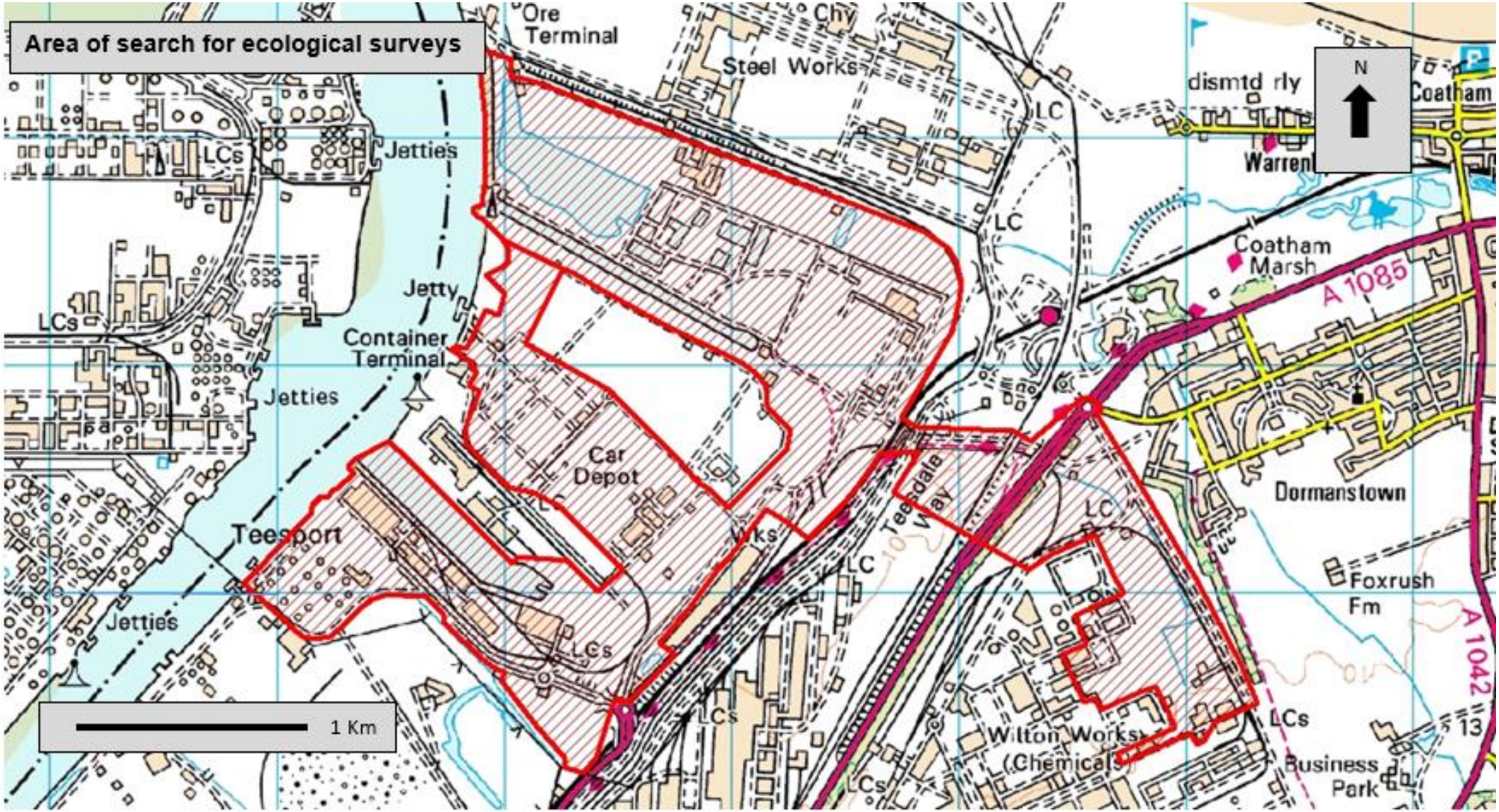


Geoff Barber
Senior Ecologist
Dated 30 March 2014

Checked and approved by



Robert Woods
Ecologist
Dated 1 April 2014


Area of search for ecological surveys
Ore Terminal
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Warren
LC
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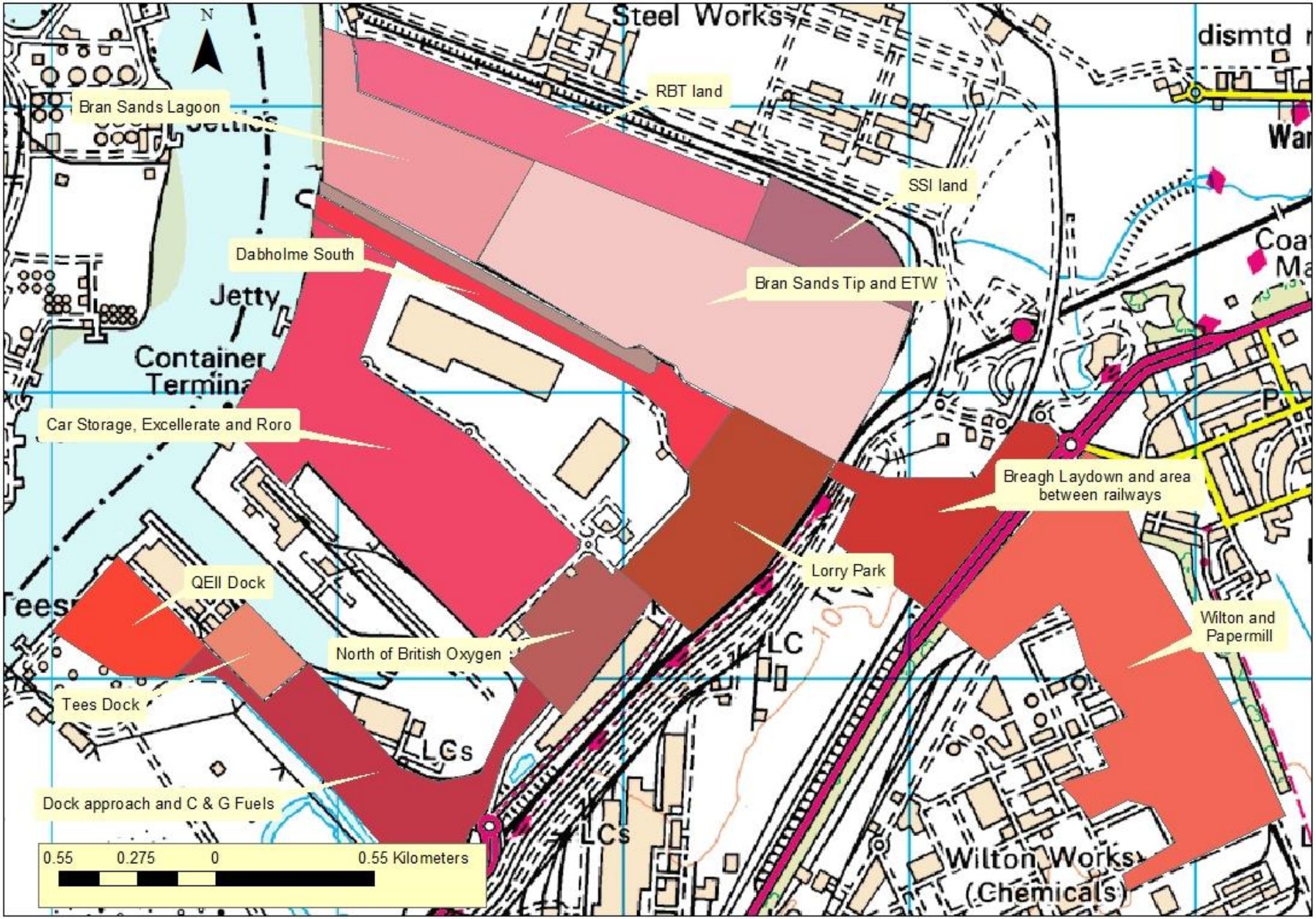
LCs
Jetty
Container Terminal
Coatham Marsh
A 1085
Car Depot
Teesdale Way
Dormanstown
Teesport
Foxrush Fm
A 1042
Wilton Works (Chemicals)
Business Park
1 Km

Map 1



Map2 **Descriptive names used in reports**

Executive summary

No species of plant or animal of national, regional or local interest was recorded during the survey nor was any evidence of such species recorded.

INCA is not aware of any records of the presence of any such species within 2 kilometres of any part of the survey area, however, birds of the over wintering assemblage for which the Teesmouth and Cleveland Coast Special Protection Area is notified, also including cited species, are known to use parts of the area.

Recommendation has been made for further survey or investigation where habitats or features had the potential to support any such species.

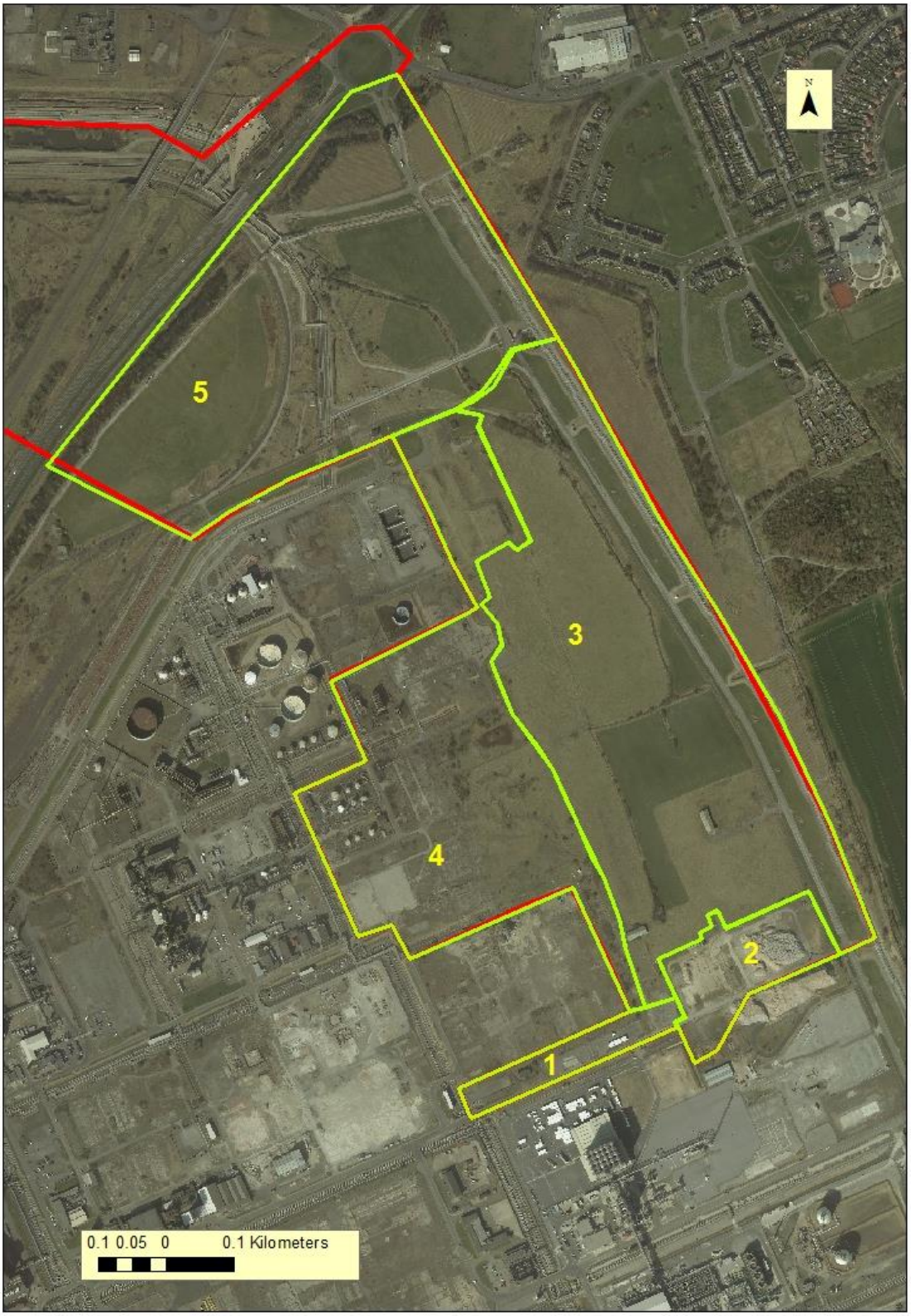
Field Survey

Extended Phase 1 Habitat Survey was undertaken across all areas potentially affected by the proposed development as shown on Map1 during May, June and July 2013 with the exception of the RBT and SSI land which was visited in November 2013.

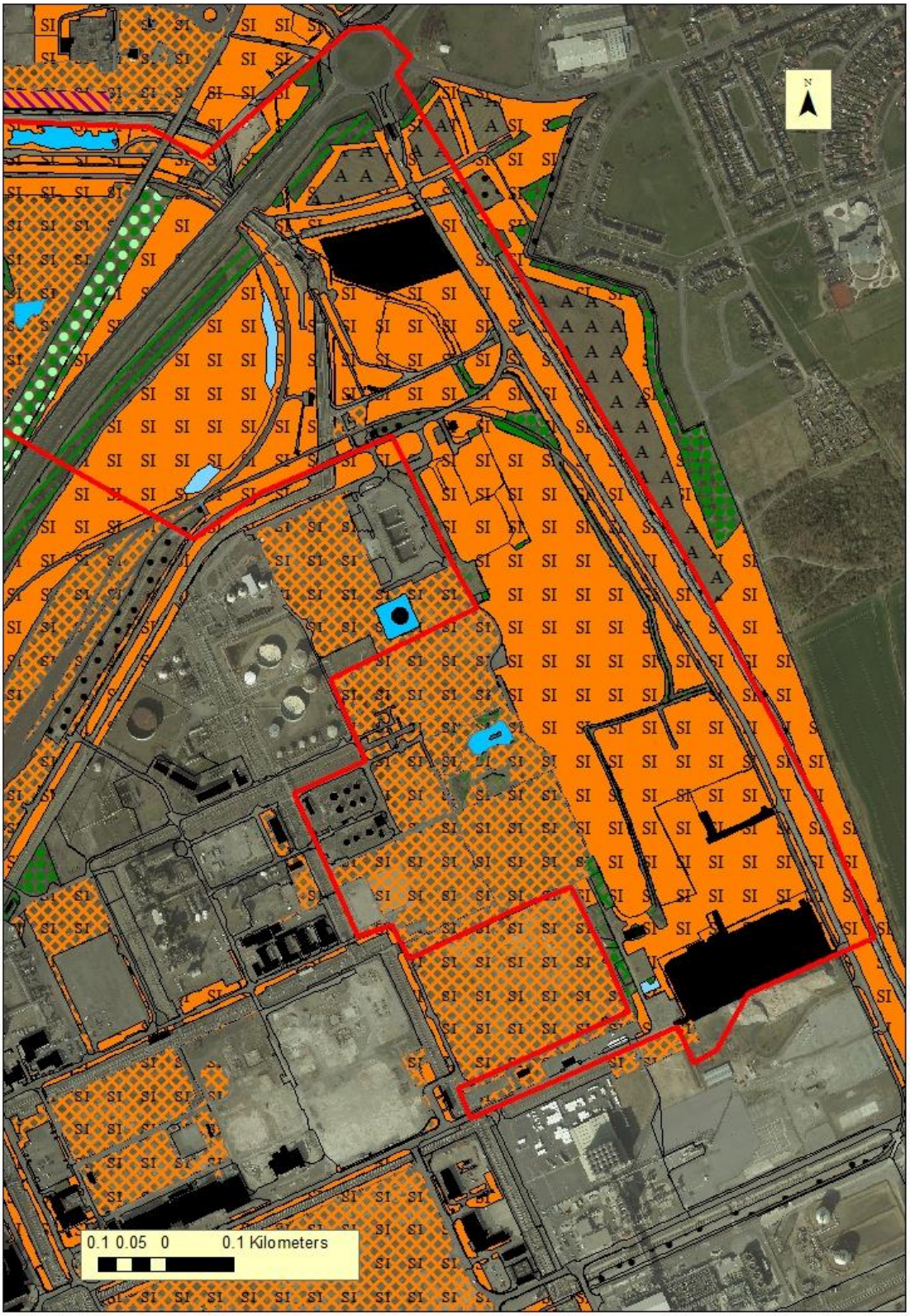
The survey followed the same general approach as described in the Handbook for Phase 1 Habitat Survey (JNCC 1993) but with greater emphasis being placed on recording evidence of, or potential for, the presence of protected species and habitats and species of conservation concern including species listed in national and local biodiversity action plans as well as identification of features or habitats capable of supporting such species.

Photographs showing the general habitats were taken and are included.

The whole area was similarly surveyed in 2011 by INCA and changes which have taken place since that previous survey have been noted.



Map3 **Map of Papermill site with numbered areas**



Map 4 Phase 1 survey map

Wilton and the Papermill Site

Summary

The Wilton Site was farmland until the area was allocated as a Special Planning Zone in the 1960's and the building of the ICI Chemical complex began. The land was improved pasture or arable prior to development. Over the intervening fifty years most of the land under consideration has been developed and then cleared. Some parts of what is known as the "Papermill Site" have remained undeveloped and the more accessible areas of that site are mown on a regular basis over the growing season. Other areas, where access is more difficult, have become rank with a dense thatch.

No habitats of local, regional or national significance are present within the area of search.

No species of local, regional or national significance have been recorded within the area of search.

Area 1

Photo 1

In the south of the site is an area directly north of the SABIC LDPE plant. This area is mainly previously developed land with an infrastructure of tarmac surfaced roads and the concrete hard standing of buildings and plant. Most of this remains bare of vegetation and some areas are being used for storage and stacking of product by SABIC.

Ruderal species such as Evening primrose *Oenothera spp*, Rosebay *Chamerion angustifolium*, Narrow leaved ragwort *Senecio inaequidens* and lots of Bramble *Rubus fruticosus agg* have all colonised between the areas of concrete and tarmac. Mixed scrubby trees such as birch *Betula spp.,* Apple *Malus domestica agg,* Sea buckthorn *Hippophae rhamnoides* and Willow *Salix spp* reach up to two metres tall. Those small areas where the substrate consists of gravel of crushed concrete or slag a calcicolous flora is establishing characterised by such species as Yellow-wort *Blackstonia perfoliata*, Carline thistle *Carlina vulgaris* and Fairy flax *Linum catharticum.*

Value of the habitat

This is brownfield habitat of poor species diversity and little ecological value.

Protected species

No habitats likely to support legally protected species are present in the area.
The area is unlikely to support birds of the Teesmouth and Cleveland Coast SPA.
There may be some nesting of common bird species in the grassland and scrub.

Area 2

Photo 2

In the south of the site and to the north east of Area 1 this is an area of roads and concrete hard standing which, over recent years, has been used for storing waste wood (biomass). The vast majority of the area is devoid of any natural habitat but in some parts the margins between the road and the fence line still retains a verge which is unmanaged and rank grassland.

For the most part these small areas of habitat are neutral grassland characterised by a dense sward of False oat grass *Arrhenatherum elatius* with occasional phorbs such as Dandelion *Taraxacum sp.,* Yarrow *Achillea millefolium*, Hogweed *Heracleum sphondylium* and Narrow leaved ragwort *Senecio inaequidens*.

Value of the habitat

There is little natural habitat in the area and the small amount that does occur is of little ecological value and better represented elsewhere.

Protected species

No habitats likely to support legally protected species are present in the area.
The area does not support birds of the Teesmouth and Cleveland Coast SPA.
Given the use of most of the area for storage it is unlikely to be used by birds for nesting.

Area 3

Photo 3

Photo 4

This is the majority of the Papermill Site, to the north of Areas 1 and 2 and west of Boundary Road. Area 3 has remained almost entirely undeveloped since the creation of the Wilton Site in the 1960's. The area is predominately semi-improved neutral grassland uncultivated since it was previously agricultural land. Those parts which are accessible are cut on a regular basis and remain as a short green sward where few phorbs are able to flower let alone set seed. Those areas inaccessible to the mowing regime have become very rank with a thick thatch.

The whole area is semi-improved neutral grassland. Those areas which are cut are dominated by broad leaved grasses such as False oat grass *Arrhenatherum elatius* and Cock's-foot *Dactylis glomerata* with other grass species such as Common bent *Agrostis capillaris* and Creeping bent *Agrostis stolonifera* with a scattering of common phorbs such as Daisy *Bellis perennis,* Dandelion *Taraxacum officinale agg,* Hogweed *Heracleum sphondylium* and Ribwort plantain *Plantago lanceolata.*

Those areas which are not cut are rank and dominated by False oat-grass *Arrhenatherum elatius*. Small numbers of other species are found such as Hogweed *Heracleum sphondylium,* Yarrow *Achillea millefolium*, Bulbous buttercup *Ranunculus bulbosus,* White clover *Trifolium repens* and Goat's beard *Tragopogon pratensis.*

There is a ditch which runs the length of the Papermill Site. It rises from a culvert in the SE and flows NW before turning NE to join with the Mill Race and again turns NW to flow parallel to the railway along the NE sector of the site. In the north of the site it flows under the railway and is culverted. This ditch is free flowing and carries water in all but the driest of conditions. There is little aquatic vegetation associated with it though in places the margins have Marsh marigold *Caltha palustris,* Great willowherb *Epilobium hirsutum,* Rosebay willowherb *Chamerion angustifolium* and

mint *Mentha sp.* For the majority of its length the ditch is bounded by the rank grassland of the surrounding area but long stretches are engulfed in scrub, particularly of Blackthorn *Prunus spinosa*, Bramble *Rubus fruticosus* and Hawthorn *Crataegus monogyna.*

Adjacent to the railway in the northern part of this site there is a stand of young trees which is almost entirely young Osier *Salix viminalis*. The trees are planted into a basin which appears to serve as an overflow for the culverted Mill Race.

Value of the habitat

This is semi natural habitat but with poor species diversity and little ecological value.

Protected species

The uncut areas of grassland have potential to support common lizard though there is little habitat for basking or hibernacula. **Reptile survey is recommended**.

The cut areas support small numbers of curlew which are one of the birds of the winter assemblage of the Teesmouth and Cleveland Coast SPA. **Over wintering bird survey is recommended.**

The cut grassland supports small numbers of feeding birds and the uncut areas have ground nesting species such as skylark and meadow pipit. **Nesting bird survey has been carried out.**

The ditch has potential to support water vole but is not suitable for otter. **Water vole survey has been carried out**

No signs of badger were seen during the survey.

