



Inner Thames Estuary Feasibility Study

Response to Airports Commission Call for Evidence

**The Mayor of London's Submission:
Supporting technical documents**

23 May 2014

Title: Ecology Desk Study Part A: Designated Sites (2013)

Author: Atkins

Purpose of paper:

To identify the ecological constraints (designated sites) that could be affected by the development of a new Hub airport. The review considers the constraints associated with: the airport, the road infrastructure required and the rail infrastructure required.

Key messages:

- Produced in 2013 to support the Mayor of London's submissions to the Airports Commission: Outline proposals for long term aviation capacity.

Hub for London

Ecology Desk Study – Part A: Designated Sites - Technical Note

Transport for London

September 2013

ATKINS














Notice

This document and its contents have been prepared and are intended solely for Transport for London's information and use in relation to The Hub Airport Study.

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 30 pages including the cover.

Document history

Job number: 313			Document ref: 5120377			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
01	First draft for Client comment	Sarah Lass/ Danny Thomas 	Suzanne Glencross 	John Box 	Paul J Taylor 	07/06/13
02	Second draft for Client comment	Sarah Lass/ 	Suzanne Glencross 	John Box  Claire Wansbury 		17/07/13
03	Final	Sarah Lass/ 	Suzanne Glencross 	John Box  Claire Wansbury 	Paul J Taylor 	13/09/13

Client signoff

Client	Transport for London (TFL)
Project	TFL Hub Airport Study
Document title	Ecology Desk Study – Designated Sites
Job no.	5120377
Copy no.	
Document reference	313

Table of contents

Chapter	Pages
1. Introduction	4
2. The Airport	5
3. Road Infrastructure	13
4. Rail Infrastructure	24

1. Introduction

This desk study review has been produced in order to identify the ecological constraints (designated sites) that could be affected by the development of a new Hub airport at one of three proposed sites within the south-east of England.

Site locations are as follows:

- Inner Estuary: Isle of Grain;
- Outer Estuary; and
- Stansted.

This review considers, for each site, the constraints associated with: the airport, the road infrastructure required; and the rail infrastructure required. This includes:

Airport site

- Special Protection Areas (SPA), Special Areas of Conservation (SAC), Sites of Community Importance (SCI) and Wetlands of International Importance (Ramsar sites) within 20km of the airport footprint; and
- Sites of Special Scientific Interest (SSSI) within 2km of the airport footprint.

N.B. Sites of Community Importance (SCIs) are sites that have been adopted by the European Commission as an SAC but not yet formally designated by the government of each country.

Road Infrastructure

- SPA, SAC, SCI and Ramsar within 10km of the roads corridor; and
- SSSI within the footprint of the proposed road airport infrastructure (consideration of impacts limited to direct impacts only).

Rail infrastructure

- SPA, SAC, SCI and Ramsar within 10km of the rail corridor; and
- SSSI within the footprint of the proposed rail airport infrastructure (consideration of impacts limited to direct impacts only).

At this stage a detailed designs for the options or associated infrastructure is not available. This desk study has been based upon the maps provided in Figure 1, Figure 2, Figure 3 and Figure 4 and as the design progresses impacts on designated site may increase or decrease.

Information in relation to European Marine Sites and Marine Conservation Zones is included in the Ecology Desk Study – Part B: Marine and Coastal Baseline produced by ABPmer (2013).

2. The Airport

Table 1 – Special Protection Areas (SPAs) and Wetlands of International Importance (Ramsar sites) within the 20 km of the proposed airport footprint and their reasons for designation

