

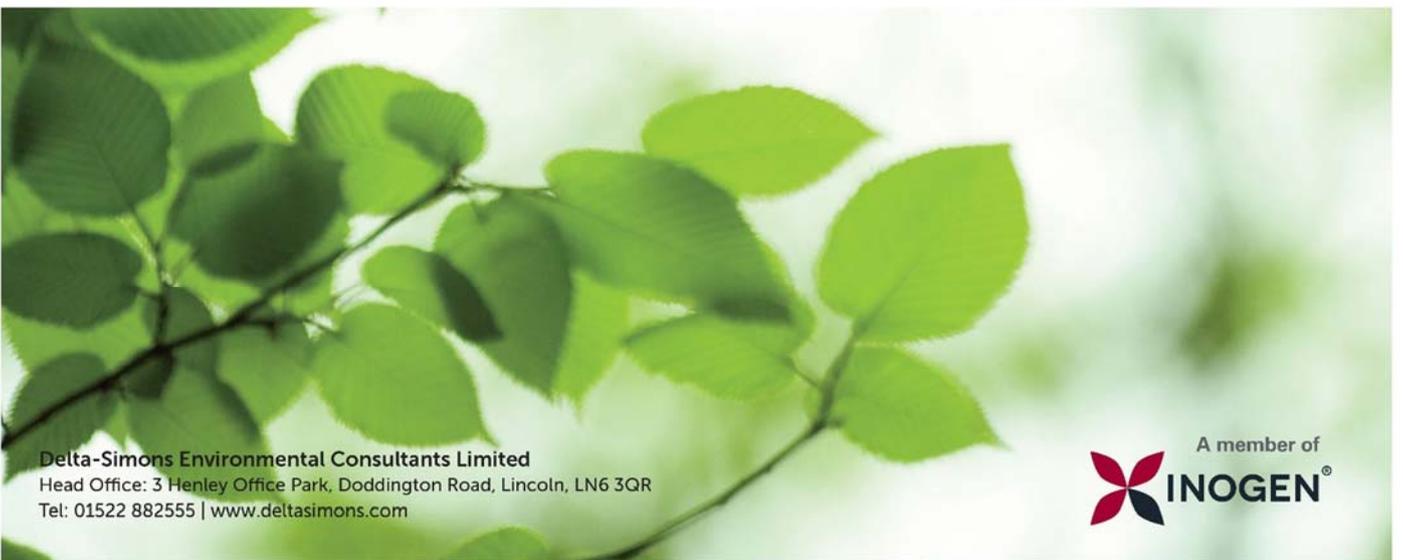


# Information to support a Habitats Regulations Assessment

Land off Easington Road, Hartlepool

Presented to **England Lyle Good**

Issued: June 2017



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## Report Details

<b>Client</b>	England Lyle Good Planning
<b>Report Title</b>	Habitat Regulation Assessment Screening Report
<b>Site Address</b>	Land off Easington Road, Hartlepool
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## Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
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## About us

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## Executive Summary

<p><b>Scope of Works</b></p>	<p>Delta-Simons Environmental Consultants Ltd was instructed by England Lyle Good (ELG) Planning ('the Client') to undertake a Stage 1 Screening Assessment of a proposed residential development off Easington Road on the northern edge of Hartlepool, County Durham (hereafter referred to as the "Site").</p> <p>The primary aim is to provide information to assist the Competent Authority to determine whether or not the proposed development of the Site would have a likely significant effect on those Natura 2000 sites (European conservation sites) that fall within a 6 km radius of the Site, either alone or in combination with other plans or projects.</p>
<p><b>Current Site Status</b></p>	<p>The Site comprises a recently ploughed field surrounded by a margin of semi-improved neutral grassland to the west and south, beyond which a wide strip of dense scrub lined the southern boundary, and plantation woodland along the western boundary. To the north and east were hedgerow boundaries, whilst a stream flowed along much of the southern boundary. Derelict stables were present in the north-western corner of the Site surrounded by hard standing.</p>
<p><b>Proposed Development</b></p>	<p>The proposed development is of a parcel of land covering an area of 2.2 ha, which is located to the east of Easington Road on the northern boundary of Hartlepool (see Figure 1), and centred on Ordnance Survey (OS) grid reference NZ 48261 36206. It is understood that the Site is proposed for a residential development of up to 50 dwellings, with associated hard and soft landscaping, however, the proposals have not yet been finalised.</p>
<p><b>Results: European conservation sites</b></p>	<p>The following Natura 2000 sites are found within 6km of the Site:</p> <p><b>Teesmouth and Cleveland SPA and Ramsar site:</b></p> <p>Designated under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:</p> <ul style="list-style-type: none"> <li>▲ Breeding little tern</li> <li>▲ On passage sandwich tern</li> </ul> <p>The site is also designated under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:</p> <ul style="list-style-type: none"> <li>▲ On passage ringed plover</li> <li>▲ Over winter knot and common redshank</li> </ul> <p>The site also qualifies under Article 4.2 of the Directive (79/409/EEC) as a wetland of international importance by regularly supporting at least 20,000 waterfowl;</p> <ul style="list-style-type: none"> <li>▲ Over winter, the area regularly supports 21,406 individual waterfowl</li> </ul> <p><b>Northumbria Coast SPA and Ramsar site;</b></p> <p>The site is designated under Article 4.1 of the Birds Directive for supporting breeding populations of European importance of one Annex I species:</p> <ul style="list-style-type: none"> <li>▲ Little tern</li> </ul> <p>The site is also designated under Article 4.2 of the Birds Directive for supporting overwintering populations of European importance of the following migratory species:</p> <ul style="list-style-type: none"> <li>▲ Purple sandpiper and turnstone</li> </ul>

	<p><b>Durham Coast SAC</b></p> <p>▲ Designated for the occurrence of one Annex I habitat, Vegetated sea cliffs of the Atlantic and Baltic coasts</p> <p><b>Castle Eden Dene SAC</b></p> <p>▲ Designated for the occurrence of one Annex I habitat, <i>Taxus Baccata</i> woods of the British Isles</p>
<p><b>Impact pathways</b></p>	<p>A potential impact pathway exists in the form of a net increase in human population as a result of the development. This may result in increased recreational pressure on the breeding colony of little tern at Crimdon Dene.</p> <p>The nesting site is fenced off from the public between April and September every year and guarded by a warden and volunteers</p> <p>Based on the size of the current development of up to 50 dwellings and applying the Hartlepool average household size of 2.3, a population increase of 115 people can be realistically expected. If 80.1% of the houses are occupied through re-location from other areas within Hartlepool, this equates to 92 people. This leaves a growth figure of 23.</p> <p>Based on these statistics a population increase of 23 will lead to five additional adults walking for 30 minutes every four weeks, with an anticipated increase in dog owning homes of six (24%).</p> <p>As a result of the size of the development, no significant effect as a result of recreational activities is expected.</p>
<p><b>Likely significant effect</b></p>	<p>The development has been considered in terms of its scale, nature and location in relation to European and internationally designated sites. The ecological requirements and key vulnerabilities of qualifying features have been considered, and assessed against the potential ecological impacts of the development to determine whether there would be a likely significant effect.</p> <p>The conclusion of the assessment suggest that the Competent Authority could safely conclude that there is no likely significant effect on the qualifying features of the Natura 2000 Sites. However, this takes into account current levels of protection of the qualifying feature (little tern). To allow for continued protection of the breeding colony it is advised that a contribution is made to the wardening of the colony in future years.</p>
<p><b>This Habitats Regulations Assessment Stage 1 Screening Executive Summary is intended as a summary of the assessment of the Site based on information received by Delta-Simons at the time of production. This Executive Summary should be read in conjunction with the full Report.</b></p>	