The buildings and trees on the site offer no opportunity for roosting or hibernating bats. **Bat survey has been carried out**

Area 4

(Photos covering the area from south to north)

Photo 5

Photo 6

Photo 7

Photo 8

To the west of the Papermill site area 4 is a large area of previously developed land which is a mixture of roads, hard standing, tipped materials and derelict structures. The open land between these features supports rank semi-natural grassland which shows the calcareous nature of the substrate, probably crushed blast furnace slag. Where rank this is dominated by grasses such as False oat-grass *Arrhenatherum elatius,* Cock's-foot *Dactylis glomerata* and Creeping bent *Agrostis stolonifera*. Where disturbance, rabbit grazing or thin soils restrict the growth then calcicolous phorb species are present responding to the substrate such as Yellow-wort *Blackstonia perfoliata*, Carline thistle *Carlina vulgaris* and Fairy flax *Linum catharticum* with Toadflax Bird's-foot-trefoil *Lotus corniculatus* and ruderal species such as Rosebay *Chamerion angustifolium,* Evening primrose *Oenothera spp.* and Narrow leaved ragwort *Senecio inaequidens.*

Scrubby trees of Elder *Sambucus nigra*, the willows *Salix caprea* and *Salix cinerea,* birch *Betula pubescens,* Hawthorn *Crataegus monogyna* and domestic apple *Malus domestica agg* are scattered throughout.

In the central eastern part of area 4 is a pond which was created in the early 1990's for nature conservation purposes. The water is shallow and there is no surface water after extended dry periods but it does support amphibian populations of common toad *Bufo bufo,* common frog *Rana temporaria* and smooth newt *Lissotriton vulgaris.* The fringing margins are dense with Common reed *Phragmites australis,* Reedmace *Typha latifolia,* Yellow flag iris *Iris pseudacorus* and a variety of sedges including Bottle sedge *Carex rostrata* and *False fox-sedge C. otrubae*

Photo 9 Pond looking west

Some of the plant species indicate the "created" nature of the pond with species which are not normally found at Teesmouth such as Ragged robin *Lychnis flos-cuculi*, Hard rush *Juncus inflexus* and New Zealand Stonecrop *Crassula helmsii.*

Value of the habitat

This is semi natural habitat but with poor species diversity and little ecological value. The areas of calcicolous grassland, whilst more diverse, are small, transient and better represented elsewhere on Teesside.

The long term value of the pond is threatened by the spread of the *Crassula*.

Protected species

None of this area is suitable for wading birds and no birds of the SPA have been recorded here.

Some bird nesting is likely to take place in the bramble scrub and small trees.

Amphibian survey has taken place on the pond and no Great Crested Newts were recorded.

No signs of badger were seen during the survey.

The buildings and trees on the site offer no opportunity for roosting or hibernating bats. **Bat survey has been carried out over the pond.**

Area 5

This area is north of the Papermill site and up to the northern boundary of the Wilton International site. Most is semi-improved neutral grassland which is regularly cut.

Photo 9

Photo 10

Extending along the north west is a large bund seeded to become semi-improved neutral grassland which is regularly cut.

Part of the area has recently been developed and now has no natural habitats. An area in the northern and eastern parts of the site have been planted up with a willow hybrid (*Salix sp*.) which has been coppiced once for biomass and is currently circa 3m tall.

Photo 11

To the west of the railway the ground is wet but rarely has standing water. This area has been colonised by Common reed *Phragmites australis, Common* Reedmace *Typha latifolia* and Sea club-rush *Bolboschoenus maritimus.*

Between the bund and the northern security fence of the Wilton International site is a strip of landscape tree planting. This is an even aged and crowded stand of trees with include Sycamore *Acer pseudoplatanus,* Whitebeam *Sorbus sp*., a variety of willows *Salix spp* and Elder *Sambucus nigra.*

The Mill Race water course continues through this area on its northward path. Almost all of this has been recently cleared and deepened removing a lot of the vegetation that was on the banks and choking the bed.

Value of the habitat

The grassland are of semi natural habitat but with poor species diversity and little ecological value. Being either regularly cut or extremely rank they are declining in interest.

The screening planting of trees is species poor and single aged making it of little conservation interest.

Protected species

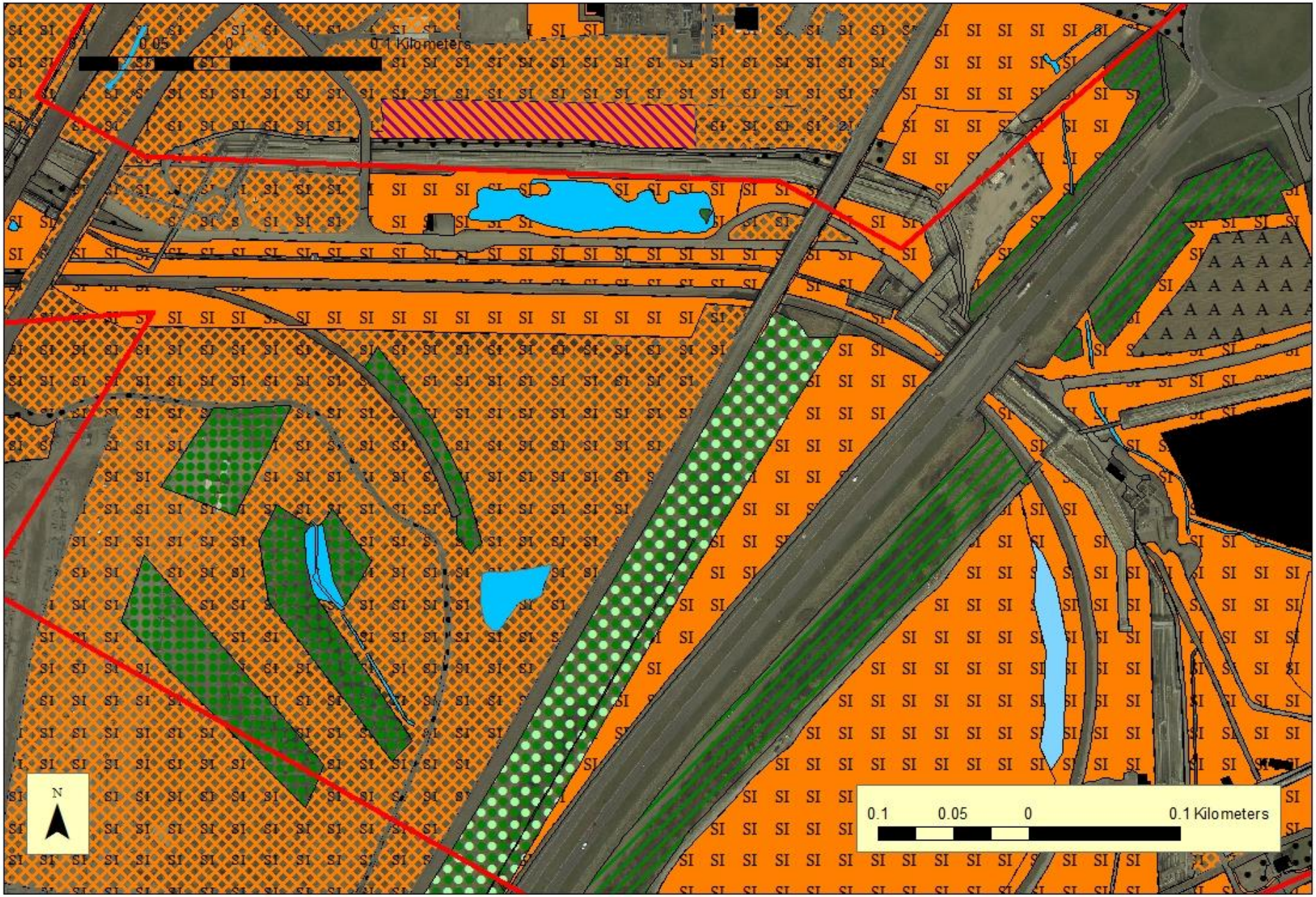
All of the ditch flowing through the site and a very short section which continues on the northern side of the A1085 **has been surveyed for water vole**, for which there was no evidence.

The area is of little value for wading birds and no birds of the SPA have been recorded here.

Some bird nesting is likely to take place in the rank grassland, bramble scrub and small trees.

No signs of badger were seen during the survey.

The buildings and trees in the area offer no opportunity for roosting or hibernating bats.



5 **Phase 1 Survey map of Breagh Laydown and area between railways**

Breagh Laydown and area between railways

Summary

This area lies between the A1085 and the public rail line between Middlesbrough and Saltburn. The northern section is dominated by the SembCorp pipe corridor and access roads but the southern area is a long abandoned area of land in the ownership of Tata Steel which has been left to natural succession.

No habitats of regional or national significance are present within the area of search although the calcareous grasslands on the Tata land could be locally significant in relation to their extent.

No species of local, regional or national significance have been recorded within the area of search.

The roadside verges of the A1085

These are typical roadside verges of neutral semi-improved grassland which are occasionally cut with scattered scrubby trees of Hawthorn *Crataegus monogyna,* Sycamore *Acer pseudoplatanus* and Whitebeam *Sorbus sp.*

Photo 12

In the northern section and adjacent to the Breagh Laydown area is an extensive stand of **Japanese knotweed** *Fallopia japonica.*

In the southern section on the western side is an extensive area of screening planting of trees which include Birch *Betula sp*p., Elder *Sambucus nigra*, Hawthorn *Crataegus monogyna*, Willow *Salix viminalis*, Sycamore *Acer pseudoplatanus* and mixed conifers.

Breagh Laydown

North of the Bran Sands access road and west of the A1085 is an area which up until 2012 was neutral semi-natural grassland but that area was cleared and used as a laydown area for the Breagh Pipeline installation. The area now is bare ground with some piles of building materials and a fringing margin of semi-natural grassland with areas of bramble scrub *Rubus fruticosus.*

Wilton Ecology Pond

Photo 13

Between the Breagh laydown and the Tata road and rail bridges, bounded on the north by the SembCorp pipe corridor and the south by the Bran Sands access road is the Wilton Ecology Pond. The pond was already in existence in the 1980's when it was deepened and extended in area. The margins are dense with Common reed *Phragmites australis* with Common reedmace *Typha latifolia.* The pond itself has dense *Potamageton* weed, especially in the western end, and supports huge numbers of Stickleback *Gasterosteus aculeatus.* There is a resident population of Mallard duck *Anas platyrhynchos* and Canada Geese *Branta canadensis.*

Around the pond is rank neutral semi-natural grassland and semi mature trees of Birch *Betula pubescens* and Goat willow *Salix caprea* with dense areas of Bramble *Rubus fruticosus.*

An area to the west of the pond is recently disturbed and currently supports a sparse cover of vegetation much of which is calcicolous in nature such as Yellow-wort *Blackstonia perfoliata* and Carline thistle *Carlina vulgaris* with Bird's-foot-trefoil *Lotus corniculatus,* Mouse-ear hawkweed *Pilosella officinarum* and Toadflax *Linaria vulgaris.*

Photo 14

Photo 15

South of the pipe corridor and Wilton rail link is an extensive area of land in Tata Steel ownership. This is all made ground and the irregular topography represents the disused railway embankments and history of tipping of blast furnace slag upon which the current vegetation sits. Abandoned for many years this area has developed a diverse series of semi-natural habitats from close grazed grassland to dense scrub and bramble thickets. The underlying slag influences the vegetation especially where grazing, drainage or lack of nutrients prevent it from becoming rank.
The majority is dense, rank grassland of False oat grass *Arrhenatherum elatius* and Cock's-foot *Dactylis glomerata* with less rank areas having Yorkshire fog *Holcus lanatus,* Red fescue *Festuca rubra* and Common bent *Agrostis capillaris.* Large areas of more diverse calcareous grassland occur. Areas have been lost to dense Bramble *Rubus fruticosus* and in places there is complete tree cover of Hawthorn *Crataegus monogyna* and Goat willow *Salix caprea* with a surprisingly large number of apple trees *Malus domestica agg.*

Photo 16

Photo 17

Two water bodies are present. Both are almost completely choked with Sea club-rush *Bolboschoenus maritimus,* Common reedmace *Typha latifolia* and Common reed *Phragmites australis.* Both hold water throughout the year and have amphibian populations.

Roe deer *Capreolus capreolus* are regularly seen in this area in groups of up to three and fawns have also been seen suggesting that this is an area chosen for breeding.

Value of the habitat

The Wilton Ecology Pond has too many Stickleback *Gasterosteus aculeatus* and ducks to be of any of any great ecological value.

The screening planting of trees is species poor and single aged making it of little conservation interest.

The extent of the semi-improved calcareous grasslands on Tata land south of the pipe corridor make them of some significance but there are better examples elsewhere in Teesside.

Protected species

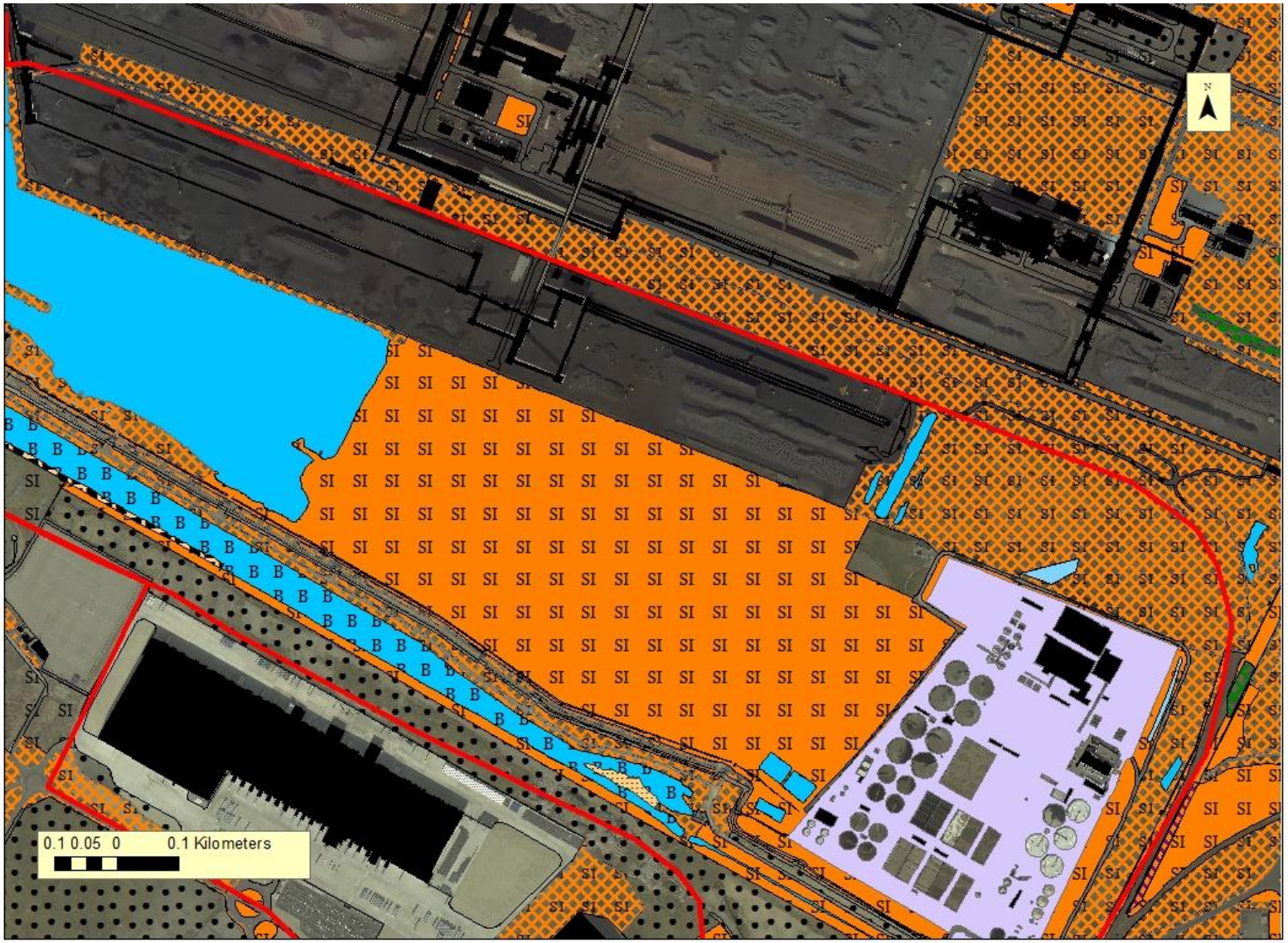
The Wilton Ecology Pond was **surveyed for amphibian and water vole.**

The area is of little value for birds of the SPA and none have been recorded other than relatively small numbers, in SPA terms, of common ducks using the pond.

Some bird nesting is likely to take place in the rank grassland, bramble scrub and small trees across the whole area.

No signs of badger were seen during the survey.

The trees in the area offer no opportunity for roosting or hibernating bats but there is extensive habitat which could be used for foraging. **Bat survey of the bridges is recommended.**



Map 6 **Phase 1 survey map of RBT and SSI land**

RBT and SSI land

Photo 18

Photo 19

Summary

The land to the north of the Bran Sands Lagoon and the Bran Sands Tip has been used for coal storage for over thirty years. As is clear from the photographs, it is entirely bare ground or under piles of coal with only very small patches of grassland and ruderal species established in areas not driven over for some time such as around signage or along the base of the perimeter fence.

Species recorded include Rosebay *Chamerion angustifolium,* Bramble *Rubus fruticosus agg,* Charlock *Sinapis arvensis,* Coltsfoot *Tussilago farfara,* Common chickweed *Stellaria media,* Common ragwort *Senecio jacobaea* and Creeping thistle *Cirsium arvense* with grasses such as Creeping bent *Agrostis stolonifera,* and Fern grass *Catapodium rigidum.*

Photo 20

On the south eastern corner of the coal stacking area is a mound of bulldozed material. This is sparsely vegetated but has a dense stand of Sea buckthorn *Hippophae rhamnoides.*

Photo 21

The area of land to the east, north of the Northumbrian Water's ETW, is undulating and irregular topography suggestive of extensive tipping, probably of blast furnace slag. The area has been unused for a long period and the vegetation is for the most part rank and in places scrubby. The grassland is semi-improved calcareous but is dominated by False oat grass *Arrhenatherum elatius* and Cock's-foot *Dactylis glomerata.* There are large areas of Bramble *Rubus fruticosus agg* thicket and stands of Japanese rose *Rosa rugosa.* 2 -3m high Goat willow *Salix caprea,* Hawthorn *Crataegus monogyna* and apple trees *Malus domestica agg* are scattered throughout. In the relatively small areas where rabbit grazing prevents the encroachment of the dominant grasses then the calcicoles such as Yellow-wort *Blackstonia perfoliata* Carline thistle *Carlina vulgaris* Fairy flax Linum *catharticum* and Common cat's-ear *Hypochoeris radicata* can be seen.

Photo 22

Photo 23

At the western end bounding the coal stacking area are two large water bodies and the remains of two others which have vegetated over. These are manmade and have the regular appearance of functional features rather than being accidental, possibly previously used as settlement pools. Both remaining pools are steep sided and deep (>2m) with a narrow fringing margin of emergent vegetation, especially Sea club-rush *Bolboschoenus maritimus,* Common reed *Phragmites australis* and Common reedmace *Typha latifolia.*

Value of the habitat

There are no significant natural habitats associated with the coal stacking areas.

The water bodies to the east are not natural and offer little for most wildlife being steep sided and deep.

The grassland north of the Northumbrian Water's ETW is for the most part rank and species poor.

Protected species

The ponds were **surveyed for amphibia.**

None of the area is of value for birds of the SPA being either bare of vegetation and very disturbed or extremely rank.

Some bird nesting is likely to take place in the rank grassland, bramble scrub and small trees across the east of the area.

No signs of badger were seen during the survey.

The trees in the area offer no opportunity for roosting or hibernating bats.

Map 7 **Phase 1 survey map of Bran Sands Lagoon**

Bran Sands Lagoon

Photo 24

Summary

Enclosed from the estuary during the original reclamation this area was never filled and has remained an area of intertidal water connected to the river by a single pipe. Because of the restricted flow in and out the tidal range is relatively small. The depth appears to range from shallow in the east where waders are seen to feed to deeper in the west where diving duck are most often found. The margins to the lagoon are steep sided and there are no intertidal habitats such as exposed mud or saltmarsh.

There is an underwater “wall” which extends from the tip in the east to a promontory in the west which was to be the basis of a landfill cell. Whilst this feature is rarely exposed on low water it is shallow enough to afford roosting and feeding for wading birds.

Photo 25

The northern bank is steep and composed of large sized material. The grassland which has developed on it is, for the most part, sparse and uneven. It appears to be affected by runoff from the adjacent coal handling site, supporting such diverse species as Bracken *Pteridium aquilinum*, Sea aster *Aster tripolium*, Meadow buttercup *Ranunculus acris* and Mignonette *Reseda lutea.*

Photo 26

In the north east corner of the lagoon a small reedbed has developed and there is some evidence of leachate from the adjacent tip in that area.

Photo 27

The bank between the lagoon and the river on the western side is reasonably wide and carries a track bounded by semi-natural calcareous grassland. Whilst the grassland is fairly rank it still retains some of the characteristic calcicole plants such as Yellow-wort *Blackstonia perfoliata,* Carline thistle *Carlina vulgaris,* Fairy flax *Linum catharticum,* Great lettuce *Lactuca virosa,* and Common cat's-ear *Hypochoeris radicata* with Bird's-foot-trefoil *Lotus corniculatus,* Common centaury *Centaurium erythraea,* Goat's beard *Tragopogon pratensis,* Kidney vetch *Anthyllis vulneraria* and Wild carrot *Daucus carota.*

Photo 28

Between the lagoon and Dabholme Gut there is the access road, the pipe corridor and the service tracks all of which are bare of natural habitats, however, in the south western part an area of land exists which supports an area of semi-natural calcareous grassland which is reasonably diverse. It is similar in nature to the grasslands to the west of the lagoon but it is somewhat less rank possibly having been disturbed more recently. It supports the characteristic calcicole plants such as Yellow-wort *Blackstonia perfoliata,* Carline thistle *Carlina vulgaris,* Fairy flax Linum *catharticum,* Great lettuce *Lactuca virosa,* and Common cat's-ear *Hypochoeris radicata* with Bird's-foot-trefoil *Lotus corniculatus,* Common centaury *Centaurium erythraea,* Goat's beard *Tragopogon pratensis,* Kidney vetch *Anthyllis vulneraria* and Wild carrot *Daucus carota.*

Value of the habitat

The intertidal waters of Bran Sands lagoon offers both feeding and shelter in a relatively undisturbed area to a wide range of birds of the SPA. At times numbers for some species reach significant proportions of the SPA populations. Likewise the fully tidal habitats of Dabholme Gut are also a significant feeding area with birds vacating the area on a high tide only to roost and feed on the adjacent lagoon until the tide falls again. **Bird survey has been undertaken here for over five years.**

The surrounding semi-natural calcareous grassland, whilst not extensive, is probably of some local significance as open mosaic habitat on previously developed land.

Protected species

The lagoon is saline and could not support amphibia.