Proposed Hub Airport Name	SPA Site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of Wetlands of International Importance (Ramsar site)	Potential Impacts
Stansted	Lee Valley	16.11 km	4.48 km ²	Over winter the area regularly supports: - Great bittern (6% GB - breeding).	Over winter the area regularly supports: - Shoveler (1%); - Gadwall (1.5%).	n/a	<ul style="list-style-type: none"> - The Lee Valley site comprises four SSSIs spaced along the valley from just downstream of Ware in Hertfordshire to Finsbury Park in London, a total distance of about 24 km. The whole site is contained within the Lee Valley Regional Park; - The Lee Valley comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits along approximately 24 km of the valley. These waterbodies support internationally important numbers of wintering gadwall and shoveler and nationally important numbers of several other bird species; - The site also contains a range of wetland and valley bottom habitats, both man-made and semi-natural, which support a diverse range of wetland fauna and flora; - Species/populations occurring at levels of international importance including species with peak counts in spring/autumn (northern shoveler) and species with peak counts in winter (gadwall). 	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Inner Estuary	Thames Estuary & Marshes	0 m	48.40 km ² (22.20 km ²)	Over winter the area regularly supports: - Hen harrier (1% GB); - Avocet (28.3% GB - breeding).	Over winter the area regularly supports: - Dunlin (2.1%); - Knot (1.4%); - Black-tailed godwit (2.4% - breeding); - Grey plover (1.7% - wintering); - Redshank (2.2% - wintering). On passage the area regularly supports: - Ringed plover (2.6% - wintering).	Over winter the area regularly supports 75,019 individuals (5 year peak 21/03/2000), including; avocet, grey plover, dunlin, knot, black-tailed godwit and redshank.	<ul style="list-style-type: none"> - Supports one endangered plant species (least lettuce) and at least 14 nationally scarce plants (bulbous foxtail, slender hare's-ear, divided sedge, saltmarsh goosefoot, sea barley, golden samphire, annual beard grass, Borrer's saltmarsh grass, stiff saltmarsh grass, one-flowered glasswort, clustered clover, sea clover, narrow-leaved eelgrass and dwarf eelgrass) of wetland habitats, the site also supports more than 20 British Red Data Book invertebrates; - Species with peak counts in winter - 45,118 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in spring/autumn (ringed plover and black-tailed godwit) and species with peak counts in winter (grey plover, red knot, redshank and dunlin). 	<ul style="list-style-type: none"> - Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage; - Loss of nationally scarce and endangered plant species; - Loss of habitat supporting British Red Data Book invertebrates; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Proposed Hub Airport Name	SPA Site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of Wetlands of International Importance (Ramsar site)	Potential Impacts