## Table of Contents

1.0	INTRODUCTION	1
1.1	Aims and objectives	1
1.2	Development proposals	1
1.3	European conservation sites	1
1.4	Regulatory basis of Habitats Regulations Assessment	1
2.0	NATURA 2000 AND RAMSAR SITES	3
2.1	Teesmouth and Cleveland Coast SPA	3
2.1.1	During the breeding season	3
2.1.2	On passage	3
2.1.3	On passage	3
2.1.4	Over winter	3
2.2	Teesmouth and Cleveland Ramsar	3
2.3	Northumbria Coast SPA	4
2.4	Northumbria Coast Ramsar site	4
2.4.1	Breeding species	4
2.4.2	Species with peak counts in spring / autumn	4
2.5	Durham Coast SAC	5
2.6	Castle Eden Dene SAC	5
2.7	Conservation objectives	5
2.7.1	SAC conservation objectives	5
2.7.2	SPA Conservation Objectives	5
3.0	ECOLOGY AND SENSITIVITY OF QUALIFYING FEATURES	7
3.1	Data sources	7
3.1.1	Regulation 33 / 35 Advice for European Marine Sites	7
3.1.2	Advice for SAC's	7
3.1.3	SSSI condition assessment	7
3.2	Ecology and sensitivity of SPA qualifying species	7
3.2.1	Teesmouth and Cleveland Coast SPA	7
3.2.2	Northumbria Coast SPA	8
3.2.3	SSSI condition assessments	8
3.3	Ecology and sensitivity of SAC qualifying habitats	9
3.3.1	Vegetated sea cliffs	9
3.3.2	Durham SAC – SSSI unit condition assessment	9
3.3.3	Taxus baccata woodland	9
4.0	ECOLOGICAL IMPACTS AND LIKELY SIGNIFICANT EFFECT	10
4.1	Description of development	10
4.2	Summary of Site ecology	10
4.2.1	Local ecological context	10
4.2.2	Potential to support qualifying features of European conservation sites	10
4.3	Screening for likely significant effects	10
4.3.1	Northumbrian Coast SPA and Teesmouth and Cleveland Coast SPA	10
4.3.2	Durham Coast SAC	14
4.3.3	Castle Eden Dene SAC	14
4.4	Likely significant effect of recreational impacts	14
4.4.1	Definition of likely significant effect	14
4.4.2	Potential effects on little tern	14
4.4.3	Likely significant effect of Easington Road development	14
4.5	Likely significant effect in the absence of mitigation	15
4.6	In-combination effects and likely significant effect	15
4.7	Incorporated mitigation	15
4.7.1	Requirement for incorporation of mitigation measures	15
4.7.2	Implementation of mitigation measures	16
5.0	CONCLUSIONS AND RECOMMENDATIONS	17
5.1	Likely significant effect	17
5.2	Recommendations	17
6.0	DISCLAIMER	18

## Table

Table 1          Screening matrix for likely significant effects

## Figures

Figure 1          Site Location Map

Figure 2          Indicative Site Layout

Figure 3          Extended Phase 1 Habitat Plan

## Appendices

Appendix A      European Regulation 33 / 35 Advice

Appendix B      References

# 1.0 Introduction

## 1.1 Aims and objectives

Delta-Simons Environmental Consultants Ltd was instructed by England Lyle Good (ELG) Planning ('the Client') to undertake a Stage 1 Screening Assessment of a proposed residential development off Easington Road on the northern edge of Hartlepool, County Durham (hereafter referred to as the "Site").

This document provides information to assist the Local Planning Authority (LPA), Hartlepool Borough Council (HBC, the 'Competent Authority'), in carrying out a Habitats Regulations Assessment ('HRA') in accordance with Article 6(3) and 6(4) of the EU Habitats Directive (92/43/EEC). The primary aim is to provide information to assist the Competent Authority to determine whether or not the proposed development of the Site would have a likely significant effect on those Natura 2000 sites (European conservation sites) that fall within a 6 km radius of the Site, either alone or in combination with other plans or projects. This is equivalent to the requirements of Stage 1 of the HRA process, following the procedures set out in European and current national guidance (European Commission, 2001; ODPM, 2005)

## 1.2 Development proposals

The proposed development is of a parcel of land covering an area of 2.2ha ha, which is located to the east of Easington Road on the northern boundary of Hartlepool (see Figure 1), and centred on Ordnance Survey (OS) grid reference NZ 48261 36206. It is understood that the Site is proposed for a residential development of up to 50 dwellings, with associated hard and soft landscaping, however, the proposals have not yet been finalised.

## 1.3 European conservation sites

Natura 2000 sites comprise Special Areas of Conservation (SAC) designated under the EU Habitats Directive (Council Directive 92/43/EEC), and Special Protection Area (SPA) designated under the EU Birds Directive (Council Directive 2009/147/EC).

Ramsar sites are wetland sites of international importance designated under the 1971 Ramsar Convention on Wetlands. Although not part of the Natura 2000 network, the UK government has chosen to apply the same assessment procedures to plans and projects affecting Ramsar sites (ODPM, 2005 paragraph 6), and they, therefore, need to be considered in the HRA process.

UK designated sites, including National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR) are not considered in the following assessment. The nearest Natura 2000 and Ramsar site is located approximately 580 m east of the Site boundary. This is Teesmouth and Cleveland SPA and Ramsar site. Northumbria Coast SPA and Ramsar Site lies 2.6 km north-east of the Site boundary. Durham Coast SAC is located approximately 3.1 km south-east of the site boundary with Castle Eden Dene SAC 4.9km to the north east. There are no other sites within 6 km of the site boundary, which can be taken as an appropriate buffer for a development of this nature. The residential development will not involve significant emissions to air or water, which may otherwise extend the spatial reach of ecological effects.

## 1.4 Regulatory basis of Habitats Regulations Assessment

Article 6 (3) of the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna) states:

*'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.'*

Article 6 (4) states: *'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory*

*measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.'*

The Conservation of Habitats and Species Regulations 2010 (as amended), hereafter referred to as the 'Habitats Regulations', implement the provisions of the Habitat Directive in UK law.

The Habitats Regulations consolidate the Conservation (Natural Habitats &c.) Regulations 1994, and Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007.

The Habitats Regulations were amended by the Conservation of Habitats and Species (Amendment) Regulations 2012. This provides for clearer transposition of the provisions of the Birds Directive into UK law, and revokes two Regulations (20 & 22) which duplicate measures to control potentially damaging activities on SSSIs. Regulation 9A sets out the duties of appropriate authorities and nature conservation bodies with respect to the Birds Directive. Regulation 9A (8) provides the legislative basis for considering pollution or deterioration of habitats inside or outside a designated site, transposing Article 4 (4) of the 2009 Birds Directive.