The areas of grassland coupled with the blast furnace slag of the sea walls mean that parts of this site have potential to support common lizard. It is the nearest potential habitat within the development boundary to the historic records for common lizard at Coatham Sands though separated from that site by the extensive and very hostile areas of the steel works site. **Reptile survey is recommended**

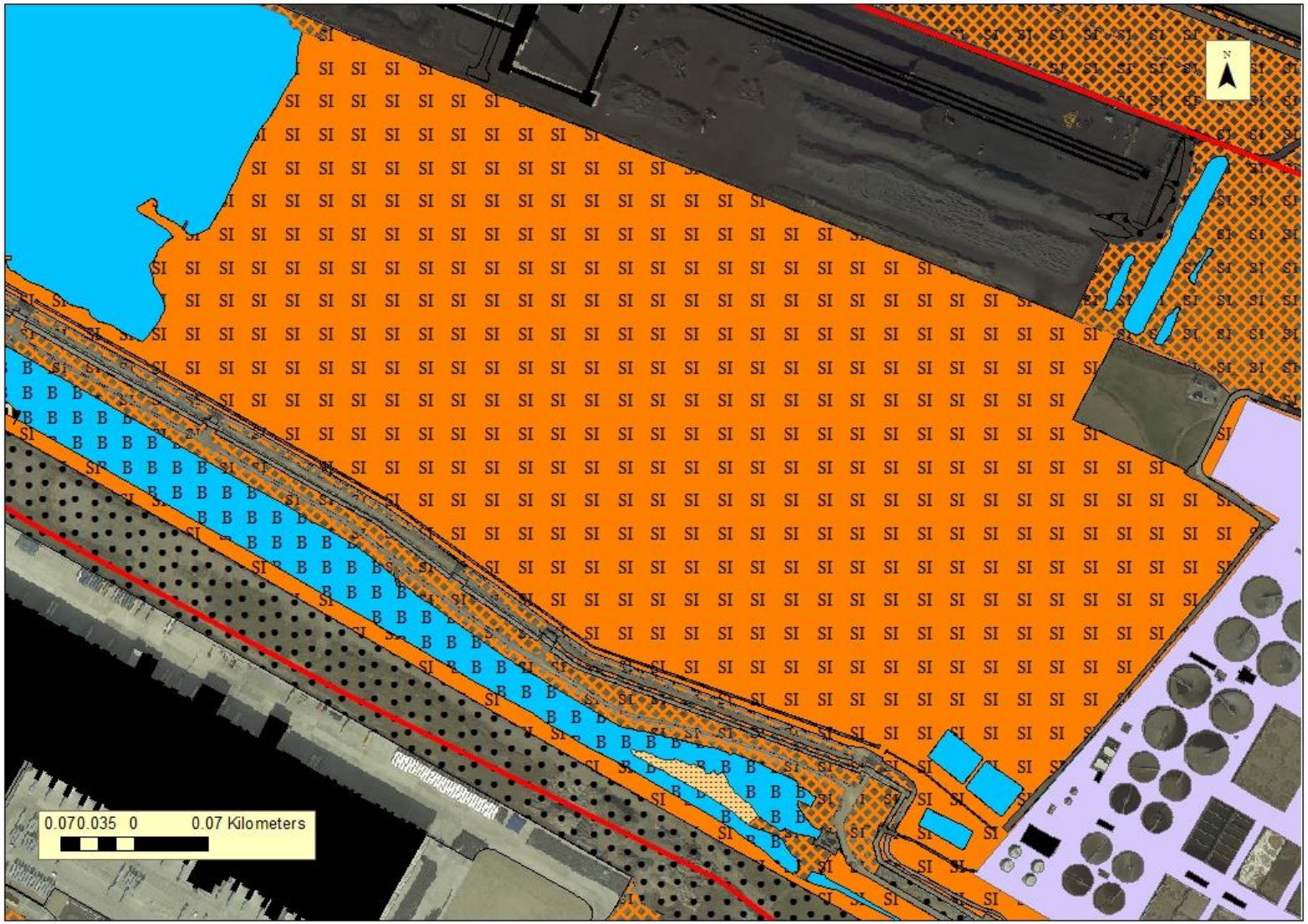
Otter have been recorded on the Tees in this area and s**urvey for this species is recommended.**

Some small amount of bird nesting by such species as Skylark and Meadow Pipit is likely to take place in the undisturbed grassland.

No signs of badger were seen during the survey.

The buildings in the area offer some very low risk of roosting bats, **survey is recommended.**

Fox and roe deer are regularly seen in the south east corner of the lagoon.



Map 8 **Phase 1 survey map of Bran Sands Tip**

Bran Sands Tip

Photo 29

Photo 30

Photo 31

Summary

This restored landfill site was completed in 2009. The cap was top soiled and seeded with a grassy seed mix including White clover *Trifolium repens* and has resulted in a very even and uniform neutral grassland with scattered Spear thistle *Cirsium vulgare* and Broad-leaved dock *Rumex obtusifolius*. The cap has caused some ponding of water in places and Common reed *Phragmites australis* and Coltsfoot *Tussilago farfara* occur but standing water is very short lived.

Value of the habitat

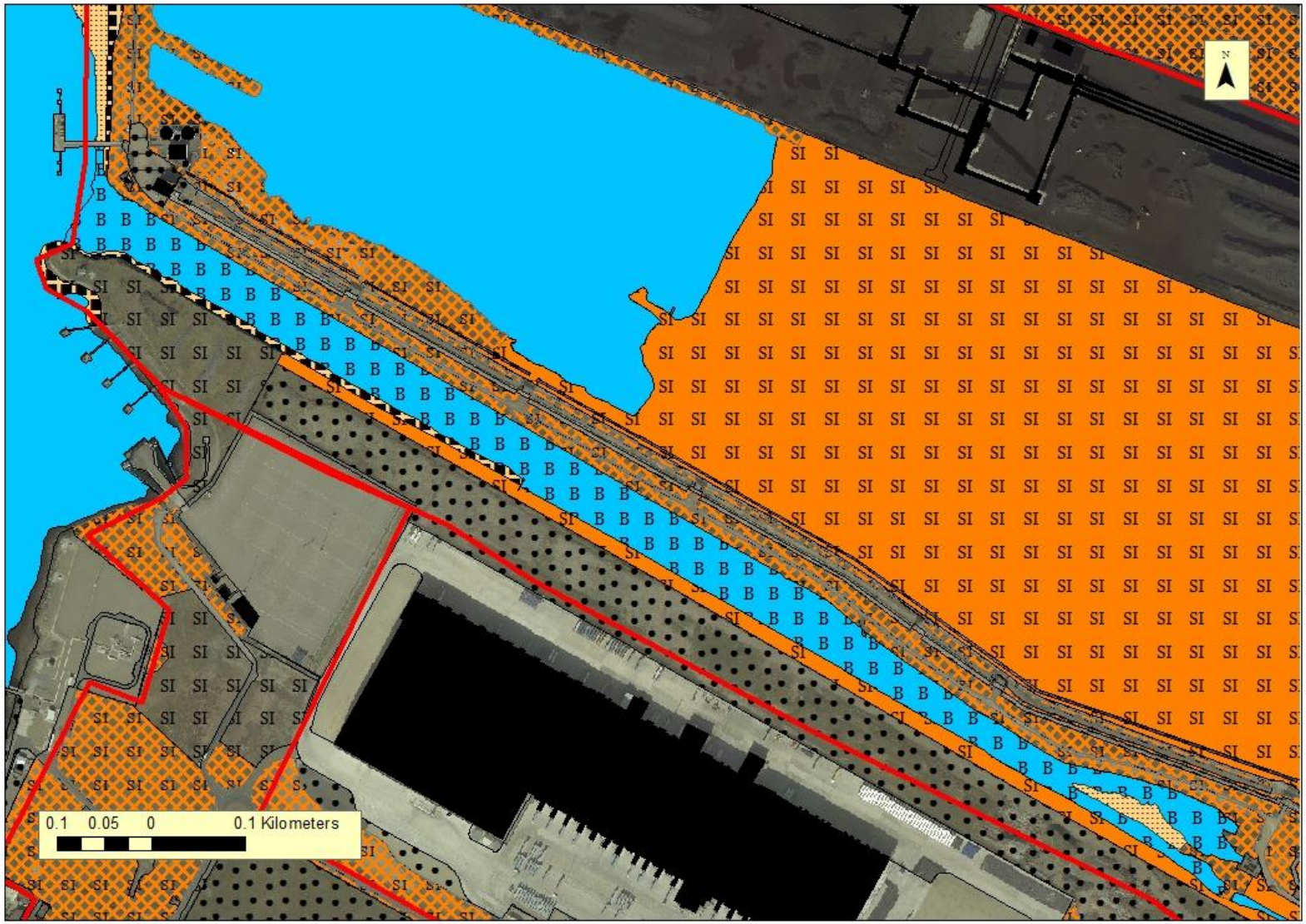
This is recently created habitat and has achieved little nature conservation value to date.

Protected species

Some small amount of bird nesting by such species as Skylark is likely to take place in the undisturbed grassland but this is diminishing as the grassland becomes more rank. **Nesting bird survey has been undertaken.**

No birds of the SPA were seen to use this area probably because the habitat holds little feeding potential and is somewhat too exposed for roosting.

No signs of badger were seen during the survey.



Map 9 **Phase 1 Survey Map of Dabholme Gut**

Dabholme Gut

Photo 32

Photo 33

Summary

Dabholme Gut is the remnant of an original stell or water course which carried the waters of Dabholme Beck and The Fleet through the original intertidal saltmarsh and mudflats. Much altered and straightened the upper reaches of the watercourse are

isolated from the tidal regime by flap valves. The lower reaches are tidal and inundated on all tides.

Historically the outfall from ICI's Wilton Plant discharged into the Gut and pollution and contamination levels are reported to have been very high. In the mid 1990's the Bran Sands ETW opened and this had two effects, firstly to treat the discharges from the Wilton Site and secondly the discharge from the secondary treatment of domestic sewage was directed into the Gut. Over twenty years of enrichment by the sewage discharge the surface muds of the Gut have become suitable for the survival of intertidal invertebrates and the area has become a significant feeding ground for birds of the SPA. It is also attractive in that it is sheltered from severe weather by the banks on either side. This may deter some species from feeding here.

The banks are steep and made from blast furnace slag. Below high water these are exposed, rocky and support marine algae. Above the tidal range they are covered in rank grassland dominated by False oat grass *Arrhenatherum elatius* with areas of dense Bramble *Rubus fruticosus agg.* The calcareous nature of the substrate has almost been lost to the rank growth but in places where the ground has been disturbed such species as Great lettuce *Lactuca virosa* and Carline thistle *Carlina vulgaris* are found.

Giant hogweed has occurred in this area probably from seed washed up on the shore but it has been treated for the past three years by PD Teesport and SembCorp and possibly eradicated.

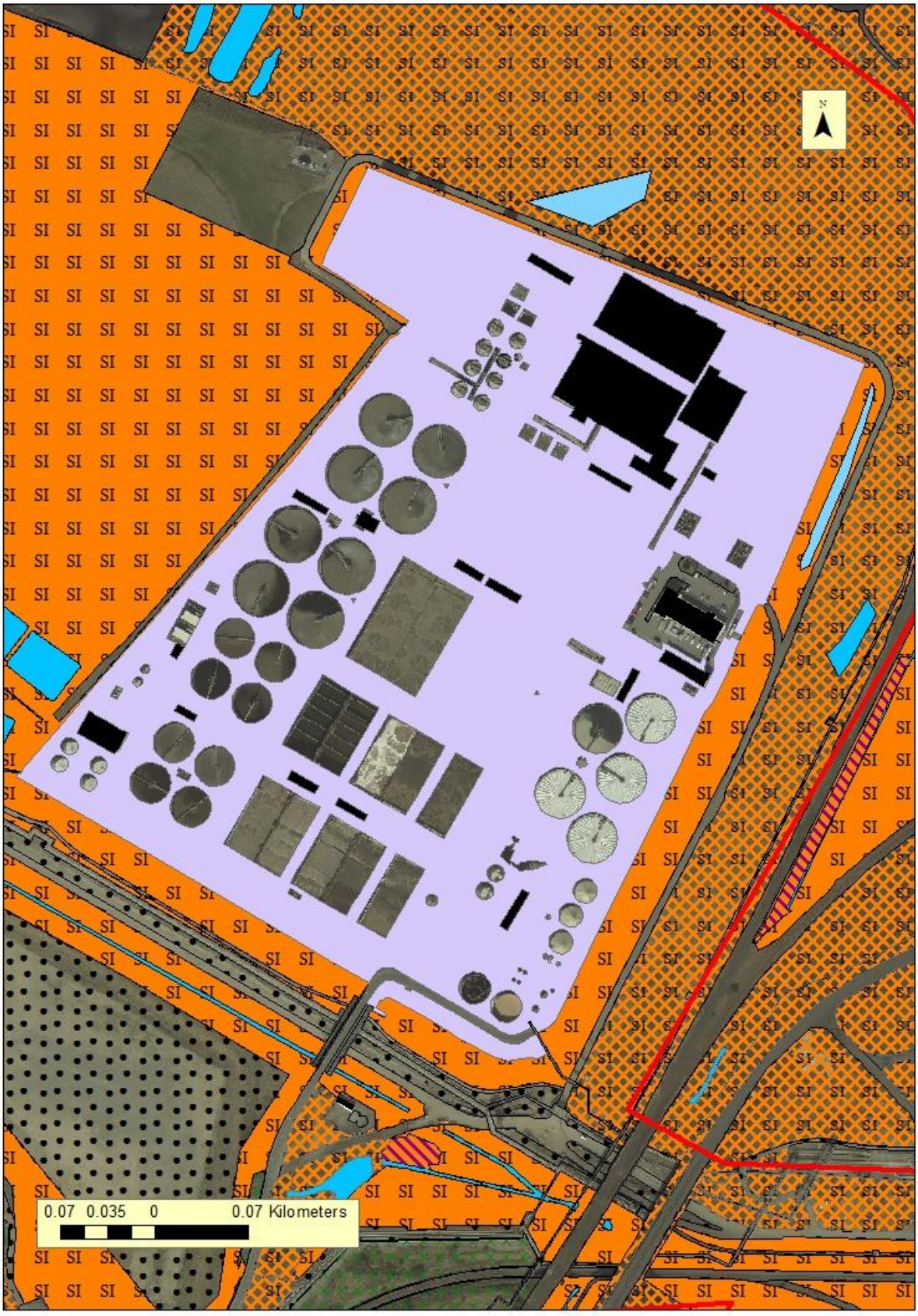
Value of the habitat

The intertidal mud is enriched by the outfall from the ETW and has become an important feeding habitat for waders. Numbers for some species reach significant proportions of the SPA populations at times. **Bird survey has been undertaken here for over five years**

Protected species

Otter have been recorded on the Tees in this area but, whilst this species may feed on the Gut at high water and has been recorded up stream on Dabholme Beck, the habitats of the banks do not lend themselves to permanent or temporary holts.

The habitats are not ones which would support any other protected species.



Map 10 Phase 1 Survey map of Northumbrian Water Bran Sands ETW

Northumbrian Water Bran Sands ETW

The ETW is a site without natural habitats. It is entirely hard standing or gravelled areas which are maintained as bare ground. The only vegetation within the site is a small area of landscape tree planting around the office car park.

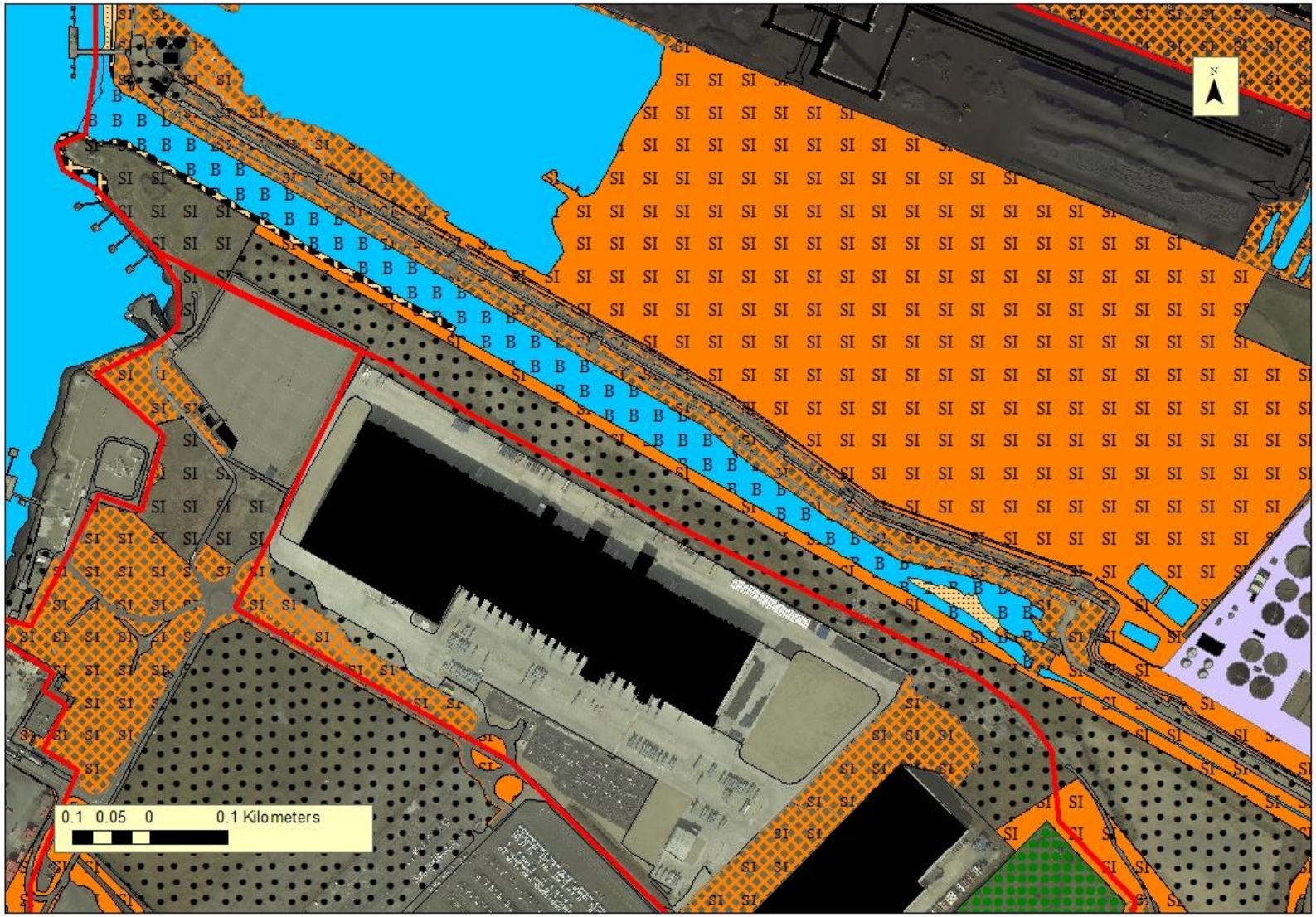
Value of the habitat

None.

Protected species

None recorded.

Whilst office buildings may support bats they are not to be affected by the development which will be some significant distance from any potential bat roosts.



Map 11 **Phase 1 survey map of Dabholme South**

Dabholme South

This corridor of land south of Dabholme Gut and north of the Tesco and ASDA warehouses on Teesport is an area where extensive tipping of building material has taken place in recent years.

Photo 34

A track runs parallel to the gut and the land between the track and the gut is less disturbed. Here more established neutral grassland is becoming rank. Dominated by False oat grass *Arrhenatherum elatius* the area has Clustered dock *Rumex conglomeratus,* Bird's foot trefoil *Lotus corniculatus*, Common toadflax *Linaria vulgaris*, Creeping cinquefoil *Potentilla reptans*, Field horsetail *Equisetum arvense*, Lesser trefoil *Trifolium dubium*, Spear thistle *Cirsium vulgare*, Mugwort *Artemisia vulgaris*, Ribbed melilot *Melilotus officinalis*, Scentless mayweed *Tripleurospermum inodorum* and Ribwort plaintain *Plantago lanceolata.*

Photo 35

South of the track large accumulations of broken concrete, building materials and other spoil are piled up to 6m. Most recent piles are without vegetation but those which have been there longest have a covering of mostly ruderal species such as Bramble *Rubus fruticosus agg,* Coltsfoot *Tussilago farfara,* Charlock *Sinapis arvensis,* White melilot *Melilotus alba,* Creeping thistle *Cirsium arvense,* Broad-leaved dock *Rumex obtusifolius,* Ragwort *Senecio jacobaea,* Rosebay *Chamerion angustifolium,* Dog rose *Rosa canina,* Spear thistle *Cirsium vulgare* and Stinging nettle *Urtica dioica.*

The west of this area has had soil or sub soil spread and at the time of survey was mostly bare ground with a scattering of White melilot *Melilotus alba,* Coltsfoot *Tussilago farfara* and Kidney vetch *Anthyllis vulneraria.*

Giant hogweed *Heracleum mantegazzianum* has occurred in the east of this area but it has been treated for the past three years by PD Teesport and SembCorp and probably now eradicated.

Value of the habitat

The majority of the area has little ecological value.

Protected species

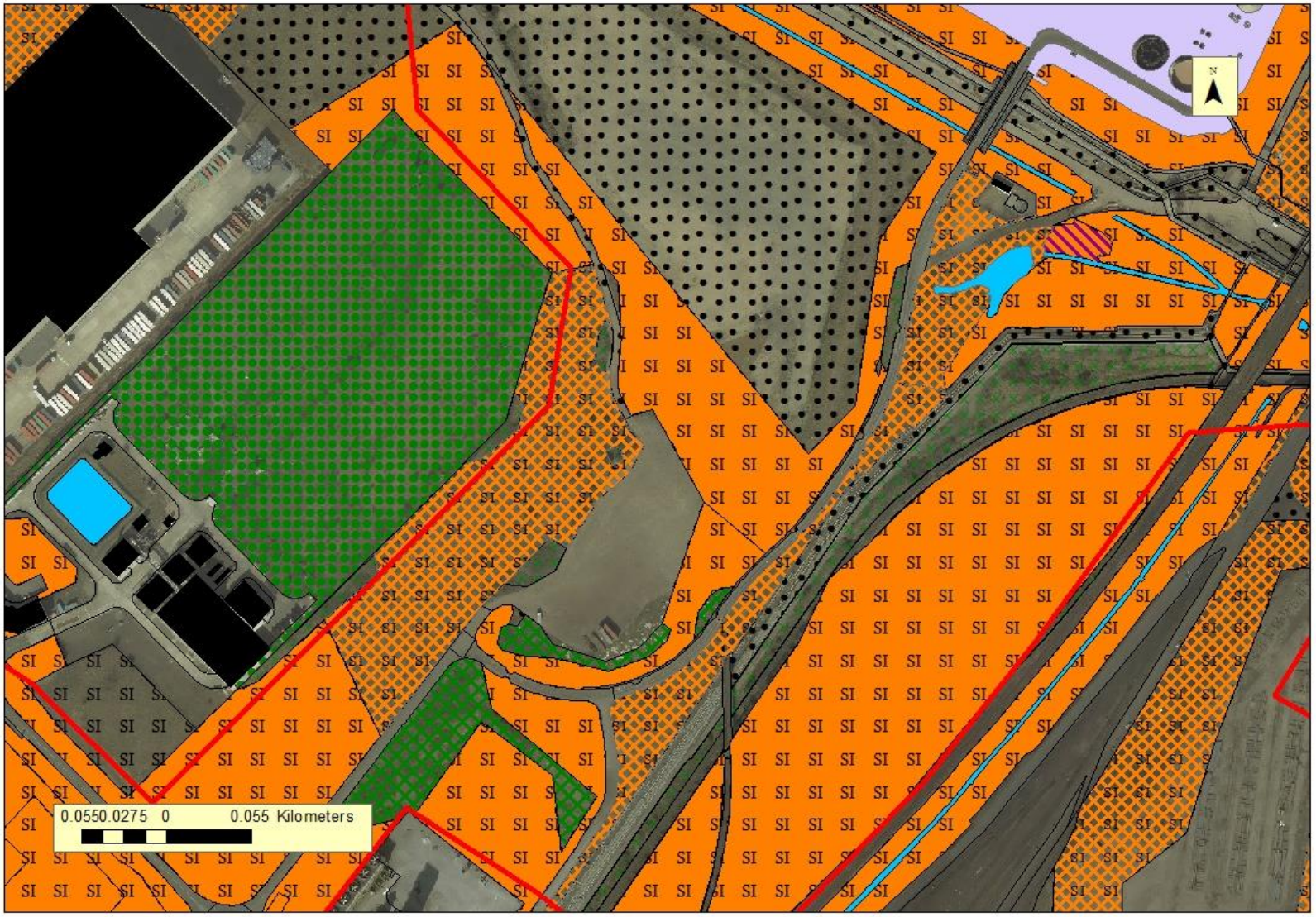
Otter have been recorded on the Tees in this area but, whilst this species may feed on the Gut at high water and has been recorded up stream on Dabholme Beck, the

habitats of the banks South of Dabholme Gut do not lend themselves to permanent or temporary holts.