	Medway Estuary & Marshes	0 m	46.84 km ² (1.71 km ²)	Over winter the area regularly supports: - Bewick's swan (0.2% GB); - Avocet (24.7% GB - breeding). During the breeding season the area regularly supports: - Avocet (6.2% of GB breeding population); - Little tern (1.2% GB); - Common tern (0.6% GB).	Over winter the area regularly supports: - Pintail (1.2%); - Shoveler (0.8% GB); - Teal (1.3% GB); - Wigeon (1.6% GB); - Ruddy turnstone (0.9% GB - wintering); - Brent goose (1.1%); - Dunlin (1.9%); - Knot (0.2%); - Ringed plover (1.6% - wintering); - Oystercatcher (1%); - Black-tailed godwit (12.9% - breeding); - Curlew (2% - breeding); - Grey plover (2% - wintering); - Shelduck (1.5%); - Common greenshank (2.6% GB); - Redshank (2.1% - wintering).	Over winter the area regularly supports 65,496 individuals (5 year peak 01/04/1998), including; red-throated diver, great crested grebe, cormorant, Bewick's swan, Brent goose, shelduck, wigeon, teal, mallard, pintail, shoveler, common pochard, oystercatcher, avocet, ringed plover, grey plover, lapwing, knot, dunlin, black-tailed godwit, curlew, redshank, common greenshank and ruddy turnstone. During the breeding season the area regularly supports kingfisher, mallard, short-eared owl, common pochard, hen harrier, merlin, red-throated diver, cormorant and lapwing.	- Supports a number of species of rare plants and animals, including several nationally scarce plants (sea barley, curved hard-grass, annual beard-grass, Borrer's saltmarsh-grass, slender hare's-ear, sea clover, saltmarsh goose-foot, golden samphire, perennial glasswort and one-flowered glasswort) and a total of at least twelve British Red Data Book species of wetland invertebrates; - Species with peak counts in winter - 47,637 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in spring/autumn (grey plover and redshank) and species with peak counts in winter (Brent goose, shelduck, pintail, ringed plover, red knot and dunlin); - Species/populations occurring at levels of international importance identified subsequent to designation with peak counts in spring/autumn (black-tailed godwit).	- Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage; - Loss of nationally scarce plant species; - Loss of habitat supporting British Red Data Book invertebrates. - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Benfleet & Southend Marshes	1.83 km	22.51 km ²	n/a	Over winter the area regularly supports: - Brent goose (1.3%); - Dunlin (2.1% GB); - Knot (2.6%); - Ringed plover (1.3% GB); - Grey plover (2.3%)	Over winter the area regularly supports 34,789 waterfowl (5 year peak 30/06/1999), including; Brent goose, dunlin, knot, ringed plover and grey plover.	- Species with peak counts in winter - 32,867 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in spring/autumn (Brent goose) and species with peak counts in winter (grey plover and red knot); - Species/populations occurring at levels of international importance identified subsequent to designation with peak counts in spring/autumn (dunlin).	- Disturbance of bird community; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change of habitat suitability for invertebrates.
	Crouch & Roach Estuaries (Mid-Essex Coast Phase 3)	9.39 km	17.36 km ²	Over winter the area regularly supports: - Hen harrier (2.5% GB).	Over winter the area regularly supports: - Brent goose (1%).	Over winter the area regularly supports 18,607 waterfowl (5 year peak 30/06/1999), including Brent goose.	- Species with peak counts in winter – 16,970 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in winter (Brent goose).	- Disturbance of qualifying bird assemblage; - Change in habitat suitability for qualifying bird assemblages.