Regulation 61 (1) of the Habitats Regulations states:

*'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which-*

*(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and*

*(b) is not directly connected with or necessary to the management of the site, must make an appropriate assessment of the implications for the site in view of that site's conservation objectives.'*

The 'competent authority' in this case is HBC, as LPA.

## 2.0 Natura 2000 and Ramsar sites

### 2.1 Teesmouth and Cleveland Coast SPA

Teesmouth and Cleveland Coast SPA covers a total area of 1247.31ha (Stroud et al, 2001) Habitats include sand and mud flats, rocky shore, saltmarsh, freshwater marsh and sand dune.

This site is designated under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

#### 2.1.1 During the breeding season

- ▲ Little Tern *Sterna albifrons*, 37 pairs representing at least 1.5% of the breeding population in Great Britain (4 year mean 1993-1996).

#### 2.1.2 On passage

- ▲ Sandwich Tern *Sterna sandvicensis*, 2,190 individuals representing at least 5.2% of the population in Great Britain (5 year mean 1991-1995).

The site is also designated under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

#### 2.1.3 On passage

- ▲ Ringed Plover *Charadrius hiaticula*, 634 individuals representing at least 1.3% of the Europe/Northern Africa - wintering population (5 yr mean spring 91-95);

#### 2.1.4 Over winter

- ▲ Knot *Calidris canutus*, 4,190 individuals representing at least 1.2% of the wintering Northeastern Canada/Greenland/Iceland/Northwestern Europe population (5 year peak mean 1991/2 - 1995/6);
- ▲ Common redshank *Tringa totanus*, 1,648 individuals representing at least 1.1% of the wintering Eastern Atlantic - wintering population (5 year peak mean 87-91).

The site also qualifies under Article 4.2 of the Directive (79/409/EEC) as a wetland of international importance by regularly supporting at least 20,000 waterfowl;

- ▲ Over winter, the area regularly supports 21,406 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Sanderling *Calidris alba*, Lapwing *Vanellus vanellus*, Shelduck *Tadorna tadorna*, Cormorant *Phalacrocorax carbo*, Redshank, Knot.

### 2.2 Teesmouth and Cleveland Ramsar

The boundaries of the Ramsar site are contiguous with those of the SPA. It is designated under Ramsar criterion 5 for supporting winter assemblages of International importance:

- ▲ 9528 waterfowl (5 year peak mean 1998/99-2002/2003).

The site is also designated under Ramsar criterion 6 for the following species / populations occurring at levels of international importance (source: Information Sheet on Ramsar Wetlands – Teesmouth and Cleveland Coast. JNCC Version 3.0, 28/05/17):

Species with peak counts in Spring/Autumn

- ▲ Common redshank, 883 individuals, representing an average of 0.7% of the GB population (5 year peak mean 1998/9- 2002/3).

Species with peak counts in winter:

- ▲ Red knot, W & Southern Africa (wintering) 2579 individuals, representing an average of 0.9% of the GB population (5 year peak mean 1998/9-2002/3)

## 2.3 Northumbria Coast SPA

Northumbria Coast SPA covers a total area of 1107.98ha (Stroud et al, 2001) between the Tweed and Tees estuaries. It comprises discrete sections of rocky shore with associated boulder and pebble beaches; parts of three artificial pier structures; and a small section of sandy beach.

The site is designated under Article 4.1 of the Birds Directive for supporting breeding populations of European importance of one Annex I species:

- ▲ Little tern: 40 pairs representing at least 1.7% of the breeding population in Great Britain (5 year peak mean 1991/2 - 1995/6).

The site is also designated under Article 4.2 of the Birds Directive for supporting overwintering populations of European importance of the following migratory species:

- ▲ Purple sandpiper *Calidris maritima*, 763 individuals representing at least 1.5% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6); and
- ▲ Turnstone *Arenaria interpres*, 1,456 individuals representing at least 2.1% of the wintering Western Palearctic population (5 year peak mean 1991/2 - 1995/6).

## 2.4 Northumbria Coast Ramsar site

The boundaries of the Ramsar site are contiguous with those of the SPA. It is designated under Ramsar criterion 6, for the following species / populations occurring at levels of international importance (source: Information Sheet on Ramsar Wetlands – Northumbria Coast. JNCC Version 3.0, 28/05/17):

- ▲ Little tern: 43 apparently occupied nests representing an average of 2.2% of the Great Britain population (Seabird 2000 Census);
- ▲ Purple sandpiper, 291 individuals representing an average of 1.6% of the GB population (5 year peak mean 1998/9 - 2002/3); and
- ▲ Turnstone, 978 individuals representing at least 1% of the NE Canada, Greenland/ W Europe & NW Africa population (5 year peak mean 1998/9 – 2002/3).

An additional six species of 'noteworthy fauna' are listed in the Ramsar Information Sheet, comprising the following:

### 2.4.1 Breeding species

- ▲ Great cormorant: 248 apparently occupied nests, representing an average of 2.9% of the GB population (Seabird 2000 Census);
- ▲ Black-legged kittiwake *Rissa tridactyla*: 4070 apparently occupied nests, representing an average of 1.1% of the GB population (Seabird 2000 Census); and
- ▲ Arctic tern *Sterna paradisaea*: 1200 apparently occupied nests, representing an average of 2.2% of the GB population (Seabird 2000 Census).

### 2.4.2 Species with peak counts in spring / autumn

- ▲ Golden plover *Pluvialis apricaria*: 2911 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3). Species with peak counts in winter
- ▲ Common eider *Somateria mollissima*: 1361 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3); and
- ▲ Sanderling: 419 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3).

## 2.5 Durham Coast SAC

Durham Coast SAC covers a total area of 389.61ha. It is designated for the occurrence of one Annex I habitat, Vegetated sea cliffs of the Atlantic and Baltic coasts. The site description describes the characteristics of this qualifying feature as follows<sup>1</sup>:

*'The Durham Coast is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. These cliffs extend along the North Sea coast for over 20 km from South Shields southwards to Blackhall Rocks. Their vegetation is unique in the British Isles and consists of a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub. Within these habitats rare species of contrasting phylogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest. The communities present on the sea cliffs are largely maintained by natural processes including exposure to sea spray, erosion and slippage of the soft magnesian limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water.'*

## 2.6 Castle Eden Dene SAC

Castle Eden Dene SAC covers a total area of 189 ha. It is designated for the occurrence of one Annex I habitat, *Taxus Baccata* woods of the British Isles. The site description describes the characteristics of this qualifying feature as follows<sup>2</sup>:

*'Castle Eden Dene in north-east England represents the most extensive northerly native occurrence of yew *Taxus baccata* woods in the UK. Extensive yew groves are found in association with ash-elm *Fraxinus-Ulmus* woodland and it is the only site selected for yew woodland on magnesian limestone in north-east England.'*

## 2.7 Conservation objectives

### 2.7.1 SAC conservation objectives

Conservation Objectives for Durham Coast SAC and Castle Eden Dene SAC have been set out by Natural England as follows:

*"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;*

- ▲ *The extent and distribution of qualifying natural habitats*
- ▲ *The structure and function (including typical species) of qualifying natural habitats, and*
- ▲ *The supporting processes on which the qualifying natural habitats rely."*

To date no Supplementary Advice has been published concerning these objectives.