The areas of tipped material could be used as hibernacula by reptiles and the established grassland to the south of the Gut could be a foraging area for common lizard. **Reptile survey is recommended**

No signs of badger were seen during the survey.

The habitats are neither ones which would support birds of the SPA nor any other protected species.



Map 12 **Phase 1 survey map of Lorry Park area**

Lorry Park

This is a complex area with a mix of habitats. The lorry park itself is a large area of bare ground used for the parking of lorries.

Photo 36

North of the lorry park up to Dabholme Beck is an area recently tipped and levelled which is also mostly bare ground with Ribbed and White Melilot, *Melilotus officinalis* and *M. alba* beginning to establish.

Photo 37

To the east is the access road to Northumbrian Water Bran Sands ETW and an area by the Eston Pumping Station which is managed by NWL as a nature reserve. There are small areas of calcareous grassland here but the majority of this site is taken up by a small pond and extensive reed beds.

Photo 38

There is also an area of planted trees including Grey willow *Salix cinerea,* Birch *Betula pubescens* and Goat willow *Salix caprea*

Photo 39

West of the lorry park is an area of rank grassland which had dredgings spread over it approximately seven years ago. The vegetation here has passed through a series of successional changes to reach the stage it has now where it is dominated by a small number of species including Kidney vetch *Anthyllis vulneraria* and False oat grass *Arrhenatherum elatius.*

Photo 40

South of the Lorry Park and north of British Oxygen is also rank grassland but with extensive areas of dense bramble thicket interlaced with Hedge bindweed *Calystegia sepium*.

Giant hogweed *Heracleum mantegazzianum* has occurred in a number of places across this area, especially around the Kemira fence line, around the lorry park and on the banks of Dabholme Beck within the NWL nature reserve. This infestation has been the focus of sustained treatment for the past three years by PD Teesport, NWL and SembCorp and has possibly been eradicated.

Small areas of **Japanese knotweed** *Fallopia japonica* have also been treated to the west of the lorry park.

Value of the habitat

None of the habitats within this area are of any local significance.

Protected species

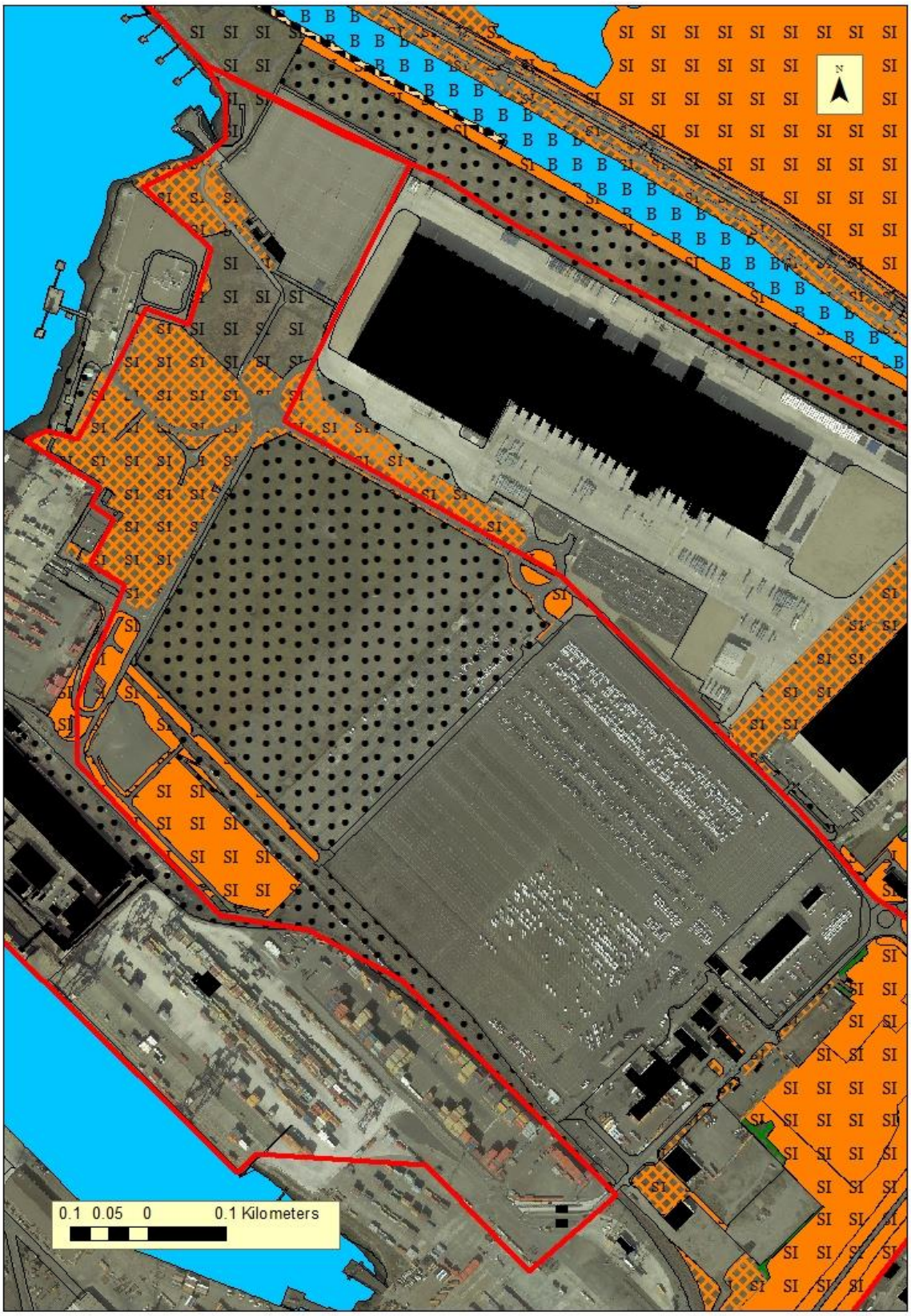
The rank grasslands and piles of debris in parts of this area offer potential habitat for reptiles. Reptile survey has been carried out in the most likely areas.

None of the area is suitable for birds of the SPA.

Some bird nesting is likely to take place in the less disturbed areas of scrub and grassland though none of any significance were recorded during this or any other surveys.

Amphibian survey was carried out on a pond within the NWL nature reserve in 2006 and found no amphibian species. At the time of this survey the “pond” was completely overgrown with Common Reed *Phragmites australis* and little open water was seen.

No signs of badger were seen during the survey.



Map 13 **Phase 1 survey map of Car storage, Excelerate and Roro area**

Car storage, Excelerate and Roro area

The vast majority of this site is used for imported car storage. Most is tarmac hard standing but the section to the northwest is used less and is maintained as bare gravel.

South west of the car storage area is an active rail line to the Cleveland Potash facility on Tees Dock. The land of the rail line is maintained as bare ground but small areas of rank neutral grassland are present along some of the margins and around the surfaced car parking areas. One larger patch of neutral grassland remains between the railway and surrounding roads which appears to have been covered in river dredging some time ago and is in an advanced stage of succession. The area is dominated by False oat grass *Arrhenatherum elatius* and Cock's foot *Dactylis glomerata* with Bird's foot trefoil *Lotus corniculatus,* Common bent *Agrostis capillaris,* Common hogweed *Heracleum sphondylium,* Common ragwort *Senecio jacobaea,* Kidney vetch *Anthyllis vulneraria,* Yorkshire fog *Holcus lanatus* and Yarrow *Achillea millefolium.*

The land to the east of Excelerate and the land to the west of ASDA was used as laydown for these two developments respectively. The disturbance from that use is still evident with large areas of bare ground and piles of rubble in places. There are patches of Bramble thicket *Rubus fruticosus* and Rosebay willowherb *Chamerion angustifolium* but the underlying substrate, being river dredging, means that there is a calcareous element to the flora in those areas where the regeneration is more even. In those areas the flora has Yellow-wort *Blackstonia perfoliata,* Carline thistle *Carlina vulgaris* with Colt's foot *Tussilago farfara,* Blue fleabane *Erigeron acer,* Kidney vetch *Anthyllis vulneraria,* Hawkweeds *Hieracium agg,* Lesser trefoil *Trifolium dubium,* Wild mignonette *Reseda lutea*, Mugwort *Artemisia vulgaris,* Ribbed melilot *Melilotus officinalis,* Ribwort plaintain *Plantago lanceolata,* Scentless mayweed *Tripleurospermum inodorum* and small patches of Northern Marsh Orchid *Dactylorhiza purpurella.*

Between the ASDA development and the river is an area previously used as a RORO terminal. Associated with this is a large concrete area, bare of vegetation and occasionally used for biomass (wood) storage.

Value of the habitat

None of the habitats within this area are of any local significance.

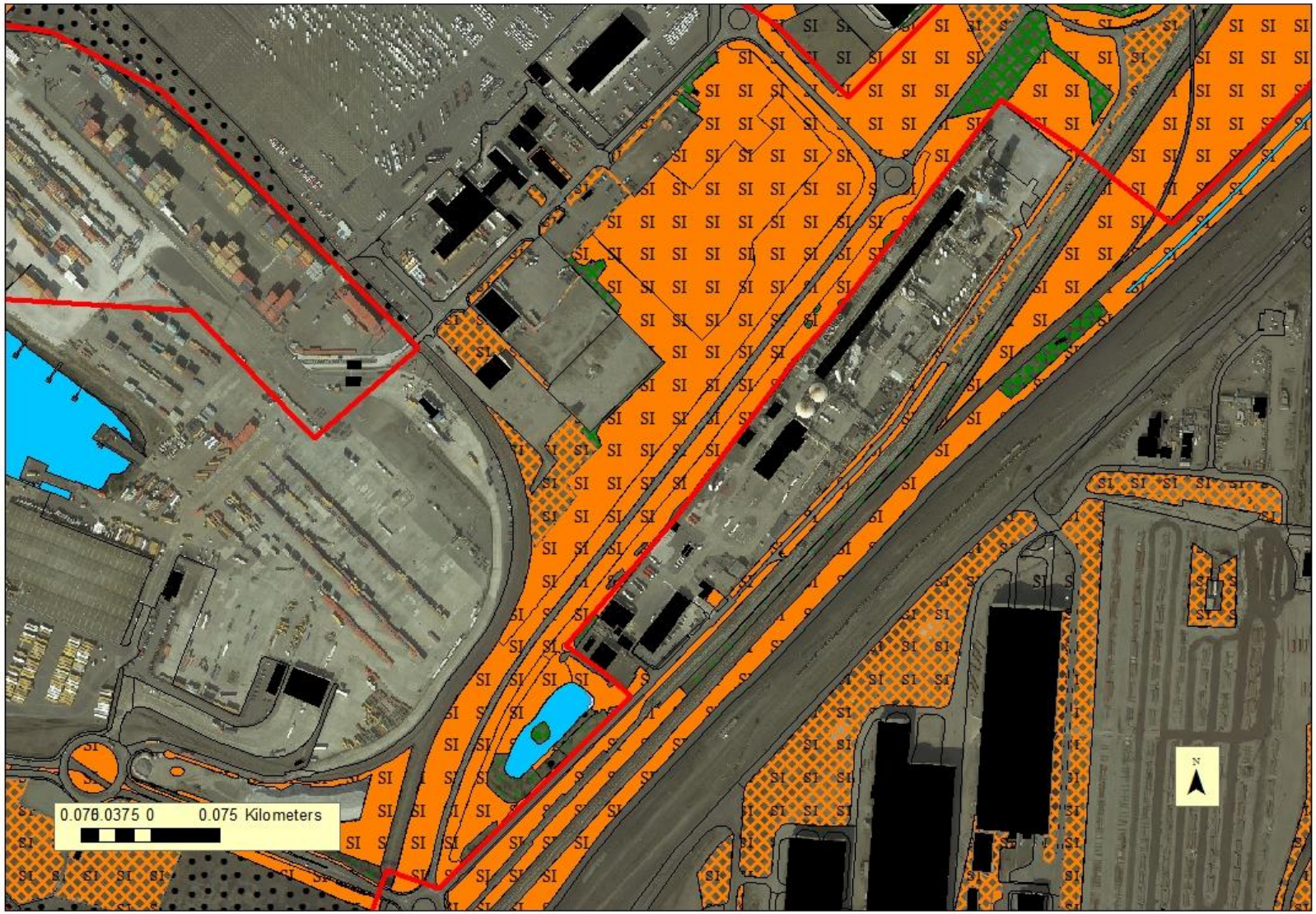
Protected species

Most of the area is unsuitable for birds of the SPA. Those areas of sparse vegetation and hard standing have the potential to support roosting birds but none have ever

been recorded in this area during any of the surveys undertaken and the area is visited every two weeks to record birds from the river bank.

Some bird nesting is likely to take place in the less disturbed areas of scrub and grassland though none of any significance were recorded during this or any other surveys.

No signs of badger were seen during the survey.



Map 14 **Phase 1 survey map of area west of British Oxygen**

West of British Oxygen

Between British Oxygen and the road to the west is a strip of land which is mostly rank neutral grassland with areas of scrub and bramble thicket. To the north east of this area there is a ditch which is usually dry except in wet weather when it runs to a culvert adjacent to the roundabout and probably connects to the water course which runs parallel to the road south west of ASDA.

Photo 41

The grassland is dominated by False oat grass *Arrhenatherum elatius* and Cock's foot *Dactylis glomerata* with Bird's foot trefoil *Lotus corniculatus,* Common bent *Agrostis capillaris,* Common hogweed *Heracleum sphondylium,* Ribwort plaintain *Plantago lanceolata,* Prickly sow-thistle *Sonchus asper*, Red clover *Trifolium pratense,* Common ragwort *Senecio jacobaea,* Kidney vetch *Anthyllis vulneraria* and Yarrow *Achillea millefolium.* There are scattered patches of dense Rosebay *Chamerion angustifolium* and areas of scrub which are mostly Bramble *Rubus fruticosus agg* and Dog rose *Rosa canina* with Hawthorn *Crataegus monogyna* and Goat willow *Salix caprea.*

The immediate roadside, on both sides, is almost bare of vegetation which could be due to compaction but looks more like the result of herbicide use.

Photo 42

To the south west adjacent to the main roundabout is a balancing pond with the land around it set aside for nature conservation. The area around the pond is mainly grassland with a species mix as described above but Teasel *Dipsacus sylvestris* is common in the eastern area and Bird's foot trefoil *Lotus corniculatus* on the south facing bank in the north. Dense areas of Bramble *Rubus fruticosus agg* scrub occur throughout. The western slopes have been planted with Birch *Betula pubescens,* Willow *Salix caprea* and Blackthorn *Prunus spinosa.* On the southern slope there was a large area of Japanese knotweed *Fallopia japonica* which has now been eradicated leaving a large area bare of vegetation at the time of survey.

The pond has some fringing vegetation of Common reed *Phragmites australis a*nd Sea club-rush *Bolboschoenus maritimus* but no floating vegetation. There are at least five very large koi carp *Cyprinus carpio haematopterus* in the pond and previous amphibian survey has failed to find any evidence of populations.

Photo 43

West of the road is a large area where dredgings were spread eight years ago. When surveyed five years ago the area was almost a monoculture stand of four foot high Ribbed melilot *Melilotus officinalis.* Since then the vegetation has become more diverse with Kidney vetch *Anthyllis vulneraria* being very common and other species including Common ragwort *Senecio jacobaea*, Cock's foot *Dactylis glomerata,* Broad leaved dock *Rumex obtusifolius*, Bird's foot trefoil *Lotus corniculatus*, Ribwort plaintain *Plantago lanceolata*, Common hogweed *Heracleum sphondylium* and Prickly sow-thistle *Sonchus asper.*

The western part of this area has developed plots with buildings and large areas of hard standing. Some of these plots have areas of tipped material associated with them and around the margins vegetation is beginning to re-colonise. This is mostly ruderal species such as Rosebay *Chamerion angustifolium,* Bramble *Rubus fruticosus agg* and Ragwort *Senecio jacobaea.* It is in this area that **Giant Hogweed** *Heracleum mantegazzianum* was found and has been treated in recent years.

Roadside verges in this part support a more calcareous grassland with Bird's foot trefoil *Lotus corniculatus* , Common toadflax *Linaria vulgaris,* Yellow-wort *Blackstonia perfoliata,* Carline thistle *Carlina vulgaris,* Blue fleabane *Erigeron acer*, Great lettuce *Lactuca virosa,* Scentless mayweed *Tripleurospermum inodorum,* Lesser trefoil *Trifolium dubium*, Perennial wall-rocket *Diplotaxis tenuifolia*, Bramble *Rubus fruticosus agg* and White clover *Trifolium repens.*

Value of the habitat

None of the habitats within this area are of any local significance. The most diverse area is that around the balancing pond although a lot of the species in this area have been introduced.

Protected species

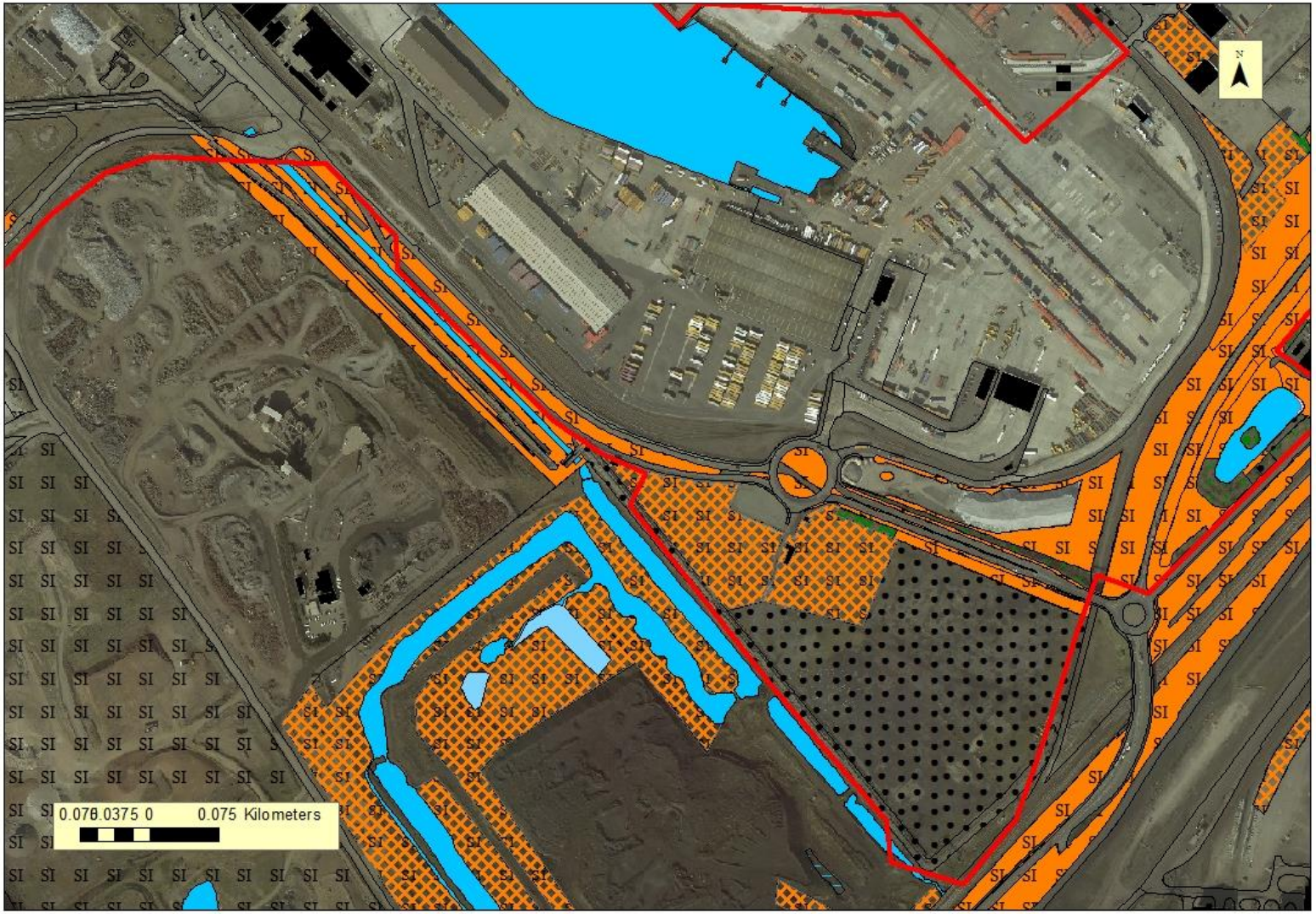
Most of the area is unsuitable for birds of the SPA.

Some bird nesting is likely to take place in the less disturbed areas of scrub and grassland though none of any significance were recorded during this or any other surveys.

The areas of tipped material adjacent to the hard standing in the west of the area have the potential to support common lizard though none have ever been recorded in the area. **Reptile survey recommended**

There are no buildings, structures or trees within the area likely to support roosting bats.

No signs of badger were seen during the survey.



Map 15 **Phase 1 survey map of Dock Approach and C & G Fuels area**

Dock Approach and C & G Fuels area

The majority of the C and G Fuels site has until recently been used for the storage of coal and coke. Historically it was a tank farm for oil fuel storage, the tanks have been removed but the hard standing remains over parts of the area. Only the roadside verges and a portion of the northern part of C and G Fuels support semi natural vegetation.

Photo 44

The southern part of the C and G Fuels site is almost entirely bare ground. Less disturbed areas have moss cover and some ruderal species are beginning to establish around the fence line and in places where material has been mounded up along an old fence line.