Proposed Hub Airport Name	SPA Site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of Wetlands of International Importance (Ramsar site)	Potential Impacts
	Foulness (Mid-Essex Coast Phase 5)	4.34 km	109.70 km ²	During the breeding season the area regularly supports: - Avocet (5.8% GB breeding); - Little tern (1% GB breeding); - Common tern (1.8% GB breeding); - Sandwich tern (2.3% GB breeding). Over winter the area regularly supports: - Hen harrier (2.5% GB); - Bar-tailed godwit (14.6% GB); - Avocet (7.9% GB).	During the breeding season the area regularly supports: - Ringed plover (1.6% GB); Over winter the area regularly supports: - Brent goose (4.4%); - Knot (11.7%); - Oystercatcher (1.3%); - Grey plover (2.5%); - Redshank (0.8%).	Over winter the area regularly supports 107,999 waterfowl (5 year peak 01/04/1998), including Brent goose, oystercatcher, avocet, grey plover, knot, bar-tailed godwit and redshank.	- This site qualifies due to the extent and diversity of saltmarsh habitat present; - Supports a number of nationally-rare and nationally-scarce plant species, and British Red Data Book invertebrates; - Site contains extensive saltmarsh habitat, with areas supporting full and representative sequences of saltmarsh plant communities covering the range of variation in Britain; - Species with peak counts in winter – 82,148 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in spring/autumn (redshank) and species with peak counts in winter (Brent goose, oystercatcher, grey plover, red knot, redshank and bar-tailed godwit).	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	The Swale	5.66 km	65.14 km ²	n/a	Over winter the area regularly supports: - Brent goose (0.7%); - Dunlin (2.3% GB); - Redshank (0.9% - wintering).	Over winter the area regularly supports 65,588 individuals (5 year peak 01/04/1998), including: Brent goose, gadwall, teal, oystercatcher, ringed plover, grey plover, dunlin, curlew and redshank. During the breeding season the area regularly supports reed warbler, teal, mallard, gadwall, ringed plover, reed bunting, coot, moorhen, oystercatcher, curlew, grey plover, shelduck, redshank and lapwing.	- Supports nationally scarce plants (saltmarsh goosefoot, hogs fennel, slender hare's-ear, small cord-grass, golden samphire, divided sedge, sea clover and sea barley) and at least 7 British Red Data Book invertebrates; - Species with peak counts in winter – 77,501 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in spring/autumn (redshank) and species with peak counts in winter (grey plover and Brent goose); - Species/populations occurring at levels of international importance identified subsequent to designation with peak counts in spring/autumn (ringed plover) and in winter (wigeon, pintail, shoveler and black-tailed godwit).	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Outer Thames Estuary	2.9 km	3797.27 km ²	Over winter the area regularly supports: - Red-throated diver (38% GB - wintering);	n/a	n/a	n/a	- Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage.
Outer Estuary	Foulness (Mid-Essex Coast Phase 5)	15.84 km	109.70 km ²	As above	As above	As above	As above	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	The Swale	8.7 km	65.14 km ²	n/a	As above	As above	As above	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Proposed Hub Airport Name	SPA Site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of Wetlands of International Importance (Ramsar site)	Potential Impacts
	Outer Thames Estuary	0 m	3797.27 km ² (55.27 km ²)	As above	n/a	n/a	n/a	<ul style="list-style-type: none"> - Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage.
	Thanet Coast & Sandwich Bay	5.59 km	18.70 km ²	During the breeding season the area regularly supports: <ul style="list-style-type: none"> - Little tern (0.3% GB breeding). Over winter the area regularly supports: <ul style="list-style-type: none"> - Golden plover (0.2%); - Ruddy turnstone (1.4%). 	Over winter the area regularly supports: <ul style="list-style-type: none"> - Ruddy turnstone (1.4%). 	n/a	<ul style="list-style-type: none"> - Supports 15 British Red Data Book wetland invertebrates; - Species/populations occurring at levels of international importance including species with peak counts in winter (ruddy turnstone). 	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in habitat suitability for qualifying bird assemblages.
	Stodmarsh	12.13 km	4.81 km ²	Over winter the area regularly supports: <ul style="list-style-type: none"> - Bittern (4% GB); - Hen harrier (1.2% GB); 	During the breeding season the area regularly supports: <ul style="list-style-type: none"> - Gadwall (0.8% GB); Over winter the area regularly supports: <ul style="list-style-type: none"> - Shoveler (1.9% GB); - Gadwall (1.8% GB). 	During the breeding season the area regularly supports sedge warbler, reed warbler, wigeon, mallard, white-fronted goose, pochard, snipe, Savi's warbler, grasshopper warbler, great crested grebe, water rail, redshank and lapwing.	<ul style="list-style-type: none"> - Six British Red Data Book wetland invertebrates; - Two nationally rare plants; - Five nationally scarce species; - A diverse assemblage of rare wetland birds. 	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in habitat suitability for qualifying bird assemblages; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Dengie (Mid-Essex Coast Phase 1)	18.09 km	31.27 km ²	Over winter the area regularly supports: <ul style="list-style-type: none"> - Hen harrier (2.5% GB); 	Over winter the area regularly supports: <ul style="list-style-type: none"> - Brent goose (0.8%); - Red knot (2.4%); - Grey plover (1.4%) 	Over winter the area regularly supports 31,454 individuals (5 year peak 01/04/1998), including: Brent goose, red knot and grey plover.	<ul style="list-style-type: none"> - This site qualifies due to the extent and diversity of saltmarsh habitat present; - Supports a number of nationally-scarce plant species and British Red Data Book invertebrates; - Site contains extensive saltmarsh habitat, with areas supporting full and representative sequences of saltmarsh plant communities covering the range of variation in Britain; - Species with peak counts in winter – 43,828 waterfowl (5 year peak mean 1998/99-2002/03); - Species/populations occurring at levels of international importance including species with peak counts in winter (Brent goose, grey plover, red knot). 	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in habitat suitability for qualifying bird assemblages; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Table 2 – Special Areas of Conservation (SACs) and Sites of Community Importance (SCI) within the 20 km of the proposed airport footprint and their reasons for designation