### 2.7.2 SPA Conservation Objectives

Conservation Objectives for Durham Coast SPA and Teesmouth and Cleveland Coast SPA have been set out by Natural England as follows:

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

- ▲ *The extent and distribution of the habitats of the qualifying features*
- ▲ *The structure and function of the habitats of the qualifying features*
- ▲ *The supporting processes on which the habitats of the qualifying features rely*

<sup>1</sup> (<http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0030140>).

<sup>2</sup> (<http://jncc.defra.gov.uk/protectedsites/SACselection/SAC.asp?EUCode=UK0012768>).

- 
- ▲ *The population of each of the qualifying features, and,*
  - ▲ *The distribution of the qualifying features within the site.”*

Supplementary Advice to support the Conservation Objectives is not currently available, although as European Marine Sites, Regulation 33 / 35 Advice is available (English Nature, 2000).

## 3.0 Ecology and sensitivity of qualifying features

### 3.1 Data sources

#### 3.1.1 Regulation 33 / 35 Advice for European Marine Sites

For European Marine Sites, Regulation 35(3) of the Habitats Regulations 2010 (Regulation 33 of the previous regulations) requires nature conservation bodies to provide advice to regulatory authorities on the conservation objectives and *'any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species, for which the site has been designated.'*

The Regulation 33 Advice for Northumbria Coast SPA and Teesmouth and Cleveland Coast SPA (English Nature, 2000) fulfils the above functions. It also includes information on the ecological requirements of qualifying species, which are summarised below, and information on vulnerabilities to different categories of operation, which are reproduced in Appendix A.

Further information on qualifying species is also given in Natural England technical information note (TIN) 139 (Natural England, 2012) for little tern, TIN 135 (Natural England, 2012) for sandwich tern and in the SPA Review (Stroud et al, 2001) for turnstone and purple sandpiper.

#### 3.1.2 Advice for SAC's

Durham Coast SAC and Castle Eden Dene SAC are not classed as European Marine Sites, and, therefore, do not require Regulation 33 or 35 Advice to be published.

Natural England has published Conservation Objectives for both SAC's (Natural England, 2014). As of 28/05/2017, the Natural England website stated that Supplementary Advice to support the Conservation Objectives was not currently available for either site.

More detail on vulnerability of qualifying features is given in a Habitats Regulations Assessment Hartlepool Local Plan Publication Document December 2016.

#### 3.1.3 SSSI condition assessment

Natural England Condition Assessments for SSSI units are undertaken to inform both national and European reporting requirements. Reference to condition assessments is recommended in HRA guidelines (Tyldesley & Chapman, 2013) as providing important information at site level which provides essential context to Habitats Regulations assessment.

## 3.2 Ecology and sensitivity of SPA qualifying species

### 3.2.1 Teesmouth and Cleveland Coast SPA

#### Little tern

Key habitat features for little tern are sandy beaches and shallow inshore waters.

Little tern breed in a colony on the beach at Crimdon Dene 700 m to the east of the site. Little tern forage in shallow inshore waters for small surface dwelling marine fish, crustaceans and other invertebrates. Their foraging range is described in TIN139 as being usually less than 1 km from the colony, with a maximum recorded distance of 11 km. Key sensitivities include illegal persecution and trampling of eggs and young chicks, human disturbance, and predation by mammals and birds at breeding sites.

#### Sandwich tern

Key habitat features for sandwich tern are shallow inshore waters and intertidal sandflats and mudflats.

Sandwich terns forage in shallow inshore waters and the outer reaches of estuaries where they plunge dive for small to medium sized fish, particularly sand eels, herring and sprat. Their foraging range is described in TIN135 as averaging 49 km with a maximum recorded of 54 km. Although no specific advice is given within the Regulation 33 advice, key sensitivities are likely to include human disturbance while foraging and any impacts on the food resource.

### Knot

Key habitat features for knot are rocky shore and intertidal sandflat and mudflat.

Mussel *Mytilus edulis* rich rocky shore habitats present around Hartlepool Headland/ North Sands, South Gare, Coatham and Redcar Rocks, and Seaton Snook, provide a vital food and roosting resource for overwintering knot. While Intertidal mudflats around Seal Sands and Hartlepool North Sands provide invertebrate foraging habitat as well as higher tidal roost sites. Key sensitivities include human disturbance of roosting and foraging sites, and maintenance of food resources.

### Redshank

Key habitat features for redshank are intertidal sandflats and mudflats and saltmarsh with the sheltered invertebrate rich mudflats around Seal Sands, North Tees Mudflats and Greatham Creek being of prime importance for redshank.

Saltmarsh habitat around the margins of Greatham Creek and within Seal Sands provides roosting opportunity for redshank. Key sensitivities given in the Regulation 33 advice are the same as for knot.

### Ringed plover

A fairly common breeding wader of shingle and other beaches, plus islands and inland gravel pits in places.

Common in winter and during migration in similar areas, being replaced seasonally by members of the same species throughout the year. Although no specific advice is given within the Regulation 33 advice key sensitivities are likely to be the same as for knot and redshank.

## **3.2.2 Northumbria Coast SPA**

### Little tern

Little tern are listed as a breeding species within the Northumbria Coast SPA, however, the nearest breeding colony within the SPA is at Beadnell Bay in Northumberland, which is at an adequate distant that no impacts are expected from the proposed development. This species is, therefore, not considered further in this document.

### Purple sandpiper

Key habitat features for purple sandpiper are rocky shores, and artificial high tide roost sites.

Purple sandpiper forage almost exclusively on rocky shore habitats, sometimes foraging in rotting seaweed on the strand line. They roost on offshore reefs and the mainland shore, with artificial structures such as River Tyne South Pier and Seaham Harbour particularly important. Purple sandpiper have not, however, been recorded within the closest section of the SPA to the Site. Key sensitivities include human disturbance of roosting and foraging sites; maintenance of food resources in rocky shore habitats; the maintenance of short or bare vegetation on roost sites; and maintenance of open sightlines (>200 m) from roost sites.

### Turnstone

Turnstone have similar habitat requirements to purple sandpiper, extending to a wider range of habitats and with a wider range of food preferences. They feed more frequently on the strandline, so are less exclusively confined to rocky shores, and roost on the mainland shore, the closest records of turnstone occurring within the SPA are at Blackhall rocks, which is not as easily accessible to people as the section of beach at Crimdon Dene. Key sensitivities given in the Regulation 33 advice are the same as for purple sandpiper.

## **3.2.3 SSSI condition assessments**

There are three SSSI units within close proximity to the Site, Durham Coast SSSI – Crimdon Park- Hart Warren (042), Durham Coast SSSI - Blackhall – Crimdon Park (038) and Tees and Hartlepool Foreshore and Wetlands SSSI – Hartlepool North Sands and Headland (0001). Both units within the Durham Coast SSSI are described as in 'favourable' condition with Tees and Hartlepool Wetland SSSI unit described as 'unfavourable – declining'.