The northern part of the C and G Fuels site has a more established grassland with Bird's foot trefoil *Lotus corniculatus*, Bramble *Rubus fruticosus* agg, Black medick *Medicago lupulina*, Blue fleabane *Erigeron acer* ,Common toadflax *Linaria vulgaris*, Cock's foot *Dactylis glomerata*, Colt's foot *Tussilago farfara*, False oat grass *Arrhenatherum elatius*, Hawthorn *Crataegus monogyna*, Hare's foot clover *Trifolium arvense*, Kidney vetch *Anthyllis vulneraria*, Mouse ear hawkweed *Pilosella officinarum*, Mugwort *Artemisia vulgaris*, Oxford ragwort *Senecio squalidus*, Perennial wall-rocket *Diplotaxis tenuifolia*, Prickly sow-thistle *Sonchus asper*, Ribwort plaintain *Plantago lanceolata*, Ribbed melilot *Melilotus officinalis*, Rosebay willowherb *Chamerion angustifolium,* Scentless mayweed *Tripleurospermum inodorum*, Spear thistle *Cirsium vulgare*, Wild carrot *Daucus carota*, White melilot *Melilotus albus*, White stonecrop *Sedum album*, Yarrow *Achillea millefolium*, Yellow-wort *Blackstonia perfoliata* and Narrow leaved ragwort *Senecio inaequidens*.

The roadside verges leading to Teesport are regularly mown and, although they support a neutral grassland, few flowers are ever see other than Dandelion *Taraxacum officinalis,* White clover *Trifolium repens* and Lesser trefoil *Trifolium dubium.*

Photo 45

On the northern side of the C and G Site three tunnels pass under the road to the north. These tunnels are supported by pre-fabricated rings and the tunnels are open at both ends. A brief inspection suggests that they are unlikely to support roosting bats because of their open nature and the method of their construction.

Value of the habitat

None of the habitats within this area are of any local significance. The small area of calcareous grassland in the northern part of C and G Fuels is of poor quality and this habitat is better represented elsewhere.

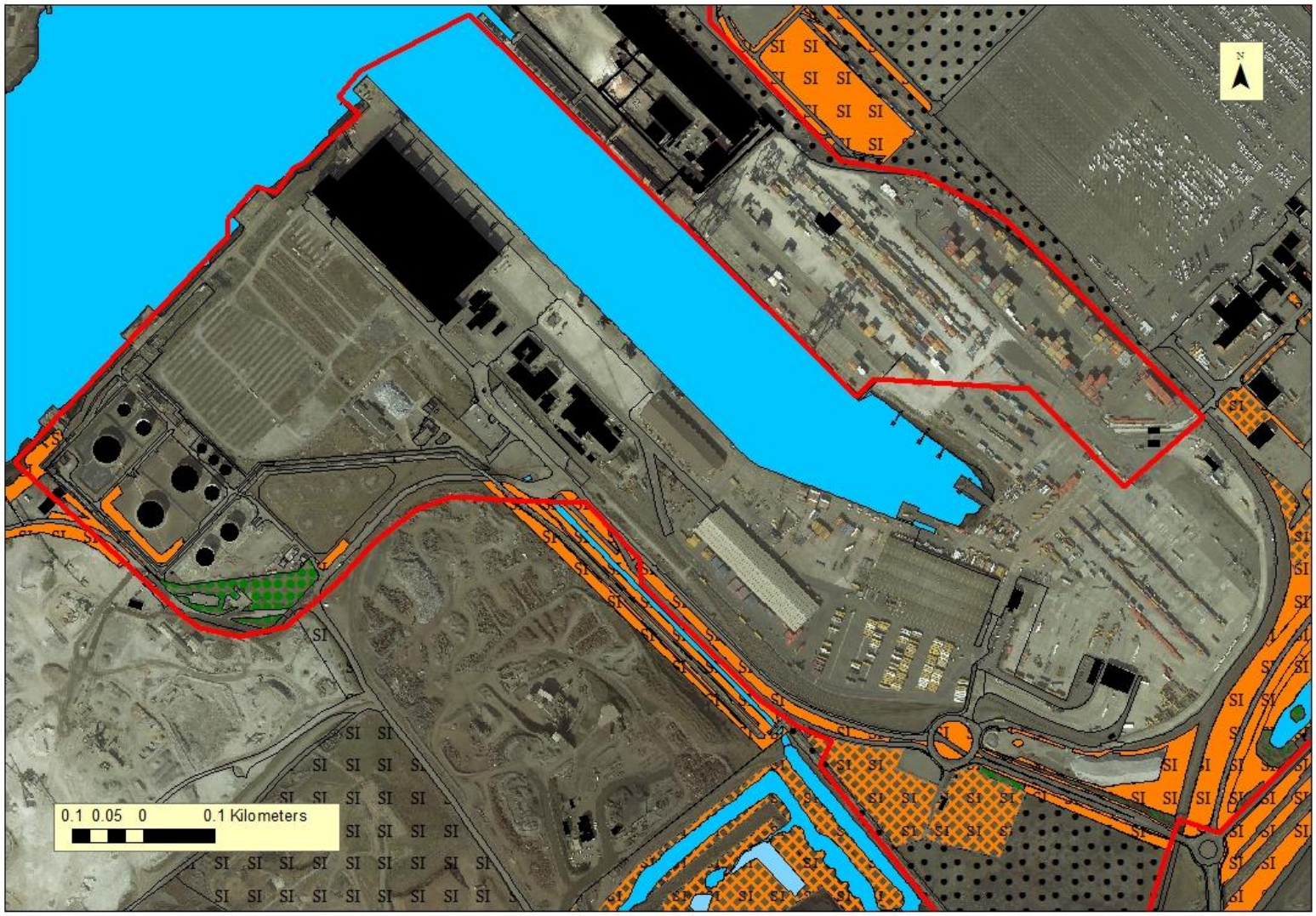
Protected species

The area is unsuitable for birds of the SPA.

It is possible that ground nesting birds could utilise the northern part of the C and G Site.

There are no buildings, structures or trees within the area likely to support roosting bats.

A badger survey was carried out on this site in May 2013 using a night vision, automatic camera and sand around entrance holes. No signs of badger were seen during four overnight sessions.



Map 16 **Phase 1 survey map of Tees Dock area**

Tees Dock area

The area around Tees Dock is almost entirely hard standing, mostly concrete, with no natural habitats. There is a small area of vegetation between the two RORO ramps on the eastern end of the dock which is rank grassland and scrub.

Photo 46

On the north side of the dock at the eastern end is a small section where there is some intertidal habitat developed on artificial substrate (riprap).

Value of the habitat

There are almost no natural habitats within this area and the small areas that are present are of no significance.

Protected species

The area is unsuitable for birds of the SPA.

The area is unsuitable for nesting birds and none have been recorded.

There is no habitat to support other protected species.

The buildings and structures within the area are mostly unsuitable for roosting bats.

There is no suitable habitat to support badger.

Map 17 **Phase 1 survey map of QEII Dock**

QEII Dock

The hinterland behind the QEII frontage divides into four areas. The majority of the area adjacent to the dock is bare ground and has been used for storage of steel products over many years.

Further from the river is a collection of derelict building and associated tipped material over which some regeneration of vegetation has taken place.

Outside the dock area is a tank farm part of which is still in use and managed by SABIC.

Part of the tank farm has recently been demolished and is re-vegetating.

Adjacent to the dock

Photo 47 **Steel storage area looking SE**

This extensive area is used for storage of steel products awaiting shipment and is frequently completely covered in stacks of steel girders with gravel tracks allowing access between the rows. The area is mostly bare gravel. In creating flat surfaces on which to store the products piles of material are bulldozed between the rows which had, at the time of survey, revegetated with ruderal species such as Coltsfoot *Tussilago farfara, Rosebay Chamerion angustifolium,* Ragwort *Senecio jacobea* and Charlock *Sinapis arvensis* and grasses Cocks-foot *Dactylis glomerata,* Creeping bent *Agrostis stolonifera,* and Common couch *Elytrigia repens.*

Derelict Buildings

Photo 48 **Derelict buildings and hard standing**

South east of the steel stacking area is a group of derelict buildings with concrete hard standing around them. Ruderal species are growing between the concrete slabs such as Charlock *Sinapis arvensis,* Rosebay *Chamerion angustifolium,* Ragwort *Senecio jacobea* and grasses Cocks-foot *Dactylis glomerata,* Creeping bent *Agrostis stolonifera* and Yorkshire fog *Holcus lanatus.*

Photo 49 **Jungle of bramble and elder behind derelict buildings**

Behind the buildings is a pile of bulldozed earth and debris which has become a jungle of Elder *Sambucus nigra,* Bramble *Rubus fruticosus agg.* and Stinging nettle *Urtica dioica.*

The SABIC tank farm to the south west is managed to prevent the spread of fire. The small areas of neutral semi-natural grassland that exist along the roadside in some parts are cut regularly and show little by way of phorbs other than Daisies *Bellis perenis* and Dandelion *Taraxacum officionale.* A number of tanks have recently been

removed from the north eastern part of the tank farm but the lands here is also being closely managed to prevent the regeneration of vegetation which would offer a fire hazard. Part if this area is relatively bare but other parts appear as mown grass with scattered trees of Rowan *Sorbus aucuparia,* Gorse *Ulex europeaus* and Sycamore *Acer pseudoplatanus.* Because of the risk of fire and explosion photography is not allowed in this area.

Value of the habitat

The majority of the area is greatly disturbed or highly managed and no natural habitats of local significance are present.

Protected species

The area is greatly disturbed and thereby unsuitable for birds of the SPA.

The area has some potential for ground nesting birds and the building and scrub could be used for nesting.

There is some potential for reptiles (common lizard) to be hibernating in the piles of debris on the eastern part of the site **Reptile survey recommended**.

The buildings and structures within the area are derelict and undisturbed and could be used by roosting bats although the habitats around is not particularly suitable. **Bat risk assessment and possible survey recommended**

There is no suitable habitat to support badger.

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A Scoping Report Relating to the Risk of Presence of Bats at Selected Sites in Teesport & Wilton

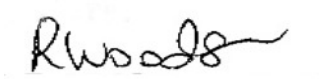
Robert Woods
February 2014

INCA
Industry Nature Conservation Association

This report has been produced for York Potash Ltd for the purpose of providing ecological advice.

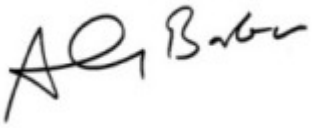
The report, and the data within it, belong to York Potash Ltd and is not to be used for any other purpose nor relied upon by any third party.

Report prepared for and on behalf of the Industry Nature Conservation Association by



Robert Woods
Ecologist
17th February 2014

Checked and approved by



Geoff Barber
Senior Ecologist
25th February 2014

Contents

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1. Introduction

York Potash Ltd have plans for a new Potash mine on the southern edge of the North York Moors National Park. As part of this project they require a materials handling facility, conveyor system and a new dock frontage to allow transport of the mined material by ship from Teesside. INCA have been contracted to carry out a number of ecological surveys relating to this proposal, which will be incorporated within an Environmental Impact Assessment by Royal Haskoning DHV on behalf of York Potash Ltd. This report assesses particular structures within the Wilton and Teesport sites on Teesside which may be part of this development in as yet unspecified ways. The specific focus here is the investigation of particular bridges and disused buildings in relation to their suitability for roosting bats. Given that this work was requested outside of the main period of activity for bats between May and August, it has only been possible to carry out a preliminary ecological appraisal involving investigation of the degree of risk relating to these structures in terms of the features and habitat present. Key parts of the study area as they relate to bats are shown in appendix 1. Closer views of the same areas are shown in appendices 1a and 1b.

The particular areas within which these structures are situated are shown in appendix 2, which denotes the terms used by INCA for these general locations, so as to be consistent with locational names used by INCA in the compilation of other survey reports relating to this potential development (*e.g*. for reptiles). For ease of viewing, colours are used to demarcate the different areas which are shown in appendix 2.

2. Legislative Context

All British bat species are fully protected through the Conservation of Habitats and Species Regulations 2010 as European Protected Species. They also receive some protection through inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Of the 18 British bat species only the following are currently thought to occur in the Tees Valley: Brandt's Bat *Myotis brandtii*, Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Daubenton's Bat *Myotis daubentonii*, Natterer's Bat *Myotis nattereri*, Nathusius' Pipistrelle *Pipistrellus*

nathusii, Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus* and Whiskered Bat *Myotis mystacinus.*

Under the legislation, it is an offence to deliberately capture, injure or kill a bat. It is also an offence to intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection; or obstruct access to any structure or place which it uses for that purpose. It is an offence to deliberately disturb any British bat species in such a way as to be likely significant to affect the ability of a significant group of this species to survive, breed, rear or nurture their young, or the local distribution or abundance of the species. It is also an offence to damage or destroy a breeding site or resting place of these species.

It is important to note that presence of protected species on site has the potential to stop the proposed activity until mitigation is agreed with Natural England.

3. Survey Methodology

The industrial corridor of Teesside does not have open public access and by virtue of this does not have copious amounts of data relating to bats, much of what is available has been generated by INCA. By way of a desk study, in addition to the INCA data, the Environmental Records Information Centre North East (ERIC) was consulted for bat data within a 6km radius of Wilton and Teesport from a central point focused at NZ560225.

As regards site visits, the purpose of such visits was to carry out an inspection of the key locations shown in appendix 1 for features likely to support bats and to search for bats or signs of bats (droppings, feeding remains, staining), where appropriate. The key locations were selected by INCA as being those which might have the highest risk of presence of bats given the available information relating to the potential locations for the processing, conveyor and port facility mentioned earlier.

The surveyors carrying out field surveys were Robert Woods and Geoff Barber, both of INCA. Both are experienced ecologists and the former is permitted to survey bats of all species under Level 2 Class licence WML-CL18, issued by Natural England.

Inspection of buildings and bridges involved conducting surveys in good light, using close-focusing binoculars and a powerful (million candlepower) Clulite torch where appropriate.

Given the large number of potential roost sites for crevice-dwelling bats in the bridges indicated in appendix 1 it would be appropriate to first carry out activity surveys during the season of bat activity to focus further searches for possible roosting bats. As the survey work requested was outside of the normal accepted season of bat activity, it was not viewed as appropriate to carry out such work, so detailed close physical inspection of any of the bridges during this preliminary ecological appraisal was not carried out. Torchlight surveys were more to identify the potential of each bridge to support roosting bats and to identify if further detailed survey work would be required.

It was possible to enter buildings that were initially identified as having potential for roosting bats. With respect to building and habitat assessment this used guidelines provided within Mitchell-Jones & McLeish, 2004.

A risk assessment relating to the possibility of species which have statutory protection under UK and European legislation being present is discussed within this report. Although the preliminary ecological appraisal involves two nocturnal visits to specific areas of each site it is well understood by both ecologists carrying out this study that any such work falls outside the normal accepted survey period for bat activity (May to August). It was felt by the surveyors that warm, frost-free weather throughout September and early October was conducive to observing any late season bat activity on the sites, the potential for which was investigated on the dates indicated in the results section by the two named surveyors using hand held Batbox Duet detectors. The survey locations were attended from 30 minutes before sunset to at least 90 minutes after.

Any results of nocturnal survey are placed into the aforementioned context and serve only to inform the risk assessment not to form any definitive conclusions about bat use of a particular part of the study area. This is especially important to bear in mind as bat activity in the late season may not reflect bat activity on these sites within the

main season of activity, due to changing use of sites which bats show in different seasons. This is discussed later.

4. Results

4.1. Background

Preliminary ecological appraisals of the subject sites to identify possible ecological issues took place on the 11th September 2013 (daylight external buildings inspection & habitat walkover), 24th September 2013 (nocturnal visit to bridges), 8th October 2013 (nocturnal visit to Teesport buildings), 16th October 2013 (internal inspection of Teesport buildings) and 2nd December 2013 (external inspection of buildings at Bran Sands lagoon).

4.2. Desk Study

The INCA data all relate to observations of foraging Common Pipistrelle *Pipistrellus pipistrellus* in a number of locations within the Wilton Site and a single location near Teesport. There has been no evidence as yet of roosting bats within the Wilton or Teesport industrial complexes. The available INCA data (figure 1) include:

Species	Location	Date	Result
Common Pipistrelle	Eastern part of Wilton site, at NZ583219	27/7/2010	A single bat seen around 45 minutes after sunset
Common Pipistrelle	Kettle Beck, Wilton site, NZ560207	21/7/2010 & 23/8/2010	Occasional foraging 1 hour after sunset on both days
Common Pipistrelle	Central part of Wilton site, at NZ573212	26/7/2011 & 4/8/2011	Foraging activity of up to 3 bats on 26/7 & 1 on 4/8
Common Pipistrelle	Eston Pumping Station, NZ565237	27/7/2011	Several bats foraging around 30 minutes after sunset
Unidentified bats	Wilton Ecology Pond, NZ571237	14/5/2013	Several bats seen 1 hour after sunset while conducting aquatic surveys

Figure 1 – INCA data for bats recorded at Teesport and on the Wilton site

The ERIC North East database provided records of bat activity within a 6km radius of a central point focused at NZ560225 in the Lackenby area. These data are shown in appendix 4. There are no records of bats from the study areas within the data supplied to INCA in October 2013.

The nearest records of bats are of a Common Pipistrelle *Pipistrellus pipistrellus* roost at Wilton Village (NZ584198) in July 2011, which is 4km south-east of the closest study site and is within an area of mixed deciduous woodland; and a roost of Soprano Pipistrelle *Pipistrellus pygmaeus* of undisclosed size from the Kirkleatham area of Redcar (NZ595218) in July 2010, which is 3km south-east of the nearest study site and within an area of wooded parkland. In terms of other genera, the nearest records of any *Myotis* species are of singleton Daubenton's Bat *Myotis daubentonii* in the Eston Moor area (NZ563170) in an area of partially wooded heathland 6km south of the nearest study area, observed on 26th May and 26th June 2010 and of two or more Noctule *Nyctalus noctula* at Southbank (NZ542185) 5km south of the nearest study site (2005). The data were not specific but in view of the heavily urbanised location where the Noctule were seen they are likely to have been records of bats in flight. For Brown Long-eared Bat *Plecotus auritus* the nearest known observation is of a roost of 20+ bats at Normanby Hall (NZ541177) in 2007, which is 5.5km south of the nearest study site and situated close to Flatt's Lane Woodland Park. Natterer's Bat *Myotis nattereri* was reported from Normanby Hall in 2006.

4.3. Habitat assessment

A preliminary ecological appraisal, which is part of the extended Phase 1 habitat survey of the subject sites, took place at 13.00 on the 11th September 2013. The purpose of this was to identify the habitat suitability for foraging bats. The weather was cloudy, but with good light and clear visibility, still and with an air temperature of 15°C.

The principle habitat within the surrounding area of buildings 1 and 2 (part of the 'Wilton and Papermill' site – see appendix 2) is species-poor improved grassland with a tall, closed sward as shown in photo 1. In areas where buildings have been demolished at some stage in the past, concrete or brick-rich rubble exists, such as

shown in the foreground of photo 2. These areas are generally low in nutrients, supporting ruderal plants such as Rosebay Willowherb *Chamerion angustifolium* and Common Ragwort *Senecio jacobaea*, with the occasional isolated bush of Goat Willow *Salix caprea* or Hawthorn *Crataegus monogyna*.

Within the area is a pond (photo 3; see appendix 1a for location), which is heavily encroached with Bulrush *Typha latifolia* and Common Reed *Phragmites australis*. This location does have foraging potential for bats but no potential roosting sites. Bat activity surveys over the 'Papermill site' on 1st and 28th June 2011 included this pond. Surveys found no bats of any species, in weather conditions which were suitable for bat activity (Barber, 2011).

Photo1:
Habitat adjacent to building 1

Photo 2:
Grassland and hard-standing

Photo 3: 'Papermill site' waterbody

The habitat within the area of bridges 1 to 5 (the 'Breagh laydown and area between railways' – see figure 2) has been heavily altered as it is within an operational pipe-corridor.

Within the main part of the area the habitat consists of improved grassland with a tall, closed sward and an occasional scrub element comprising Bramble *Rubus fruticosus* and Hawthorn (photo 4). There is, however, a large water body (photo 5) situated between bridges 2 and 3. This is Wilton Ecology Pond, a habitat creation project which was undertaken by ICI in the 1980s. The pond is extensively fringed by Common Reed and Hawthorn. It has matured well since the 1980s and although the adjacent pipe corridor represents poor foraging habitat this pond and its immediate surroundings present excellent foraging opportunity. Bats were seen foraging over this water body during the early part of 2013 (see section 4.2), but there are no potential roosting sites within the boundary of the Wilton Ecology Pond.

Photo 4: Pipe corridor grassland

Photo 5: Wilton 'Ecology Pond'

An area of land within the Teesport site was surveyed, which is the location for buildings 3 to 11, in an area termed the 'QEII dock' (see appendix 2). Views of the habitat in this area are shown in photographs 6 and 7.

Much of the open habitat comprises hard compacted 'made ground' which has been used for lay down activity in the recent past. There are also areas of improved grassland which has low species diversity, often with competitive ruderal species such as Rosebay Willowherb. The quality of the foraging habitat available here is unremarkable and there are no potential roosting sites present within this area of

improved grassland and ‘made ground’. Adjacent buildings are considered separately (see section 4.4).


Photo 6 & 7: Teesport QEII Site

The last of the surveyed areas is Bran Sands lagoon. This large water body is saline and is very exposed to (north-) easterly winds. The habitat surrounding the lagoon consists of rank grassland and industrial plant, providing some foraging opportunity for bats. The only potential bat roosting sites here are considered in section 4.4 under ‘industrial plant at Bran Sands lagoon’.

Photo 8: Bran Sands lagoon

4.4. Structures assessment

The bridges and external parts of the buildings identified within figure 1 were surveyed as part of the field survey which took place on the 11th September 2013, while an internal building inspection (not including bridges) took place on the 16th October 2013 (Teesport only). The basis of these surveys was to assess the bat

roost potential of the structures assessed. For buildings this was informed by the 'Bat Survey Good Practice Guidelines' (Hundt, 2012) and the Bat Workers Manual (Mitchell-Jones & McLeish, 2004). In this respect criteria which increase the possibility of roosting bats being present are:

- Building disused or undisturbed
- Roof spaces present
- Wall cavities present
- Uneven roof with spaces
- Other spaces for bats to enter (via cladding, holes. fascia, tiles, etc)
- Proximity to potential feeding area

Bats are known to use bridges at almost any time of year (Hundt, 2012), particularly those that are close to good foraging habitat (Billington & Norman, 1997). Key features of bridges which can be used by roosting bats (Hundt, 2012), for whatever purpose, include those listed subsequently:

- Widening joints & Expansion joints
- Gaps at buttress corners
- Widening gaps where the bridge width has been increased
- Cracks and crevices between stonework and brickwork (over 100mm deep)
- Drainage pipes and ducts
- Internal voids in box girder bridges

The bridges surveyed were checked using the methodology described in section 3 for these features. Several other criteria for bridge assessment were added in addition to the above:

- Proximity to potential feeding area
- Purpose of bridge and assumed level of activity

4.4.1. Bridges

Bridges 1, 2, 3 and 5 are of slab and girder beam design, being constructed from reinforced concrete and steel girders. Bridge 4 is has solid concrete beams and supports.

Bridge 1

The deck of this bridge supports a dual carriageway section of the A1085 Middlesbrough to Redcar trunk road and is in heavy use. Numerous gaps between concrete sections and between concrete sections and the support beams on the superstructure provide potential roosting opportunity for small bats.

There were no signs of bats evident during the visit (droppings, feeding remains, smear marks, etc), but the bridge is fairly close to good foraging habitat, being 175m from Wilton Ecology Pond. This bridge has heavy use by traffic, with associated vibrational disturbance which would not be attractive to bats. It has, however, proximity to good foraging habitat, bats have been observed in this general location (see section 4.5) and the bridge itself has many gaps which provide opportunity for roosting crevice-dwelling bats. All of these factors provide a low to medium risk of roosting bats being present.

Photo 9: Bridge 1

Photo 10: Bridge 1 superstructure

Bridge 2

This is in regular active use as a railway line and is used by the adjacent steelworks at Redcar to transport steel products. Gaps where steel beams meet the concrete piers on the bridge superstructure are of a sufficient size for smaller bats such as Pipistrelles to use.

No signs of bats were evident during the survey but the bridge is within 50 metres of good foraging habitat at the Wilton Ecology Pond. This bridge has heavy use by traffic, with associated vibrational disturbance which would not be attractive to bats. It has, however, proximity to good foraging habitat, bats have been observed in this general location (see section 4.5) and the bridge itself has many gaps which provide opportunity for roosting crevice-dwelling bats. All of these factors provide a low to medium risk of roosting bats being present.

Photo 11: Bridge 2

Photo 12: Bridge 2 superstructure

Bridge 3

This is an internal site road bridge, connecting the Lackenby and Redcar steelworks sites and has regular vehicular use. It has a fairly open, exposed structure, but once again there are narrow gaps within the superstructure which could be opportunistically used by small bats. There were no signs of bats during the visit. This bridge has some use by traffic, with associated vibrational disturbance which would not be attractive to bats. Once again, it has proximity to good foraging habitat, bats have been observed in this general location (see section 4.5) and the bridge itself has many gaps which provide opportunity for roosting crevice-dwelling bats. All of these factors provide a low to medium risk of roosting bats being present.

Photo 13: Bridge 3

Photo 14: Bridge 3 superstructure

Bridge 4

The deck of this bridge supports a rail connection between the steelworks and the surrounding hinterland. Much of the superstructure appears to comprise concrete supporting slabs with small gaps between slabs. The south abutment comprises partly of brickwork (photos 17 & 18) and gaps in this brick structure provide roosting opportunity, possibly for medium-sized bats such as Daubenton's Bat, which could use structures such as this in season, particularly due to the proximity of the Wilton Ecology Pond, 350m to the east. There were no signs of bats during the visit. This bridge has regular use by rail traffic, with associated vibrational disturbance which would not be attractive to bats. It has, however, proximity to good foraging habitat, bats have been observed in this general location (see section 4.5) and the bridge itself has many gaps which provide opportunity for roosting crevice-dwelling bats. These factors suggest a low to medium risk of roosting bats being present.

Photo 15: Bridge 4

Photo 16: Bridge 4 superstructure

Photo 17: Bridge 4 abutment

Photo 18: Abutment close-up

Bridge 5

This is the access road bridge to Northumbrian Water's Bran Sands Treatment Works. Although fairly exposed in nature, the superstructure has a number of narrow concrete beams, gaps between each providing possible roosting potential for small bats. This bridge is immediately adjacent to Dabholme Beck, a linear watercourse accommodating the outflow from this treatment works, and providing reasonable foraging opportunity for bats. This bridge has regular use by traffic, with associated vibrational disturbance which would not be attractive to bats. The proximity of this bridge to good foraging habitat, the fact that bats have been observed in this general location (see section 4.5) and that the bridge itself has many gaps which provide opportunity for roosting crevice-dwelling bats present a low to medium risk of roosting bats being present.

Photo 19: Bridge 5

Photo 20: Bridge 5 superstructure

4.4.2. Buildings

A total of 11 buildings and a small industrial plant, all shown in figure 1, were inspected both externally and internally (except where indicated otherwise) and were assessed in relation to their potential to be able to support roosting bats. These are the structures in areas which are subject to potential development, as advised by the client. In this respect, buildings 1 and 2 are situated on the Wilton site ('Papermill site') and buildings 3 to 11 are situated on the PD Teesport facility (the 'QEII dock'), with remainder situated on the south-western shore of Bran Sands lagoon.

Building 1

An isolated, disused building which is situated within an area of dense, species-poor grassland on the Wilton site. The building is fabricated from single-skinned corrugated steel sheeting and has a number of corrugated plastic skylights. There are no roof cavities. The building is unsuitable for roosting bats and the potential for them using this structure is very low.

Photo 21: Building 1 external view

Photo 22: Building 2 internal view

There were no signs of bats having used the building during the preliminary ecological appraisal but there were copious amounts pigeon guano, suggesting regular past use of the structure by feral pigeons. Furthermore, bat activity survey previously carried out in the 'Papermill site' on 1st and 28th June 2011, which included an emergence survey of this building, found no bats of any species in weather conditions which were suitable for bat activity (Barber, 2011).

Building 2

A disused building situated within an area of mown grassland. The surrounding grassland habitat is similar to that in which building 1 is situated. Building 2 is of brick construction with a flat roof. It was not possible to gain access to inspect the building because of a wooden bar nailed across the access door (photo 25). It is not clear, therefore, if the wall has a cavity. Soffit-boarding on the southern side of the building has decayed (photo 26) and is a potential access point for bats.

The preliminary ecological appraisal of 11th September 2013 found that there were no signs of bats having entered any part of this structure. Furthermore, a bat activity survey in the area of buildings 1 & 2 on 1st and 28th June 2011 found no bats of any species, in weather conditions which were suitable for bat activity (Barber, 2011). This and surveys of the adjacent parts of the Wilton site in 2010 and 2011, where a small number of commuting and foraging Common Pipistrelle were noted (see section 4.2), suggests low bat activity over the Wilton site, which would be consistent with the generally poor nature of the foraging habitat present.

While bat use of building 2 cannot be ruled out based on this visit, the risk of bats using this building is very low.

Photo 23: Building 2

Photo 24: Building 2 close-up view

Photo 25: Building 2 front view

Photo 26: Decaying soffit-board

Building 3

Situated on the Teesport dock frontage, this is a small brick-constructed building, without a wall cavity. It has a flat concrete roof, is in a good state of repair and is in current use as a store for the PD Ports 'Emergency Oil Spill Kit' (photo 28). Internal inspection showed no signs of bats. The sparsely vegetated laydown area in which this building is situated provides poor foraging opportunity. This combination of factors renders the building a very low risk for presence of bats.

Photo 27: Building 3 view

Photo 28: Building interior

Building 4

Situated in the same general location as building 4, it is of a similar construction. This building is also in current use, this time as the 'QEII Jetty Switchroom'. It was not possible to gain access because of the operational electrical equipment based here. In view of the design and situation of the building it is also viewed as a very low risk for presence of bats.

Photo 29: Building 4 view

Building 5

Photo 30: Building 5 view

Photo 31: Wall cavity visible

Situated on the southern side of the laydown area (appendix 1), this is another operational building (the No.14 substation), which it was not possible to enter. The building is of brick construction with a flat concrete roof, as before, but there is clear evidence of a wall cavity where brickwork is missing around a ground level air brick (photo 31). This photograph shows that rabbits have entered into the structure of the building by way of this route, as rabbit-droppings can be clearly seen below the air-

brick. In addition to possible entry for bats via this location, there is a gap in another air brick (photo 32), which probably held cabling at some stage in the past. There were no signs of bats using either location, and the habitat immediately adjacent (photo 33) would seem to provide limited foraging opportunity. This building is assessed as having a low risk of use by bats.

Photo 32: View of cut section airbrick

Photo 33: Habitat adjacent to building 5

Building 6

Close to building 5, this is another brick building without cavity, which has a flat concrete roof. There were no obvious crevices which might be suitable for bats, nor signs of bats. The building is considered as presenting a very low risk for presence of bats.

Photo 34: External view

Photo 35: Internal view

Building 7

This is a large, open, airy structure with a flat roof and sloping sheet metal components with significant areas of skylighting. The building is brick-built and the external walls appear to have a cavity but there is no roof space. A small flat-roofed annex (denoted by the red circle marked in photo 36) was also inspected. Possible access points into the wall of this structure can be seen in photo 38 but the internal view shows no crevices or cavities. The whole of building 7 was walked and there was no evidence of bat ingress into the structure. One mouse dropping was found in a corner and containers, which had previously contained rodenticide, were found in various corners within the building.

Photo 36: External view

Photo 37: Internal view

Photo 38: Annex external wall

Photo 39: Annex internal view

The building is situated within a small area of species poor grassland and scrub and although providing some opportunity for ingress of bats it is considered to have a low potential for use by bats.

Building 8

This small toilet and shower block building is in a very poor state of repair. The structure is again of brick build, possibly with a wall cavity and has a flat concrete roof.

There is possibility for ingress into the wall cavity (photo 41) and into the building (photo 43). Internally, however, there was no evidence of bats using the structure. The building is situated within a small area of species poor grassland and scrub and although providing some opportunity for ingress of bats it is considered to have a low potential for use by bats.

Photo 40: View of building

Photo 41: Damage to wall & roof

Photo 42: Internal view of building

Photo 43: Window with missing pane

Building 9

This is a brick-built two-storey office block with a solid concrete roof. There appear to be two brick courses on the external wall, with no cavity. Both ground and first floors have a suspended ceiling and the building is in a poor state. Broken windows and open windows provide easy internal access. Searching of the building found no evidence of bats. The only feeding sign was the wing of a Peacock butterfly *Inachis io* (photo 48), found on the first floor corridor. A small number of these butterflies were found alive in winter diapause with another species, the Small Tortoiseshell *Aglais urticae* in a small basement cellar within the building (photo 49). It is likely that the predated individual was in hibernation and was most likely to have been eaten while in diapause, probably by a rodent or bird. Indeed there was an old Barn Swallow *Hirundo rustica* nest in a downstairs room, so it is clear that birds do access the building. There were numbers of dead moths on windows sills, as there is ready access to the building from the surrounding environment, but all had died intact apart from a few which had been trapped in webs and eaten by their occupants.

Photo 44: View of building

Photo 45: View of building 7 & 9

Photo 46: Building 9 ground floor

Photo 47: Building 9 first floor

Photo 48: Peacock butterfly wing

Photo 49: Small cellar

The small cellar shown in photo 49 was also searched for signs of bats, but none were found. On the basis of the size of the structure and the range of possible roosting locations and the habitat in which it is situated this building was assessed as having a low to medium potential for use by bats.

Building 10

This is a single-skinned brick built structure, with a flat concrete roof (part) and sloping corrugated metal roof with sky lights (part). There is no roof cavity. The building is open at both ends and is a wet, airy structure with no features which would prove attractive to bats. There were no signs of bats evident and the potential for use by bats is very low.

Photo 50: External view

Photo 51: Internal view

Building 11

This is a small brick built structure without a wall cavity. It has a flat, solid concrete roof and internally has no obvious cavities. There was no evidence of bats using the building and the potential use by them is assessed to be very low.

Photo 52: Internal view

Photo 53: Second internal view

Industrial plant at Bran Sands lagoon

This comprises of a small number of currently operating structures. The steel storage tanks and building shown in photos 54 and 55 constitute the Northumbrian Water Ltd sludge holding plant. The storage tanks and associated pipework are of steel construction, while the building is of corrugated sheet-metal construction with a sloping sheet-metal roof. None of these structures constitute desirable roosting locations for bats.

Photo 54: Sludge holding tanks

Photo 55: Sheet-lined building

The remaining structure within this small complex of buildings is owned by Sembcorp and is titled the 'No.2 tunnel head house'. It is an operational building of brick construction with a flat concrete roof (photo 56). The building is tightly constructed with few possible ingress points for bats. It is unclear if it has a wall cavity but this is unlikely in view of its function. A ventilation louvre presents possible access but this is not thought to be likely because large fans which run continuously are situated immediately behind the louvres. They were also noted to be very loud during the visit, something which would not be very attractive to bats.

Photo 56: No.2 tunnel head house

Photo 57: Close up of ventilation panel

In view of their design and situation, none of the structures at Bran Sands lagoon were internally inspected during the visit and are assessed as having a very low potential for use by bats.

4.5. Nocturnal survey

The two dusk emergence surveys detailed in this section took place on 24th September 2013 and 8th October 2013 during unseasonably mild weather and up to a point where no frosts had been recorded locally.

The first of these surveys (24th September) was carried in the location of bridges 2 and 3 (appendix 1a) while the second (8th October) was carried out in the location of buildings 7 and 8 at Teesport (appendix 1b). The September/October period is within the season where bats would be either in their mating roosts, or be seeking / using their winter hibernation roosts.

Any information gleaned from nocturnal survey serves only to inform the risk assessment and should in no way to be viewed otherwise.

The first dusk emergence survey, of 24th September 2013 took place from 18.00 to 20.30 (sunset was at 19.00). The weather was dry, cloudy, with a 5mph SE wind and a temperature of 14°C throughout the survey. This visit was to make an initial assessment of use of the bridges by bats. Bridges 2 & 3 were chosen for this indicative assessment as they are closest to the varied feeding habitat provided by Wilton ecology pond, consisting of a large pond fringed by reeds and bramble / hawthorn scrub, and possess cavities which may be used by roosting bats. Thus, one ecologist was situated at bridge 2 and one at bridge 3, each using a hand held bat detector. In terms of these bridges there was activity from a single Common Pipistrelle around the north-eastern abutment of bridge 3 (appendix 3). This activity, detected at 45kHz, started at 19.00 (sunset) and continued with regular feeding buzzes noted until 20.00. Activity at bridge 2 was a little later, when a single Common Pipistrelle pass was noted at 19.15. A further ten passes were noted up until the survey finished at 20.30.

The second dusk emergence survey took place on 8th October 2013 from 17.50 to 20.00 (sunset was at 18.24). On this occasion it was dry with partial cloud, a light W wind and a temperature of 15°C which had dropped to 13°C by the end of the survey. This visit was to assess any activity by bats using the complex of buildings in the described area at Teesport. Two strategically located ecologists carried out the assessment, both using hand held bat detectors; one situated immediately north of building 8 and the other immediately west of building 7. There was no activity around the Teesport buildings, despite weather which was conducive for foraging activity. The weather suitability was supported by detection of foraging Common Pipistrelle in other locations while returning home from the survey. In this respect, one ecologist noted frequent foraging behaviour by Common Pipistrelle between 20.10 and 20.20 south of Wilton Woods (NZ599179), which is 8.7km south-east of the survey area; while the other noted similar activity from the same species at 20.20 adjacent to Wynyard Forest (NZ403285), 15km north-west of the survey site.

There is no anecdotal evidence of bats having used the area of buildings 3 to 11, as PD Ports' staff, who allowed entry to most of the buildings surveyed in September

2013, reported that they had never seen bats using this area, which is significant as they were used to visiting the site during the hours of darkness, including times when emerging or returning bats might be expected to be routinely seen if they were a normal feature of the buildings' use.

5. Conclusions

Bridges

On the basis of factors considered each of the five bridges has a low to medium potential for roosting bats, particularly Pipistrelles, at most times of the year. In the season of bat activity, it can be envisaged that these structures could at least be used by small numbers of bats particularly as a night roost after foraging activity has been completed. In the event that bats are found to be roosting, the risk of harm also depends very much upon the nature of the conveyer system, the construction methods used and how the conveyor will directly impact upon the bridges.

It is important to note that these bridges are already subject to noise disturbance at all hours of the day, given their purpose and frequency of use. Currently the underside of the bridges are not illuminated. Installation of lighting would potentially cause disturbance to any roosting bats and would require careful consideration.

Buildings

Figure 2 summarises the assessments which have been made in relation to each building and their risk of presence of bats. Buildings within the 'QEII site' have been assessed and as a result of a combination of their design and the quality of the habitat in which they are situated, all but one are considered at most to be at a low risk of bats being present. The largest structure (building 9) presents a slightly higher risk (low to medium) due to its complexity and the range of possible roosting opportunities. Bat use of the Wilton 'Papermill site' has been previously assessed, as detailed earlier. A number of bat activity surveys have been carried out across the Wilton site in recent years and these have also been detailed earlier. These indicate a low level of bat activity of commuting and foraging Common Pipistrelle. Structures which were assessed at Bran Sands lagoon have ongoing use and it is

unclear whether they would ever be demolished. In any event they have been considered as presenting a very low risk of being used by bats.

Building number	Location	Risk status for presence of bats
1	Wilton 'Papermill site'	Very low
2	Wilton 'Papermill site'	Very low
3	Teesport 'QEII site'	Very low
4	Teesport 'QEII site'	Very low
5	Teesport 'QEII site'	Low
6	Teesport 'QEII site'	Very low
7	Teesport 'QEII site'	Low
8	Teesport 'QEII site'	Low
9	Teesport 'QEII site'	Low to medium
10	Teesport 'QEII site'	Very low
11	Teesport 'QEII site'	Very low
n/a	Industrial plant at Bran Sands lagoon	Very low

Figure 2 – Summary of buildings and their risk status in relation to bats

6. Recommendations

Ultimately the nature of existing use of the bridges by bats could only be further determined by carrying out bat activity surveys. In view of the low to medium roost potential assessed for each of the bridges, it would be recommended that each bridge be subject to one dusk emergence survey and one pre-dawn re-entry survey within the optimum period of May to August period.

In view of the fact that the structures on the 'QEII site' would be demolished it is strongly advised that bat activity survey of buildings 5, 7, 8 and 9 be carried out in the period May to August to appropriately assess bat use in order to further inform the situation. As building 9 has been assessed to have a low to medium roost potential it would be recommended that it be subject to one dusk emergence survey and one pre-dawn re-entry survey, while buildings 5, 7 and 8, assessed as having

low roost potential will require one such survey, either as dusk emergence survey or a pre-dawn re-entry survey. All other assessed buildings within the QEII site are assessed as having very low roost potential and it is not suggested that these are further surveyed.

Buildings on the 'Papermill site' and at the Bran Sands lagoon site have been assessed to have a very low roost potential, so no further surveys are recommended in these areas.

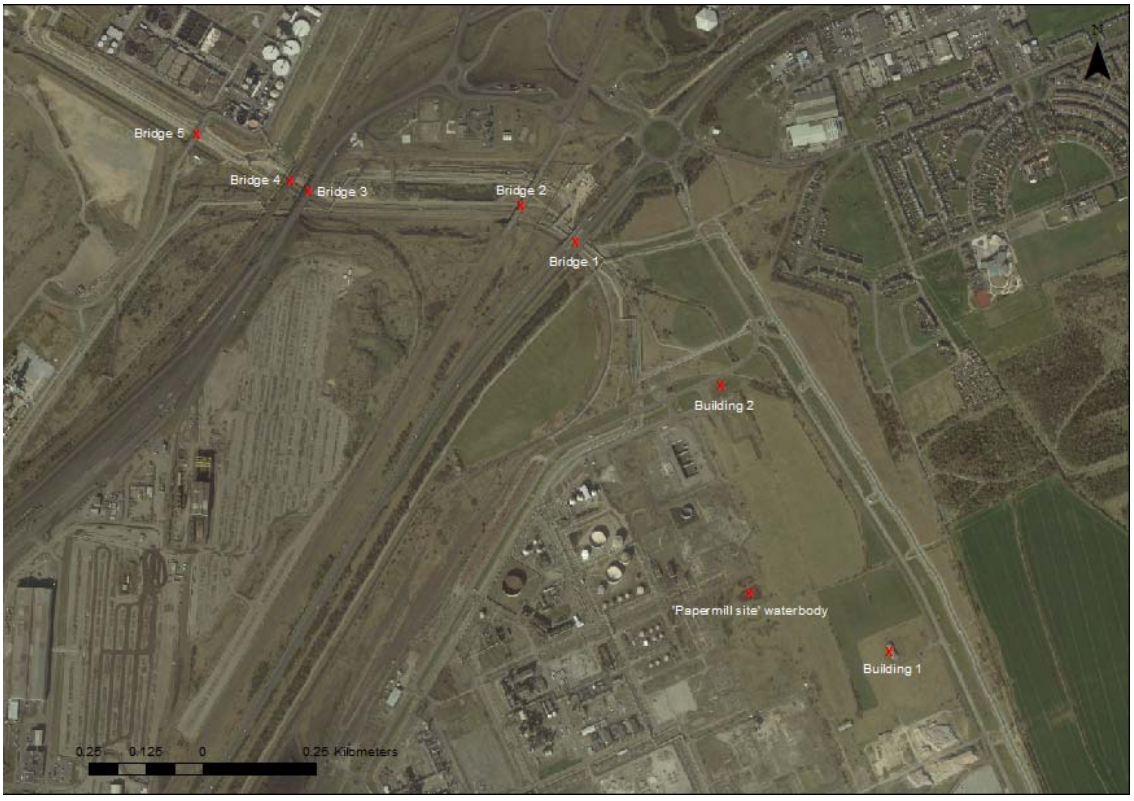
It is important to note that if bats were found during demolition, work must stop and an appropriately qualified ecologist should be contacted immediately.

7. References

- Barber. G., 2011, *Bat Report, September 2011.* A report produced for RSK.
- Billington. G.E., and Norman. G.M., 1997, *The Conservation of Bats in Bridges Project: a Report on the Survey and Conservation of Bat Roosts in bridges in Cumbria*. English Nature, UK.
- Hundt.L., 2012, *Bat Surveys: Good Practice Guidelines*, *2nd Edition*. Bat Conservation Trust.
- Mitchell-Jones. A.J., and McLeish. A.P. (Ed.), 2004, *Bat Workers' Manual (3rd Edition*), JNCC. London.