Crimdon Park- Hart Warren was described by Natural England as follows, following an assessment visit in July 2009:

*'Good structure in place. Relatively small unit so 2 stops done to take in strand, embryonic/mobile and fixed dune. Strandline was extensive in parts. small areas of bare ground present within limits, small amount of negative indicators (ragwort). There was no increase in human factors - pre-existing levels of access maintained looking at evidence of paths. Atriplex spp present on the strandline. Mobile dunes Leymus arenarius present. Fixed dune supported a number of typical species - Carex arenia, Ononis repens, Plantago lanceolata, Hypochaeris radicata, Arrhenatherum elatius.'*

Blackhall – Crimdon Park was described as follows, again based on a July 2009 site visit:

*'Some rock falls and several slumps but these are long established with pioneer vegetation established on many of them. The vegetation does not obscure any features of interest. There is some debris and litter on the beach and some remains of bonfires. It is a popular section of beach. No new engineering works were evident. Man-made excavation at the base of the cliff. Vegetation spread south from the base of Blue House Gill - Balsam, Spear thistle, nettle.'*

Hartlepool North Sands and Headland was described as follows, based on a site visit in March 2014:

*'There has been a significant decline in the population of Sanderling. The latest WeBS Alerts analysis for Teesmouth and Cleveland Coast SPA suggests that site-specific factors are driving the decline. There has also been a significant decline in the population of Purple Sandpiper. There is no WeBS Alert analysis for Teesmouth and Cleveland Coast SPA, but there is one for Northumbria Coast SPA. It is not clear whether the decline in Purple Sandpiper trend is following the regional and national trends (or it is more or less severe). Further investigation is required.'*

### 3.3 Ecology and sensitivity of SAC qualifying habitats

#### 3.3.1 Vegetated sea cliffs

Key vulnerabilities reported in the Hartlepool study include coastal erosion, which is a natural process which helps maintain favourable condition, but which can lead to 'coastal squeeze' where cliffs retreat into areas unsuitable for development of new areas of calcareous grassland. Coastal erosion can also lead to a demand for hard coastal defences which could further damage qualifying features. Other vulnerabilities include damage from recreational activities on clifftop grassland (trampling and dog-fowling); inappropriate grazing levels; conversion of pasture land to intensive arable uses; and development close to cliff edges leading to a demand for coastal defences.

#### 3.3.2 Durham SAC – SSSI unit condition assessment

There is one SSSI unit within close proximity to the Site, Durham Coast SSSI – NNR Management Compartment 12 (041), located at a distance of 1.1 km from the Site at its nearest point, which was described as unfavourable recovering following the last site visit by Natural England in August 2009. No further information as to the condition of the SSSI unit is given.

#### 3.3.3 Taxus baccata woodland

The SAC lies over 5 km from the site and is not directly connected to it via transport or other links. The HRA of the Hartlepool Local Plan indicates that an increase in road traffic and associated pollution might potentially have an adverse effect on site integrity if it were of sufficient magnitude to affect the yew woodlands. Housing and increased recreational disturbance is also a potential issue, although site visitors are encouraged and managed on site.

## 4.0 Ecological impacts and likely significant effect

### 4.1 Description of development

It is understood that the Site is proposed for a residential development of up to 50 dwellings, with associated hard and soft landscaping, however, the proposals have not yet been finalised. An illustrative masterplan of the site is provided as figure 2.

Based on an average Hartlepool dwelling occupancy of 2.3, this would give a population increase of approximately 115 people assuming the maximum 50 residences were built. Given the likely type of housing to be built, this figure is considered to be representative.

### 4.2 Summary of Site ecology

#### 4.2.1 Local ecological context

The Site is centred at Ordnance Survey (OS) grid reference NZ 48261 36206, to the north of Hartlepool in County Durham.

To the north of the Site is arable land, to the east beyond Hart to Haswell Walkway LNR and Local Wildlife Site (LWS) and the east coast mainline railway line, is further arable land, whilst to the west beyond Easington Road is 'Seaview Residential Park', and to the south is residential development on the northern edge of Hartlepool.

#### 4.2.2 Potential to support qualifying features of European conservation sites

The Site's potential to support SPA qualifying features and Ramsar site noteworthy fauna was assessed by Delta Simons during a site visit in April 2017.

The Site covers an area of 2.2 ha and comprises a field of ploughed land with a margin of semi-improved neutral grassland to the south and west, beyond which was a wide strip of dense scrub up to the southern Site boundary, and broadleaved plantation woodland to the western boundary. Along the northern and eastern boundaries were hedgerows, whilst the majority of the southern boundary was defined by a stream. The Site is predominantly flat and did not support standing water at the time of the survey (fig. 3).

Three lapwing were present on the Site during the survey, exhibiting territorial behaviour associated with breeding. However, given the small area of suitable habitat for this species, any direct impacts through habitat loss are considered to be limited. No other usage was recorded of the Site by SPA qualifying features, and habitats within the Site were not suitable for use by tern species (shallow inshore waters and mudflats), knot (rocky shore and mudflat), redshank (intertidal mudflats and saltmarsh), purple sandpiper (a rocky foreshore specialist) or turnstone (a species rarely found outside of rocky foreshore and strand-line habitats).

In terms of Habitats Regulations Assessment, it is of particular relevance to note that the site **is not functionally linked to the SPAs**, and development of the Site would not cause direct disturbance of features for which the SPAs were classified.

### 4.3 Screening for likely significant effects

#### 4.3.1 Northumbrian Coast SPA and Teesmouth and Cleveland Coast SPA

The following screening matrix is based on the vulnerabilities listed in Appendix A from the Regulation 33 Advice sheets.

**Table 1 Screening matrix for likely significant effects**

C=construction; O=operational phases of development

Feature	Little Tern		Purple Sandpiper		Turnstone		Knot		Redshank		Sandwich Tern	
	C	O	C	O	C	O	C	O	C	O	C	O
<b>Impact</b>												
<b>Physical loss</b>												
Removal (e.g. harvesting, land claim, coastal defence)	x	x	x	x	x	x	x	x	x	x	x	x
Smothering (e.g. artificial structures, disposal of dredge spoil)	x	x	x	x	x	x	x	x	x	x	x	x
<b>Physical damage</b>												
Siltation (e.g. run-off, channel dredging, outfalls)	x	x	x	x	x	x	x	x	x	x	x	x
Abrasion (e.g. boating, anchoring, trampling)	x	v <sup>3</sup>	x	x	x	x	x	x	x	x	x	x
Selective extraction (e.g. aggregate dredging, entanglement)	x	x	x	x	x	x	x	x	x	x	x	x
<b>Non-physical disturbance</b>												
Noise (e.g. boat activity)	x	x	x	x	x	x	x	x	x	x	x	x

<sup>3</sup> Based on potential increased recreational activity on proximal areas of coast; however, wardening scheme is likely to mitigate any increase in visitor numbers

Feature	Little Tern		Purple Sandpiper		Turnstone		Knot		Redshank		Sandwich Tern	
	C	O	C	O	C	O	C	O	C	O	C	O
Visual presence (e.g. recreational activity)	x	√ <sup>4</sup>	x	x <sup>5</sup>	x	x <sup>6</sup>	x	x <sup>7</sup>	x	x <sup>8</sup>	x	x
<b>Toxic contamination</b>												
Introduction of synthetic compounds (e.g. pesticides, TBT, PCBs)	x	x	x	x	x	x	x	x	x	x	x	x
Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons)	x <sup>9</sup>	x	x	x	x	x	x	x	x	x	x	x
Introduction of radionuclides	x	x	x	x	x	x	x	x	x	x	x	x
<b>Non-toxic contamination</b>												
Changes in nutrient loading (e.g. agricultural run-off, outfalls)	x	x	x	x	x	x	x	x	x	x	x	x
Changes in organic loading (e.g. mariculture, outfalls)	x <sup>10</sup>	x	x	x	x	x	x	x	x	x	x	x