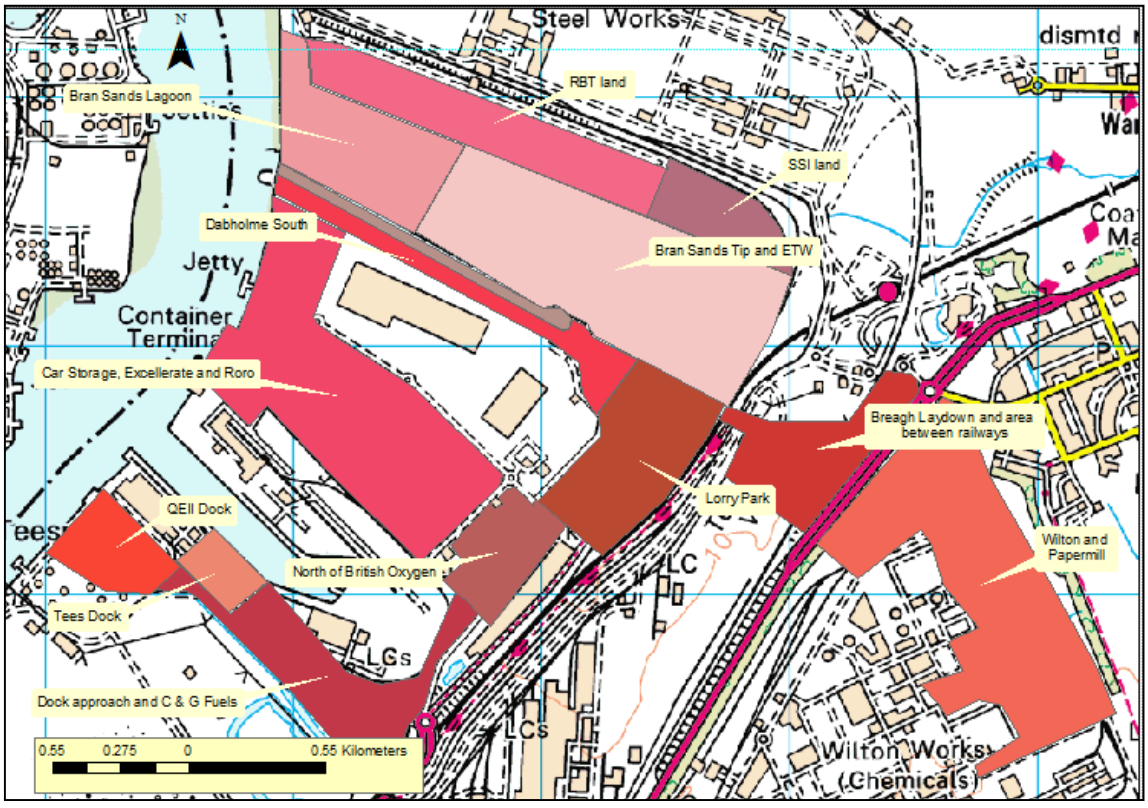
Appendix 1 – Location of structures assessed

Appendix 1a

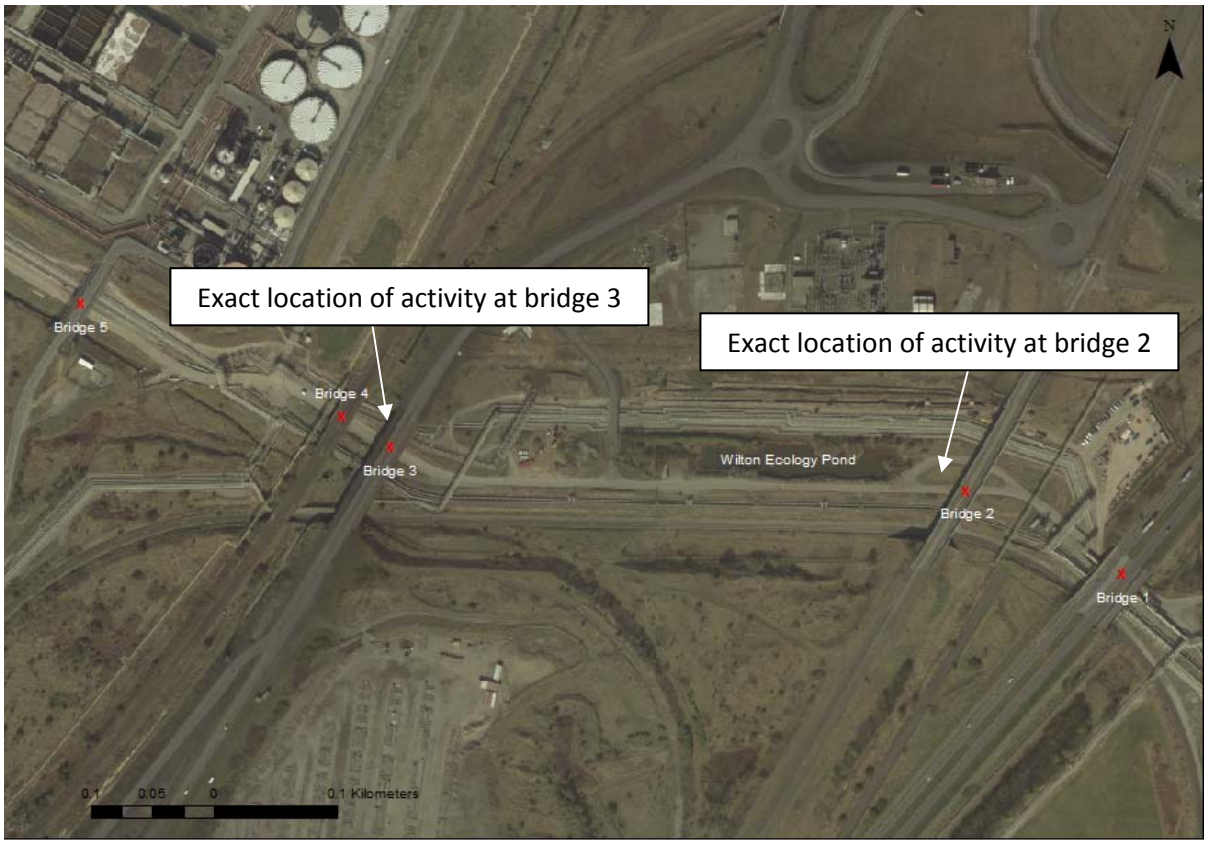


Appendix 1b

Appendix 2 – Locational names and their geographical situation



Appendix 3 – Location of bat activity in bridges area



Appendix 4 – ERIC Bat Records

Species	Location	Grid reference	Date	Count	Observer
Myotis sp.	Ormesby Hall	NZ528168	11/09/2009	1	Dave Thew
Myotis daubentonii	Eston Pond	NZ563170	26/05/2010	1	Rachel Jackson
Myotis daubentonii	Eston Pond	NZ563170	26/06/2010	1	Rachel Jackson
Myotis nattereri	Normanby Hall	NZ5417	2006	4	Durham Bat Group
Nyctalus sp.		NZ5923	12/07/2009	7	Undisclosed
Nyctalus noctula	Ormesby Hall	NZ528168	24/06/2009	4	Dave Thew
Nyctalus noctula	High Farm	NZ535194	09/06/2008	Heard	E3 Ecology
Nyctalus noctula	South Bank	NZ542185	2005	2+	Durham Bat Group
Nyctalus noctula	Normanby, Middlesbrough	NZ539179	2012	Commuting	Barry Anderson
Pipistrellus sp.	Church Lane, Eston	NZ51P	10/07/2009	1 grounded	Graham Jeffrey
Pipistrellus sp.		NZ5923	21/07/2009	2	Undisclosed
Pipistrellus nathusii	Ormesby Hall	NZ528170	24/06/2009	1	Dave Thew
Pipistrellus pipistrellus	Hutton Road, Middlesbrough	NZ505189	05/09/2007	2	Naturally Wild
Pipistrellus pipistrellus	Redcar Health Centre	NZ600250	08/10/2009	In flight	EcoSurv
Pipistrellus pipistrellus	Ormesby Hall	NZ528168	11/09/2009	2	Dave Thew
Pipistrellus pipistrellus	Ormesby Hall	NZ528169	24/06/2009		Dave Thew
Pipistrellus pipistrellus	Cleveland	NZ584198	07/07/2011	17 (roost)	Licensed Bat Worker
Pipistrellus pipistrellus		NZ5923	12/07/2009	8	Undisclosed
Pipistrellus pipistrellus		NZ5923	21/07/2009	4	Undisclosed
Pipistrellus pipistrellus	High Farm	NZ535194	09/06/2008		E3 Ecology
Pipistrellus pipistrellus	Mannion Park, Middlesbrough	NZ556205	17/06/2008		E3 Ecology
Pipistrellus pipistrellus	Priors Pursglove, Normanby	NZ548176	25/09/2009	Numerous in flight & feeding	GlenKemp

Species	Location	Grid reference	Date	Count	Observer
Pipistrellus pipistrellus	Priors Pursglove, Normanby	NZ548176	08/10/2009	Numerous in flight & passing	GlenKemp
Pipistrellus pipistrellus	Redcar Health Centre	NZ600250	25/09/2009	In flight & foraging	EcoSurv
Pipistrellus pipistrellus	South Bank	NZ542185	2005	2+	Durham Bat Group
Pipistrellus pipistrellus	Flatts Lane Woodland Country Park	NZ545166	24/04/2009	3	Jonathan Pounder
Pipistrellus pipistrellus	St Thomas's Church, Brambles Farm, Middlesbrough	NZ5218	2007	3	Durham Bat Group
Pipistrellus pipistrellus	Normanby, Middlesbrough	NZ539179	2012	2 (roost)	Barry Anderson
Pipistrellus pygmaeus		NZ5923	21/07/2009	2	Undisclosed
Pipistrellus pygmaeus	Cleveland	NZ595218	29/07/2010	Roost	Licensed Bat Worker
Plecotus auritus	Normanby Hall	NZ541177	2007	20+ (active roost then)	Durham Bat Group

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A SURVEY OF REPTILES ON VARIOUS SITES AT WILTON INTERNATIONAL AND PD PORTS ESTATE

Ken Smith

February
2014

INCA
Industry Nature Conservation Association

This report has been produced for York Potash Ltd. to provide ecological advice relating to proposed activity on the Wilton International and PD Ports sites south of the river Tees. The report, and the data within it, belong to York Potash Ltd and are not to be used for any other purpose nor relied upon by any third party.

Report prepared for and on behalf of the Industry Nature Conservation Association
by:
Ken Smith
Ecological Consultant
February 2014
Checked and approved by:
Robert Woods
Ecologist
February 2014

1. Introduction

The candidate development areas, the red sections in Figure 1, are located in industrial and port related sites south of the River Tees (see Figure 1). INCA previously carried out for York Potash a Phase 1 Habitat Survey which identified the potential presence of reptiles, especially Common Lizard *Zootoca vivipara*, on each of the candidate development sites.

A preliminary survey of all of the areas that could be impacted during and after the proposed development was carried out. Those areas that were considered to be potential reptile habitats were chosen as the designated study sites. These areas were mostly open mosaic habitats of grass tussocks and zones of sparse vegetation with industrial debris such as metal sheeting, wooden planks etc. that could serve as reptile refuges. There were also paved and concrete sections that reptiles could use as basking sites.

Between May 2013 - October 2013 the study areas were surveyed using a standard reptile monitoring protocol (Froglife 1999).

2. Reptiles - Distribution and Conservation

Distribution

Only six species of reptiles are indigenous to the British Isles. These are Common Lizard *Zootoca vivipara*, Slow-worm *Anguis fragilis*, Sand Lizard *Lacerta agilis,* Adder *Vipera berus* Grass Snake *Natrix natrix* and Smooth Snake *Coronella austriaca*. Of the reptiles found in North East England, only the Common Lizard is recorded from the industrial areas of the Tees estuary. In addition to checking INCA historical data, the Environmental Records Information Centre North East (ERIC) was consulted for reptile data within a 10km radius of Wilton and Teesport. There were two records of Slow-worm within 10 km of the study sites and a single record of Adder (ERIC 2013). All records of Grass Snake are at distances greater than 10 km. Sand Lizard and Smooth Snake are uncommon / rare species that are restricted to southern England and do not occur in the north east of the country.

Of the reptiles found in North East England, only the Common Lizard *Zootoca vivipara* has been recorded from the industrial areas of the Tees estuary. This species is widely distributed in the UK with a range extending from the extreme north east of Scotland to south west Cornwall. The species inhabits a variety of habitats from moorland to lowland heath and coastal sand dunes (Frazer 1983). In the lower Tees Valley area however it is local and scarce, the main populations being on Eston Moor to the south of the Tees and probably a

small and viable population in the sand dune and slag areas around South Gare (Bond ND, Durkin 2012). To the north of the river there are small populations extending from Crimdon south to the Hartlepool Headland (Durkin 2012).

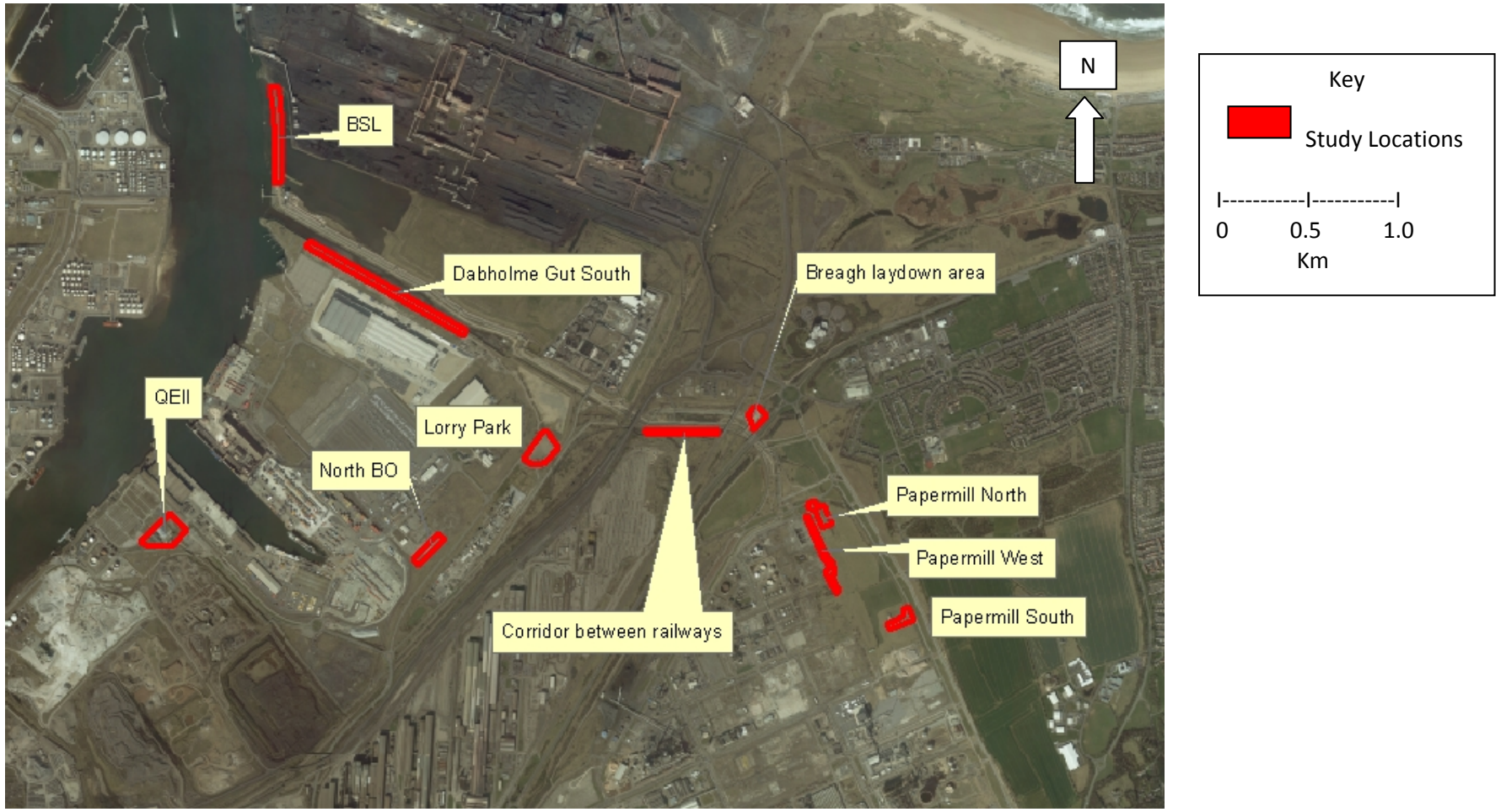
No records of reptiles for the survey sites or for areas adjoining these sites were found in either INCA's Ecological Database or in the published literature. The nearest sites to the survey areas for which there are confirmed records of Common Lizard are Eston Moor and South Gare. The approximate distances from the survey areas to these sites are given in Tables 1-3.

Conservation

Reptiles are protected by The Wildlife and Countryside Act 1981 (as amended) under which it is an offence to deliberately kill them. The definition of "deliberately" has been interpreted in case law to include carrying out development operations which are likely to result in the loss of individuals when they are known to be present on site. Their habitat is not protected although English Nature (now Natural England) issued guidelines as to what measures should be taken to conserve them when present on site (English Nature 2004). Common Lizard and Slow-worm are listed in the Tees Valley Biodiversity Action Plans (Tees Valley Wildlife Trust 2012).

Figure 1

Reptile Survey Sites



3. Survey Method

The survey method followed the recommendations published by Froglife 1999.

Ninety six reptile “refuges” were placed in a grid pattern across the ten survey plots (see Photographs 1-11 and Tables 1-3) and numbered between 1 and 96. The number of mats in each area is given in Tables 1 -3. The reptile refuges consisted of 0.5 m^2 squares of roofing felt as shown in Photograph 1.

Each refuge was examined on ten separate occasions between 26th September and 24th October 2013. On each visit the surface of the mats were examined and the mat was raised to check for the presence of reptiles. Other potential basking areas such as rock piles, bare patches within open mosaic grassland and the edges of tarred roads were also checked for reptiles. All surveys were carried out in fine weather with sunshine and temperatures between 13 - 21^{o}C.

Any amphibians found were recorded.

Photograph 1

Roofing Felt Reptile Mat

Table 1

Wilton Papermill (WPM) and Bran Sands Lagoon (BSL) Survey Areas

Survey Site	Size m^2	No. Mats	Survey Dates													Approx. Distance from known lizard population (km) Note 1	
			26/9	27/9	30/9	1/10	3/10	5/10	6/10	7/10	8/10	9/10	17/10	20/10	23/10	24/10	Eston Moor	South Gare
WPM south	5,000	6	√	√	√	√	√	-	-	√	√	√	-	√	√	√	4.5 SW	5 NW
WPM west	5,000	10	√	√	√	√	√	-	-	√	√	√	-	√	√	√	5 SW	4 NW
WPM north	10,000	6	√	√	√	√	√	-	-	√	√	√	-	√	√	√	5 SW	4 NW
BSL 4	10,000	10	√	√	√	√	√	-	-	√	√	√	-	- No access (Note 2)	√	√	7 SE	2 NE

Table 2

Breagh Laydown (BL) and Corridor Between Railways (CBR) Survey Areas

Survey Site	Size m^2	No. Mats	Survey Dates													Approx. Distance from known lizard population (km) Note 1	
			26/9	27/9	30/9	1/10	3/10	5/10	6/10	7/10	8/10	9/10	17/10	20/10	23/10	24/10	Eston Moor	South Gare
BL	5,000	6	√	√	√	√	√	-	-	√	√	√	-	√	√	√	5 SW	3 NW
CBR	10,000	12	√	√	√	√	√	-	-	√	√	√	-	√	-	√	5 SW	2 NW

Table 3

PD Ports Survey Areas

Survey Site	Size m^2	No. Mats	Survey Dates													Approx. Distance from known lizard population (km) Note 1	
			26/9	27/9	30/9	1/10	3/10	5/10	6/10	7/10	8/10	9/10	17/10	20/10	23/10	24/10	Eston Moor	South Gare
Lorry Park	4,500	6	-	-	-	-	√	√	√	√	√	√	√	√	√	√	5 SE	3 NE
Dabholme South	10,000	12	-	-	-	-	√	√	√	√	√	√	√	√	√	√	5 SE	2 NE
North British Oxygen	10,000	12	-	-	-	-	√	√	√	√	√	√	√	√	√	√	4.5 SE	3 NE
QEII Dock	1,500	16.	-	-	-	-	√	√	√	√	√	√	√	√	√	√	5.5 SE	4 NE

Notes

1. These distances are only approximate since both the Eston Moor and North Gare sites cover a large area and it is not known where precisely in these areas that Common Lizards have been recorded.
2. There was no access due to road repair work.

Photograph 2

Paper Mill South

Photograph 3

Paper Mill West

Photograph 4

Paper Mill North

Photograph 5

Breagh Laydown Area

Photograph 6

Corridor between Railways

Photograph 7

Bran Sands Lagoon

Photograph 8

Dabholme Gut South

Photograph 9

Lorry Park

Photograph 10

North British Oxygen

Photograph 11

QEII

4. Results

On each of the ten survey days no reptile species were found either on or under the mats or in other areas of the survey sites.

Common Toad *Bufo bufo* was the only amphibian species recorded during the surveys (see Table 4.) The Breagh Laydown and Papermill West survey areas are the only two sites immediately adjacent to permanent ponds.

Table 4

Common Toad Records

Date	Location	Number
26 September	Breagh Laydown	1
1 October	Breagh Laydown	3
1 October	Papermill West	1
3 October	Breagh Laydown	1
8 October	Papermill West	1

5. Conclusion

There is a very low risk that the proposed development on any of the sites would significantly affect any species of reptile. This is based on the negative results for all surveys at all sites, the absence of any historical records for reptile from these sites and the scarcity of reptile records from adjacent areas. Common Toad was recorded, but in low numbers that are not considered to represent a significant proportion of the local population.

No newt species was recorded in the survey areas, although Smooth Newt *Lissotriton vulgaris* is present adjacent to the Bran Sands Lagoon on the Wilton International Site (INCA data). There are no records of the specially protected Great Crested Newt *Triturus cristatus* on or adjacent to the survey sites.

References

Bond, I.,	ND	www. teesmouthbc.com
Durkin, J.	2012	Common Lizard. In : I. Bond, Ed. *Mammals , Amphibians and Reptiles of the North East.* Northumbrian Naturalist. Vol. 73.
English Nature	2004	*Reptiles: guidelines for developers* (IN151)
ERIC	2013	Environmental Information and Records Centre – North East
Frazer, D	1989	The British Amphibians and Reptiles. New Naturalist. Collins
Froglife	1999	Reptile Survey : *An Introduction to Planning , Conducting and Interpreting Surveys for Snake and Lizard Conservation.* Advice Sheet 10.
HMSO	1981	Wildlife and Countryside Act.
Tees Valley Wildlife Trust	2012	*Priority habitats and species in the Tees Valley.*

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A Survey for Otter and Water Vole at Selected Sites in Teesport & Wilton

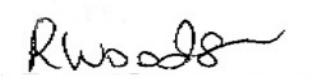
Robert Woods
March 2014

INCA
Industry Nature Conservation Association

This report has been produced for York Potash Ltd for the purpose of providing ecological advice.

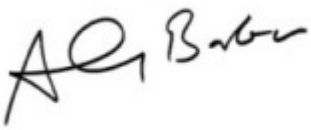
The report, and the data within it, belong to York Potash Ltd and is not to be used for any other purpose nor relied upon by any third party.

Report prepared for and on behalf of the Industry Nature Conservation Association by



Robert Woods
Ecologist
12th March 2014

Checked and approved by



Geoff Barber
Senior Ecologist
12th March 2014

Contents

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1. Introduction

York Potash Ltd have plans for a new Potash mine on the southern edge of the North York Moors National Park. As part of this project they require a materials handling facility, conveyor system and a new dock frontage to allow transport of the mined material by ship from Teesside. INCA have been contracted to carry out ecological surveys for Otter and Water Vole in relation to this proposal, which will be incorporated within an Environmental Impact Assessment by Royal Haskoning DHV on behalf of York Potash Ltd.

This report assesses particular water bodies in relation to their suitability for Otter and Water Vole. These are within the Wilton and Teesport sites on Teesside which may be affected by this development in as yet unspecified ways. The specific foci are Bran Sands lagoon and Dabholme Beck (figure 1) and a small section of the Mill Race ditch on the Wilton site (figure 2).

Figure 1 – Location of water bodies assessed at Bran Sands and Dabholme

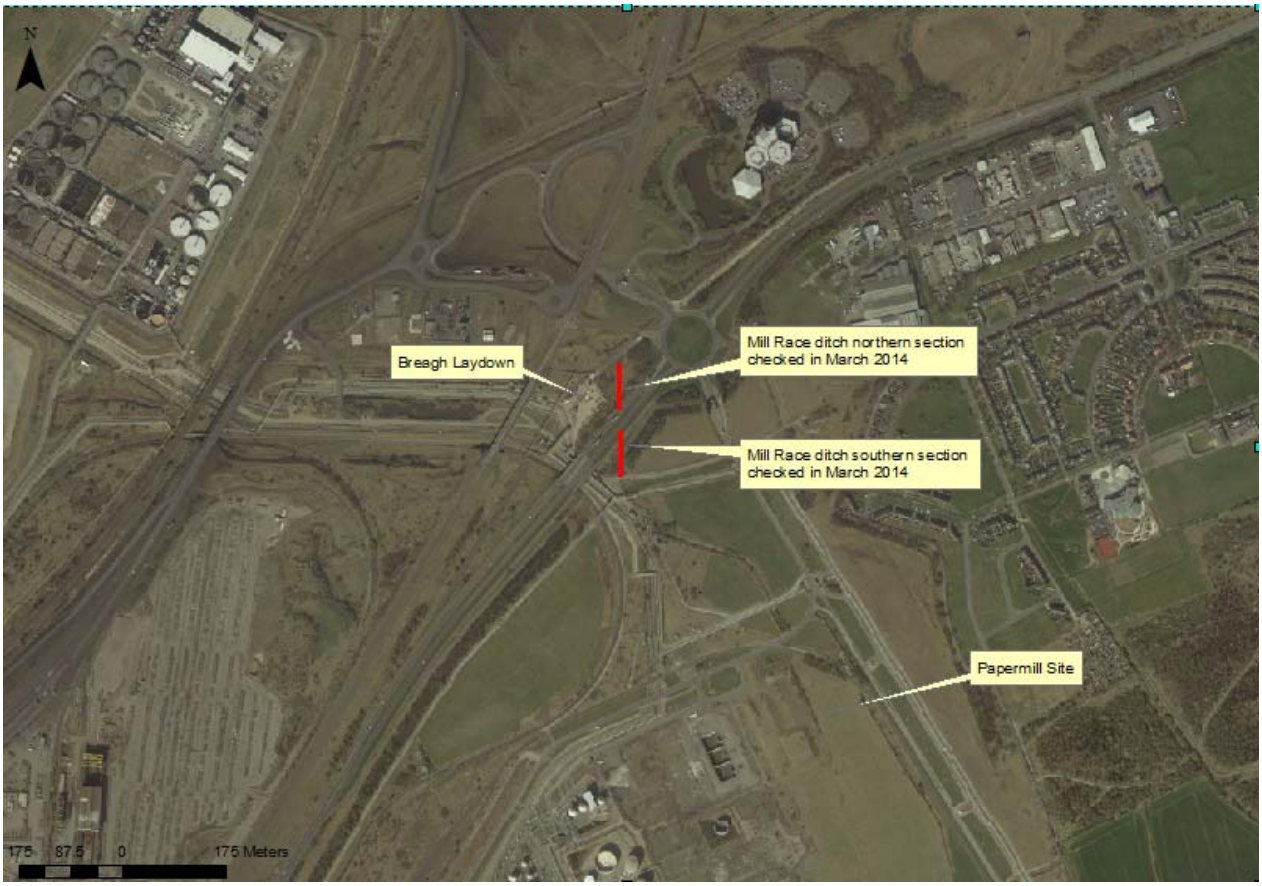

Figure 2 – Location of Mill Race ditch, Wilton

The areas where water bodies are situated are shown in figure 3, which denotes the terms used by INCA for these general locations so as to be consistent with locational names used by INCA in the compilation of other survey reports relating to this potential development (*e.g*. for reptiles). For ease of viewing, colours are used to demarcate the different areas which are shown in figure 3.

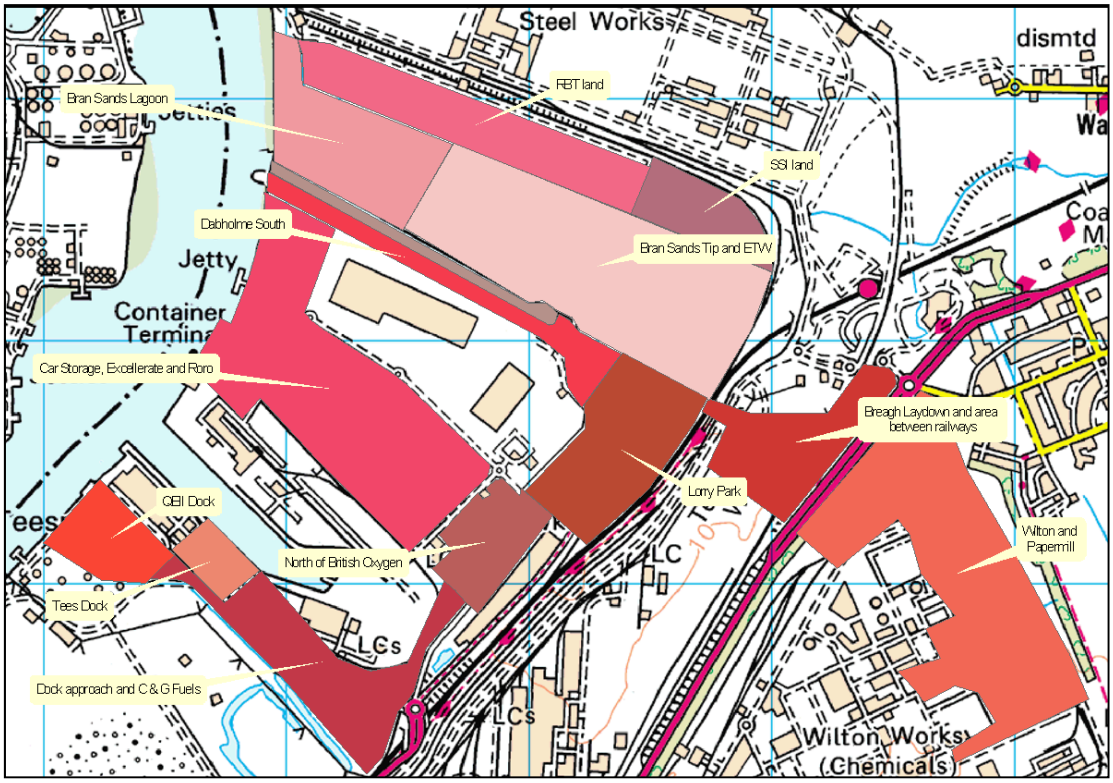

Figure 3 – Locational names used and their geographical situation

2. Legislative Context

The Otter *Lutra lutra* and their holts are fully protected under Schedule 5 of the Wildlife & Countryside (W&C) Act 1981 (as amended). The species is also protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2010, which transposes the requirements of the European Community Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EU Habitats Directive) into UK law.

Water Vole *Arvicola amphibius* is fully protected under Schedule 5 of the Wildlife & Countryside (W&C) Act 1981 (as amended). Both the animal and its habitat are fully protected under this Act, though not under the Conservation of Habitats and Species Regulations 2010. It is illegal to damage or destroy places used for shelter or to disturb Water Voles while they are occupying places of shelter.

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 lists both Otter and Water Vole as 'Species of Principal Importance in England'. With regard to listed species, it is incumbent upon decision-makers such as local

authorities "to have regard" for the conservation of biodiversity in England when carrying out their normal functions.

The Otter is now being found quite widely across the Tees Valley. Ideal habitat is typically within the riparian zone, but a single river catchment can have a mix of habitats, such as ditches, streams, marshes and wet grassland along its length, all of which may be part of the animal's territory. Water Vole is associated with water courses having gently sloping banks with luxuriant though not overgrown vegetation. It is important to note that presence of protected species on site has the potential to stop the proposed activity until mitigation is agreed with Natural England.

3. Survey Methodology

The industrial corridor of Teesside does not have open public access and by virtue of this does not have copious amounts of data relating to either Otter or Water Vole; much of what is available has been generated by INCA. By way of a desk study, in addition to the INCA data, the Environmental Records Information Centre North East (ERIC) was consulted for data relating to Otter and Water Vole within a 6km radius of Wilton and Teesport from a central point focused at NGR NZ560225. The purpose of survey visits detailed within this report was to carry out an inspection of the key locations shown in figures 1 and 2 for signs of Otter and Water Vole. The key locations were selected by INCA as being those which might have the highest risk of presence of these species, given the available information relating to the potential locations for the facilities mentioned earlier.

Otter surveys can be undertaken at any time of year. Water vole surveys are undertaken during the period of activity of these animals, normally between March and September when field signs can be more easily seen. Unseasonably mild and frost-free weather through until at least the end of October 2013 made it possible to conduct survey for this species slightly outside of the usual period. Site visits for both species were carried out in daylight with clear visibility and in good weather. These visits took place on 24th October 2013 (Dabholme Beck), 29th October 2013 (Bran Sands lagoon), 7th / 10th March (Mill Race southern section) and 10th / 12th March (Mill Race northern section). Dates where periods of rain may have obscured or removed some of the field signs were avoided so as to give the best chance of

observing such signs. For Otter, key field signs involve holts, spraints and footprints in mud; spraints typically being located on prominent rocks within water courses or bodies. For Water Vole surveys were undertaken with full reference to the Water Vole Conservation Handbook (Strachan and Moorhouse, 2006), searching for key field signs including burrows, latrines, grazed feeding stations and footprints and were carried out by Robert Woods and Geoff Barber, both experienced ecologists working for INCA. The length of Dabholme Beck was walked by these surveyors, both wearing waders, so as to clearly be able to observe both banks of the beck. Similarly the whole perimeter of Bran sands lagoon was walked, observing waterside locations for signs of the species detailed. The Mill Race ditch sections shown in figure 2 were walked by Robert Woods. A Bushnell Trophy Cam (remote operated camera) was additionally used to record activity along the Mill Race ditch due to the habitat suitability here. There were no access limitations to the margins of any of the water bodies studied.

4. Results

Assessment of the study locations for possible presence of Otter and Water Vole took place on 24th October 2013 (Dabholme Beck), 29th October 2013 (Bran Sands lagoon), 7th / 10th March (Mill Race southern section) and 10th / 12th March (Mill Race northern section). The weather was dry, sunny and still on all occasions, with a temperature of 13°C on the first occasion and 11 to 12°C on all remaining visits.

4.1. Otter Survey

4.1.1. Desk Study

There are no observations of Otter from the study locations within the INCA database. Dabholme Gut was searched for Otter and signs of the animal on 1st June 2011 (Barber, 2011a). No signs were found. Signs of Otter were also searched for on 19th May 2011 as part of an INCA Water Vole survey within the area of the 'Papermill' site shown in figure 2. No signs were found. Margins of the Wilton Ecology Pond and the surrounding habitat were surveyed for signs of Otter during Great Crested Newt surveys carried out on 29th & 30th April 2013, 8th & 9th May 2013, 14th & 15th May 2013 and 12th & 13th June 2013. Again, no signs were found. On

the basis of these results the ‘Papermill’ site and Wilton Ecology Pond were not further surveyed for this species as part of the current study.

The ERIC North East database provided records of Otter within a 6km radius of a central point focused at NZ560225 in the Lackenby area. These data were supplied to INCA in October 2013 and are shown in the Appendix. Within these data there are no records of Otter from the study areas.

4.1.2. Site survey

Dabholme Beck

A view to the north-west of the habitat along Dabholme Beck is shown in photo 1. The bank sides along the beck there are heavily vegetated and overgrown, with dense areas of bramble *Rubus fruticosus* and Common Nettle *Urtica dioica* along much of its length. At the south-eastern end of the beck there is a small area of *Phragmites* reedbed. This was not checked for signs of Otter on the 24th of October 2013 as it had already been specifically checked by Geoff Barber of INCA on 7th August 2013, 11th September 2013 and 10th October 2013. These searches indicated the south-eastern end of Dabholme Beck to be devoid of signs of Otter.

Photo 1: View north-west along Dabholme Beck

Photo 2: South-eastern end of Dabholme Beck

Signs of Otter in Dabholme Beck were found in the locations shown in figure 4; firstly of a spraint (length 3.5cm and width 1.1cm at the widest point) situated on a rock within the beck channel (photos 5 & 6) and secondly of footprints in mud adjacent to the channel (photo 7). These showed asymmetrical toe pads and a broad but short heel pad, reminiscent of and likely to be those of Otter. The spraint had a not unpleasant and characteristic fishy odour.

Photo 3 & 4: Typical view of banksides at Dabholme Beck

Figure 4 – Location of Otter signs at Dabholme Beck

Photo 5 & 6: Location of spraint beside coin and close-up

Photo 7: Possible Otter prints in mud beside a one pound coin

Bran Sands lagoon

The waterside habitat around the whole perimeter of this lagoon is lined with riprap and the lagoon itself is saline. Locations of this type in the lower Tees Valley are known to be frequented by Otter, such as at the nearby Seal Sands to the north of the study location (INCA data).

Various views of the lagoon which are included here show its character (photos 8 to 10).

Photo 8: Southern end of lagoon

Photo 9: Northern end of lagoon

Photo 10: Close-up view of lagoon shoreline

There were two locations along the northern edge of Bran Sands lagoon where single Otter spraints were found (see figure 5); both of these were on prominent rocks which were situated in the shallows at the edge of the lagoon. One of these spraints is figured in this report (photo 11). There was no evidence of a holt along the entire shoreline of the lagoon or indeed at the Dabholme Beck site.

Figure 5 – Location of Otter spraints at Bran Sands lagoon

Photo 11: Otter spraint at Bran Sands lagoon

Mill Race ditch

Visits to this site on the 7th and 10th March (southern section) and again on 10th and 12th March (northern section) in dry, sunny weather at midday showed no evidence of Otter. A remote operated camera left in these locations between the dates indicated also showed no evidence of Otter.

4.2. Water Vole Survey

4.2.1. Desk Study

There is only a single record of one Water Vole from the Wilton site, which was observed on 9th April 2010 in Kettle Beck along the western boundary of the works (at NZ562203). This observation was made by ecologist Ken Smith of INCA. There were two subsequent Water Vole surveys by INCA within the area of the 'Papermill' site shown in figure 2, specifically to survey ditches in this part of the Wilton works, one on 19th May 2011 (Barber, 2011b) and the second on 14th March 2013 (Barber, 2013). Both proved negative. Margins of the Wilton Ecology Pond and the surrounding habitat were surveyed for signs of Water Vole during Great Crested Newt surveys carried out on 29th & 30th April 2013, 8th & 9th May 2013, 14th & 15th May 2013 and 12th & 13th June 2013. Again, no signs were found. On the basis of these results the 'Papermill' site and Wilton Ecology Pond were not further surveyed for this species as part of the current study.

The ERIC North East database provided records of Water Vole within a 6km radius of a central point focused at NZ560225 in the Lackenby area. These data were supplied to INCA in October 2013 and are shown in the Appendix. Within these data there is only one record of Water Vole. This record is from INCA and is detailed above.

4.2.2. Site survey

Dabholme Beck

At the south-eastern end of the beck (photo 2) there is a small area of *Phragmites* reedbed. This was not checked for signs of Water vole on the 24th of October 2013 as it had already been specifically checked by Geoff Barber of INCA on 7th August 2013, 11th September 2013 and 10th October 2013. These searches indicated the south-eastern end of Dabholme Beck to be devoid of signs of this species.

Exposed banksides along Dabholme were found to be unsuitable for Water Vole as they are lined with rip rap (see photos 3 & 4).

Bran Sands lagoon

The waterside habitat around the whole perimeter of this lagoon is lined with riprap and the lagoon itself is saline. This renders the location unsuitable for Water Vole and no signs of this species were found.

Mill Race ditch

Visits to this site on 7th and 10th March (southern section) and again on 10th and 12th March (northern section) in dry, sunny weather at midday showed no evidence of Water Vole. Habitat present along the sections of the Mill Race ditch surveyed appeared suitable for Water vole (see photo 12).

Photo 12: Typical view of section of Mill Race ditch surveyed

In view of the theoretical habitat suitability for Water Vole, a remote operated camera was left in these locations between 7th and 10th March 2014 (southern section) and again on 10th and 12th March 2014 (northern section). This showed no evidence of Water Vole. Grazed areas seen in both locations were most likely to have been created by Mallard *Anas platyrhynchos* which was filmed grazing here on 8th March 2014 (photo 13) and was seen along the Mill Race during each visit.

Photo 13: Mallard grazing along the Mill Race ditch

5. Interpretation and recommendation

There was no evidence of Water Vole in any of the locations surveyed or any part of the Wilton site surveyed since 2010. Signs of Otter were noted in both locations, but this is not unexpected in the estuary as Otter sightings are increasing. The low frequency of signs observed during this study suggests occasional use of the area by a single Otter or by a small number of commuting Otters as part of a foraging range. It is not suggested that further surveys take place for either of these species and the risk of proposed development causing harm to these particular species is thought to be low.

6. References

- Barber. G., (2011a), *Otter Survey, October 2011*. An INCA report produced for TRL.
- Barber. G., (2011b), *Water Vole Survey, Wilton, May 2011*. An INCA report produced for TRL.
- Barber. G., (2013), *Ecological Survey Wilton East Entrance Ditch, March 2013*. An INCA report produced for Sembcorp.
- Strachan. R., and Moorhouse.T., (2006). *Water Vole Conservation Handbook (second edition)*. Wildlife Conservation Research Unit, Oxford.

Appendix: Records of Otter & Water Vole from ERIC

Species	Location	Grid reference	Date	Count	Other signs or comments	Record Confirmed?	Observer
Otter	Saltholme Pool	NZ5022	06/09/2009	1	Alive	Unconfirmed; 2 reports	D. I. Griss
Otter	Cowpen Marsh	NZ506247	10/01/2012		Spraint	Unconfirmed	Toby Collett
Otter	Cowpen Marsh	NZ506246	01/03/2012		Spraint	Unconfirmed	Toby Collett
Otter	RSPB Saltholme	NZ5023	19/04/2011	1	Swimming along drainage channel	Unconfirmed	Ian Thompson
Otter	Greenabella Marsh	NZ518268	14/09/2009	1	Seen at 09.30 in the morning	Considered Correct	Robert Woods
Otter	Seaton Channel	NZ5226	01/09/2009	1	Foraging In Estuary	Considered Correct	Robert Woods
Otter	River Tees, Port Clarence	NZ504218	23/02/2011		Road casualty, young male	Considered Correct	
Otter	Dunsdale Beck Lake, Dunsdale Farm	NZ596190	01/02/2000		Spraint	Considered Correct	L. Winter
Otter	Seaton Snook	NZ536268	10/12/2009		Beach Prints	Considered Correct	Ian Bond
Otter	Dorman's Pool	NZ5122	10/02/2009			Considered Correct	David Harrison
Otter	Dormans Pool	NZ513230	17/06/2010	1	Freshwater marsh	Unconfirmed	Bruce Caswell
Otter	Greenabella Marsh	NZ518268	07/07/2010	1	Seen at first light (4am) disappearing into reedbed near the sea wall	Considered Correct	Paul Thomson
Water Vole	Wilton International	NZ562203	09/04/2010	1	Observed 50m south of INVISTA site boundary in Kettle Beck	Unconfirmed	Ken Smith
Water Vole	Stockton, Cowpen Marsh	NZ506246	31/08/2011		seen	Unconfirmed	Derek Clayton
Water Vole	Cowpen Marsh	NZ506246	31/08/2011			Unconfirmed	Ian Bond
Water Vole	Greatham	NZ517263	2009		Field signs, in marsh/ditches	Considered Correct	Kenny Crooks
Water Vole	Saltholme RSPB Teesside	NZ5022	15/08/2010	1		Unconfirmed	D. I. Griss

Species	Location	Grid reference	Date	Count	Other signs or comments	Record Confirmed?	Observer
Water Vole	Power Station Stell	NZ534269	2002		latrines (13)	Considered Correct	Kelly Parker
Water Vole	Conoco Phillips	NZ508263	2002		latrines (44)	Considered Correct	Kelly Parker
Water Vole	A178 opposite Tioxide	NZ512262	15/05/2000		latrines; NZ514267 - NZ512262	Considered Correct	Graham Megson
Water Vole	Tees Road	NZ5126	1999			Considered Correct	Graham Megson
Water Vole	A178 opposite Tioxide	NZ514267	15/05/2000		latrines; NZ514267 - NZ512262	Considered Correct	Graham Megson
Water Vole	Seaton Common (south)	NZ532280	2001		Latrines; NZ525280 - NZ532280	Considered Correct	Dan McAndrew
Water Vole	Seaton Common (north)	NZ532283	2008		latrines; NZ532283 - NZ526280	Considered Correct	Hartlepool Borough Council
Water Vole	Seaton Common (South)	NZ533276	2006		latrines (5)	Considered Correct	Emma Glister
Water Vole	Ormesby Beck, Berwick Hills	NZ5018	2013			Unconfirmed	Chris Corbett
Water Vole	Brambles Farm	NZ530196	2009		Urban beck	Unconfirmed	Kenny Crooks
Water Vole	Seaton Meadows	NZ5228	05/10/2005		Latrine, Burrow	Considered Correct	Ian Bond
Water Vole	Saltholme	NZ5022	27/09/2011	2	On roadside	Unconfirmed	Graham Mitchell
Water Vole	Seaton Common LNR	NZ5328	19/08/2008	1		Considered Correct	Robert Smith
Water Vole	Able UK/Tees	NZ536273	2006			Unconfirmed	Environment Agency
Water Vole	Grewgrass Farm - rectangular pond	NZ611219	12/05/2009			Unconfirmed	John Pybus
Water Vole	Carr Pond, Eston Moor	NZ563174	2009		Signs found	Unconfirmed	Dave Spencer
Water Vole	Greenabella Marsh	NZ517263	2009		latrines (2)	Considered Correct	Mark Slaughter
Water Vole	Greenabella Marsh	NZ520266	2009		latrine	Considered Correct	Mark Slaughter
Water Vole	Seaton Common (south)	NZ525280	2001		Latrines; NZ525280 - NZ532280	Considered Correct	Dan McAndrew

Species	Location	Grid reference	Date	Count	Other signs or comments	Record Confirmed?	Observer
Water Vole	Seaton Common (north)	NZ526280	2008		latrines; NZ532283 - NZ526280	Considered Correct	Hartlepool Borough Council
Water Vole	Seaton Meadows	NZ524278	1999		Vole; NZ524280 - NZ524278	Considered Correct	EA;Katy Dickson
Water Vole	Seaton Meadows	NZ524280	1999		Vole; NZ524280 - NZ524278	Considered Correct	EA;Katy Dickson
Water Vole	Power Station Stell	NZ526273	1998		Vole; no signs in 2006	Considered Correct	TVWT Survey 1998

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