<sup>4</sup> Based on potential increased recreational activity on proximal areas of coast; however, wardening scheme is likely to mitigate any increase in visitor numbers

<sup>5</sup> Effects considered unlikely based on distance of project from nearest foraging / roosting area

<sup>6</sup> Effects considered unlikely based on distance of project from nearest foraging / roosting area

<sup>7</sup> Effects considered unlikely based on distance of project from nearest foraging / roosting area

<sup>8</sup> Effects considered unlikely based on distance of project from nearest foraging / roosting area

<sup>9</sup> Assuming incorporated pollution prevention measures in Construction Environmental Management Plan

<sup>10</sup> Assuming diversion and treatment of foul water via sewerage system with no overload of treatment capacity

Changes in thermal regime (e.g. outfalls, power stations)	x	x	x	x	x	x	x	x	x	x	x	x
Changes in turbidity (e.g. run-off, dredging)	x	x	x	x	x	x	x	x	x	x	x	x
Changes in salinity (e.g. water abstraction, outfalls)	x	x	x	x	x	x	x	x	x	x	x	x
<b>Biological disturbance</b>												
Introduction of biological pathogens	x	x	x	x	x	x	x	x	x	x	x	x
Introduction of non-native species & translocation	x	x	x	x	x	x	x	x	x	x	x	x
Selective extraction of species (e.g. bait digging, wildfowling, commercial and recreational fishing)	x	x	x	x	x	x	x	x	x	x	x	x

### 4.3.2 Durham Coast SAC

The proposed development will not result in any physical loss or damage to the SAC, and incorporated mitigation measures outlined above to prevent toxic and nutrient discharges will prevent indirect damage.

The proposed development is approximately 2 km from the SAC following the local footpath network. A public footpath runs along the top of the cliffs but outside the SAC boundary and due to the site management, trampling of sensitive cliff vegetation is minimised. Trampling impacts on intertidal areas are unlikely to be significant given the dynamic nature of this environment. The area is already well used by dog walkers and the potential adverse biological effects of dog faeces are managed by a series of Council run dog waste bins. There are a number of regularly emptied dog waste bins at the Crimdon Dene car parking area (managed by Durham County Council).

If SAC qualifying features are either inaccessible to public access, or access is well-managed in such a way as to avoid damage, then there is unlikely to be a direct pathway for marginal increases in visitor numbers to cause a likely significant effect.

### 4.3.3 Castle Eden Dene SAC

The proposed development is not ecologically connected and will not result in any physical loss or damage to the SAC. This site is within the town of Peterlee and, therefore, has a high potential for local recreational visits and indeed is promoted as a site which the public can visit and enjoy. It has clear signposting, site interpretation panels and a good network of well-maintained paths. No impact is expected on Castle Eden Dene as a consequence of the development and is, therefore, not considered further in this report.

## 4.4 Likely significant effect of recreational impacts

### 4.4.1 Definition of likely significant effect

For an effect to be 'likely', it is sufficient that it should be a possible effect, whose occurrence cannot be excluded on the basis of objective information. This is supported by European case law, in particular the Waddenzee judgement (case C- 127/02).

A 'significant' effect is one that would undermine the conservation objectives of the European site; there should be a causal link between the plan or project and the qualifying features of the site, which could undermine its conservation objectives (Tyldesley & Chapman, 2013). This excludes effects which could be described as 'de minimis' or 'inconsequential', and which would not be capable of undermining the conservation objectives of the site.

### 4.4.2 Potential effects on little tern

A potential impact pathway exists in the form of a net increase in human population as a result of the development. This may result in increased recreational pressure on the SPA, through increasing the frequency and duration of disturbance events on the breeding colony.

The nesting site is fenced off from the public between April and September every year and guarded by a warden and volunteers. A secondary post and wire fence has been erected in some years in order to encourage walkers not to hug the enclosure.

Although human disturbance (not defined) is listed as a cause of breeding success fluctuation, Hartlepool BC makes the presumption that there is no correlation between little tern breeding success and recreational disturbance as the former is relatively constant while the latter is highly variable. Other ecologically limiting factors must be involved. The little tern colony lies between the Crimdon Dene car park and North Sands, meaning that anyone intending to walk south must pass close to the enclosure. It is assessed that any increase in the frequency of people taking this route (caused by housing development) will not cause an additional impact, i.e., maximum disturbance has already been reached at a lower level of usage. Hartlepool BC makes this assessment on the assumption that the colony is annually enclosed and this is a management action that could be part of a suite of actions funded through Planning Obligations (HBC, 2016).

### 4.4.3 Likely significant effect of Easington Road development

The plan-level HRA for the Hartlepool Local Plan (HBC, 2016) calculated the projected disturbance increase of new housing using a calculation of projected increased population level in the next 15 years as a consequence

of the plan, compared with existing population within a defined catchment area within 15 km of the coast, to give a percentage increase in visitor numbers. The population of Hartlepool is 92,670 (2013). The Plan allows for 6,199 new dwellings. The average number of people per household in the Tees Valley (2013) is 2.3 and, therefore, there will be approximately 14,258 people living in the 6,199 new dwellings when they are all occupied. The HBC Strategic Housing Market Assessment 2015 says that 80.1% of new housing take-up will be Hartlepool people re-locating (rather than population growth). This alters the initial precautionary principal position of 100% population growth. If 80.1% of houses are occupied through re-location, this equates to approximately 11,414 people. This gives a (19.9%) growth figure of 2,836 people. This is a Hartlepool population increase of 2,836, from 92,670 to 95,506 – an increase of 3.06%.

Based on these statistics a population increase of 2,836 will lead to 624 additional adults walking for 30 minutes every four weeks (22% of the population). This does not account for children. It is reasonable to assume that this does not include dog exercising. With household dog ownership at 24%, then 1,488 of the 6,199 new households will own one or more dogs. Of these, 80.1% (1,191) of will be re-locations and 19.9% (296) will be new. This suggests that there would be approximately 296 new dog-owning households.

Based on the size of the current development of up to 50 dwellings and applying the average household size of 2.3, a population increase of 115 people is expected. If 80.1% of the houses are occupied through re-location, this equates to 92 people. This leaves a growth figure of 23.

Based on these statistics a population increase of 23 will lead to five additional adults walking for 30 minutes every four weeks, with an anticipated increase in dog owning homes of six.

As a result of the size of the development, no significant effect as a result of recreational activities is expected.

#### 4.5 Likely significant effect in the absence of mitigation

The success of the breeding colony of little tern at Crimdon beach is largely down to the site protection measures implemented during the breeding season. Without these measures disturbance by recreational users including dog walkers would increase disturbance to the colony, including an increase in trampling of eggs and young. No significant effect is expected on the remaining features of the SPAs due to their distance from the Site.

Again, impacts on the Durham Coast SAC are currently mitigated by the provision of paths, interpretation boards and dog bins. With the small-scale nature of the development and the presence of mitigation measures no likely significant effect is expected as a result of the proposed development.

#### 4.6 In-combination effects and likely significant effect

Due to the small-scale nature of the development, and as there will be no significant effects resulting from it as a standalone development, it is considered that there will be no cumulative, or contribution to in combination, effects on the designated sites as a result of the proposed development.

#### 4.7 Incorporated mitigation

##### 4.7.1 Requirement for incorporation of mitigation measures

In order to prevent a likely significant effect on the SPA, it is necessary to incorporate adequate and appropriate mitigation measures into the project proposals.

It is important to recognise that mitigation measures can be incorporated at the screening stage of an assessment, and that this can be done as part of an iterative process in order to allow the assessment to conclude that there would be no likely significant effect. This is set out in current professional guidance on the HRA process (Tyldesley & Chapman, 2013; section E.9.1).

Currently no likely significant effect is expected on the little tern colony. However, this is reliant on continued funding of the wardening scheme, fencing of the colony and increasing public awareness through interpretation panels and leaflets.

HBC Planning Policy QP1 – states that: *'The (Plan Level) Habitat Regulations Assessment (HRA) stage 1 screening identified a likely significant adverse effect on the Teesmouth and Cleveland Coast SPA and Ramsar European Protected Site. This adverse impact would be caused through recreational disturbance of birds, which*

*are the interest features of the site, including a breeding colony of little terns in the summer and shorebirds in the autumn, winter and spring. The HRA established that at least some new residents of housing developments would visit the SPA/ Ramsar and that these additional visits would cause harm. Each housing development is responsible for mitigating potential harm and developers can ensure this through Planning Obligations by providing an adequate provision of Suitable Alternative Green Space (SANGS) to absorb new recreation, such as daily dog walking, on site and/or by providing a financial contribution to be spent on managing recreational pressures on the European Protected Site'.*

It is unlikely that suitable SANG will be provided on-Site given the available area of land, and it is, therefore, considered reasonable that a financial contribution to the protection of the little tern colony is made instead.

#### **4.7.2 Implementation of mitigation measures**

Mitigation measures will be secured by appropriate legal agreements (e.g. Section 106 Agreement) as appropriate.

## 5.0 Conclusions and recommendations

### 5.1 Likely significant effect

The development has been considered in terms of its scale, nature and location in relation to European and internationally designated sites. The ecological requirements and key vulnerabilities of qualifying features have been considered, and assessed against the potential ecological impacts of the development to determine whether there would be a likely significant effect.

The conclusion of the assessment suggest that the Competent Authority could safely conclude that there is no likely significant effect on the qualifying features of the Natura 2000 Sites. However, this takes into account current levels of protection of the qualifying feature (little tern). To allow for continued protection of the breeding colony it is advised that a contribution is made to the wardening of the colony in future years.

### 5.2 Recommendations

Should HBC agree with this conclusion of 'no likely significant effect' with respect to Natura 2000 sites, this document could provide the basis for their completion of a Stage 1 Habitats Regulations Assessment with respect to the Proposed Development. In these circumstances, it would not be necessary to carry out a Stage 2 Appropriate Assessment under Regulation 61 of the Habitats Regulations, to assess effect on site integrity. In accordance with paragraph 119 of the National Planning Policy Framework (NPPF) the Proposed Development can be considered to be sustainable development with respect to the Birds and Habitats Directive.

## 6.0 Disclaimer

The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free of Bats or other protected species.

The behaviour of animals can be unpredictable and may not conform to characteristics recorded in current scientific literature. This Report, therefore, cannot predict with absolute certainty that animal species will or will not occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.

No part of the survey included an assessment of the materials and conditions of any buildings. No part of the survey included an asbestos assessment, nor did it represent an appraisal of other deleterious materials or hazardous substances.

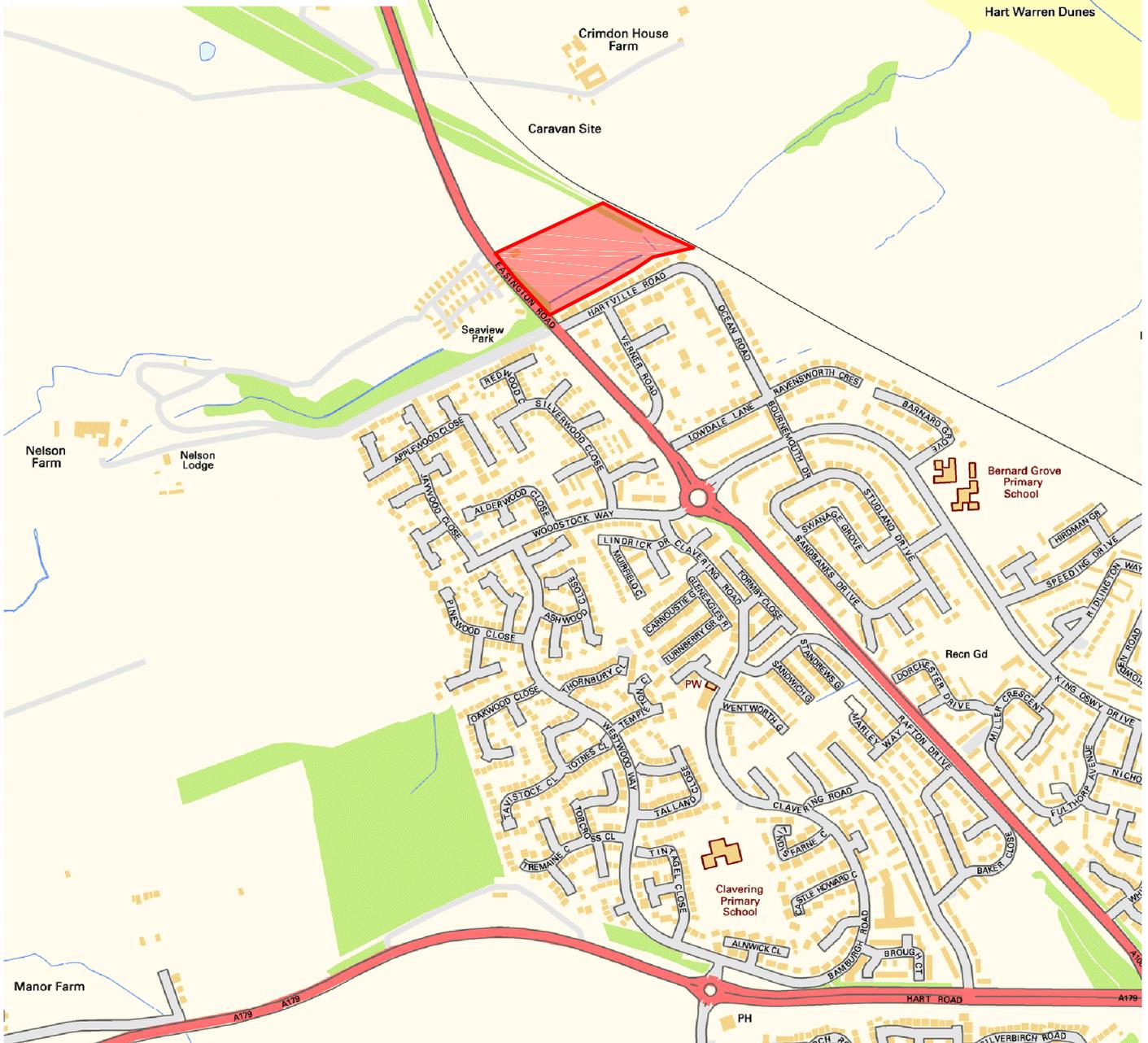
This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

## Figure 1 - Site Location Map



**LEGEND**

 Site Boundary



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TITLE:  
**Site Location Map**  
 Land off Easington Road  
 Hartlepool

DRAWN BY: EN	SCALE: To Scale @ A4
CHECKED BY: SC	REVISION: 1
DATE: 02 June 2017	

PROJECT NO: <b>17-0153.02</b>
FIGURE NO: <b>1</b>

## Figure 2 - Indicative Site Layout



- PRIMARY VEHICLE ROUTES
  - VEHICLE ROUTES
  - PROPOSED RESIDENTIAL DEVELOPMENT
  - REAR BOUNDARIES TO DWELLINGS
  - EXISTING HEDGEROWS / TREES TO BE RETAINED
  - KEY NODAL SPACES WITHIN DEVELOPMENT
  - KEY DWELLINGS IN PROMINENT POSITIONS
  - PEDESTRIAN ROUTES
- 1 PRIMARY VEHICLE ACCESS POINTS FROM EASINGTON ROAD
  - 2 EXISTING TREES ALONG THE SITE BOUNDARY
  - 3 LARGE AREA OF OPEN SPACE INCLUDING STORAGE TANK, ACCESS AND POSSIBLE PUMP STATION
  - 4 KEY NODES AT IMPORTANT JUNCTIONS
  - 5 POTENTIAL CONNECTION TO EXISTING PEDESTRIAN ROUTE
  - 6 SPLIT LEVEL DWELLINGS REQUIRED TO MITIGATE CHANGE IN LEVELS
  - 7 EXISTING PRIMARY HIGHWAY CONNECTS TO HARTLEPOOL TOWN CENTRE
  - 8 HART TO HARSWELL LOCAL NATURE RESERVE WITH PEDESTRIAN ROUTES TO COASTLINE
  - 9 PROPOSED PLANTED BUFFER TO CREATE DEFENSIBLE BOUNDARY

**DEVELOPMENT SUMMARY**  
 NETT DEVELOPABLE AREA = APPROX 3.22 ACRES / 1.30 HECTARES  
 @ 35 DPH, NUMBER OF DWELLINGS = 45

Site Plan Provided by Client



TITLE:  
 Indicative Site Layout  
 Land off Easington Road  
 Hartlepool

DRAWN BY: EN	SCALE: Not to Scale
CHECKED BY: SC	REVISION: 1
DATE: 02 June 2017	

PROJECT NO:  
17-0153.02  
 FIGURE NO:  
2

## Figure 3 - Extended Phase 1 Habitat Plan



**LEGEND**

	Site Boundary
	Broadleaved Plantation Woodland
	Dense Scrub
	Semi - Improved Neutral Grassland
	Running Water
	Arable
	Intact Species - Poor Hedgerow
	Defunct Species - Poor Hedgerow
	Fence
	Building
	Hardstanding
	Target Note

Site Plan Provided by Client



TITLE:  
 Extended Phase 1 Habitat Plan  
 Land off Easington Road  
 Hartlepool

DRAWN BY: EN	SCALE: Not to Scale	PROJECT NO: 17-0153.02
CHECKED BY: SC	REVISION: 1	FIGURE NO: 3
DATE: 02 June 2017		

## Appendix A – European Regulation 33 / 35 Advice

Assessment of the relative vulnerability of interest features and sub-features of Northumbria Coast European Marine site to different categories of operations (from English Nature, 2000).

Categories of operations which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 species (i.e. little tern)		Internationally important populations of regularly occurring migratory species (i.e. purple sandpiper, turnstone)	
	Sandy beaches	Shallow inshore waters	Rocky shore with associated boulder and cobble beaches	Artificial high tide roost sites
<b>Physical Loss</b> Removal (e.g. harvesting, land claim, coastal defence)	****	****	****	****
Smothering (e.g. artificial structures, disposal of dredge spoil)	****	***	****	**
<b>Physical Damage</b> Siltation (e.g. run-off, channel dredging, outfalls)	**	**	**	.
Abrasion (e.g. boating, anchoring, trampling)	.	**	***	.
Selective extraction (e.g. aggregate dredging)	***	**	***	.
<b>Non-physical disturbance</b>				
Noise (e.g. boat activity)	***	**	***	***
Visual presence (e.g. recreational activity)	***	.	***	***
<b>Toxic contamination</b> Introduction of synthetic compounds (e.g. pesticides, TBT, PCBs)	***	***	***	**
Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons)	***	***	***	***
Introduction of radionuclides	**	**	**	**
<b>Non-toxic contamination</b> Changes in nutrient loading (e.g. agricultural run-off, outfalls)	**	***	***	.

Assessment of the relative vulnerability of interest features and sub-features of Teesmouth and Cleveland Coast European Marine site to different categories of operations (from English Nature, 2000).

• No detectable sensitivity

Categories of operations which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 species			Internationally important assemblage of waterbirds including the internationally important populations of regularly occurring migratory species		
	Sand and shingle	Intertidal sandflat and mudflat	Coastal waters	Rocky shores	Intertidal sandflat and mudflat	Saltmarsh
<b>Physical Loss</b> Removal (e.g. harvesting, land claim, coastal defence)	****	****	****	****	****	****
Smothering (e.g. artificial structures, disposal of dredge spoil)	***	***	**	***	***	***
<b>Physical Damage</b> Siltation (e.g. run-off, channel dredging, outfalls)	.	.	**	**	**	**
Abrasion (e.g. boating, anchoring, trampling)	****	****	**	***	**	***
Selective extraction (e.g. aggregate dredging, entanglement)	****	****	**	***	**	**
<b>Non-physical disturbance</b> Noise (e.g. boat activity)	****	****	**	****	****	****
Visual presence (e.g. recreational activity)	****	****	**	****	****	****
<b>Toxic contamination</b> Introduction of synthetic compounds (e.g. pesticides, TBT, PCBs)	.	.	***	***	***	***

Categories of operations which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 species			Internationally important assemblage of waterbirds including the internationally important populations of regularly occurring migratory species		
	Sand and shingle	Intertidal sandflat and mudflat	Coastal waters	Rocky shores	Intertidal sandflat and mudflat	Saltmarsh
<b>Toxic contamination</b> Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons)	•	•	•••	•••	•••	•••
Introduction of radionuclides	•	•	••	••	••	••
<b>Non-toxic contamination</b> Changes in nutrient loading (e.g. agricultural run-off, outfalls)	•	•	••	•••	•••	••
Changes in organic loading (e.g. mariculture, outfalls)	•	•	••	•••	•••	••
Changes in thermal regime (e.g. outfalls, power stations)	•	•	•	•	•	•
Changes in turbidity (e.g. run-off, dredging)	•	•	•••	•	•	•
Changes in salinity (e.g. water abstraction, outfalls)	•	•	••	••	••	•
<b>Biological disturbance</b> Introduction of microbial pathogens	•	•	••	••	••	•
Introduction of non-native species & translocation	•	•	••	•••	•••	•••
Selective extraction of species (e.g. bait digging, wildfowling, commercial & recreational fishing)	•	•	•••	•••	•••	•••

## Appendix B – References

## References

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