Proposed Hub Airport Name	SAC/SCI	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
Stansted	n/a					
Inner Estuary	Essex Estuaries	4.26 km	461.41 km ²	Annex I qualifying habitats:	Annex I habitats present:	<ul style="list-style-type: none"> - Change in quality of habitats

Proposed Hub Airport Name	SAC/SCI	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
				<ul style="list-style-type: none"> - Estuaries (40.93%); - Mudflats and Sandflats not covered by seawater at low tide (51.16%); - <i>Salicornia</i> and other annuals colonising mud and sand (0.72%); - <i>Spartina</i> swards (<i>Spartinion maritimae</i>) (0.04%); - Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) (7.37%); - Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) (0.05%). 	<ul style="list-style-type: none"> - Sandbanks which are slightly covered by sea water all the time (3.89%). <p>Annex II species present:</p> <ul style="list-style-type: none"> - Allis shad; - Twait shad; - Harbour seal. 	as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	North Downs Woodlands	14.56 km	2.86 km ²	<p>Annex I qualifying habitats:</p> <ul style="list-style-type: none"> - <i>Asperulo Fagetum</i> beech forests (18.4%); - <i>Taxus baccata</i> woods of the British Isles (22.9%). 	<p>Annex I habitats present:</p> <ul style="list-style-type: none"> - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) (14%). 	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Peters Pit	14.27 km	0.28 km ²	<p>Annex II qualifying species:</p> <ul style="list-style-type: none"> - Great crested newt. 	<p>Annex I habitats present:</p> <ul style="list-style-type: none"> - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) (28.3%). 	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Queendown Warren	11.67	0.14 km ²	<p>Annex I qualifying habitats:</p> <ul style="list-style-type: none"> - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) (76.96%). 	<p>Annex I habitats present:</p> <ul style="list-style-type: none"> - <i>Asperulo-Fagetum</i> beech forests (10.43%). 	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Outer Estuary	Margate & Long Sands SCI	0 m	649.14 km ² (19.54 km ²)	<p>Annex I qualifying habitats:</p> <ul style="list-style-type: none"> - Sandbanks which are slightly covered by sea water all the time (63.19%) 	<p>Annex I habitats present:</p> <ul style="list-style-type: none"> - Mudflats and sandflats not covered by seawater at low tide (4.95%). 	<ul style="list-style-type: none"> - Loss of notified habitat; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime.
	Thanet Coast	6.87 km	28.04 km ²	<p>Annex I qualifying habitats:</p> <ul style="list-style-type: none"> - Reefs (32%); - Submerged or partially submerged sea caves (1%). 	<p>Annex I habitats present</p> <ul style="list-style-type: none"> - Sandbanks which are slightly covered by sea water all the time (58%); - Mudflats and sandflats not covered by seawater at low tide (10%). 	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Blean Complex	9.99 km	5.21 km ²	<p>Annex I qualifying habitats:</p> <ul style="list-style-type: none"> - Sub-Atlantic and medio-European oak or oak-hornbeam forests of the <i>Carpinion betuli</i> (20%). 	<p>Annex I habitats present:</p> <ul style="list-style-type: none"> - Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer (<i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i>) (18.4%). <p>Annex II species present:</p> <ul style="list-style-type: none"> - Great crested newt. 	<ul style="list-style-type: none"> - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change in habitat suitability for great crested newts;
	Sandwich Bay	17.34 km	11.38 km ²	<p>Annex I qualifying habitats:</p> <ul style="list-style-type: none"> - Embryonic shifting dunes (0.5%); - Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (“white dunes”) (0.8%); - Fixed dunes with herbaceous vegetation (“grey dunes”) (19.7%); - Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) (1%). 	<p>Annex I habitats present:</p> <ul style="list-style-type: none"> - Humid dune slacks (0.7%). <p>Annex II species present:</p> <ul style="list-style-type: none"> - Great crested newt. 	<ul style="list-style-type: none"> - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change in habitat suitability for great crested newts;

Proposed Hub Airport Name	SAC/SCI	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
	Stodmarsh	12.03 km	5.65 km ²	Annex II qualifying species: - Desmoulin`s whorl snail <i>Vertigo moulinsiana</i> .	Annex I habitats present: - Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) (0.25%).	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Table 3 – SSSI within 2 km of the proposed airport footprints and their reasons for designation.

Proposed Hub Airport Name	SSSI site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
Stansted	Elsenham Woods	0.35 km	0.45 km ²	<ul style="list-style-type: none">- Main habitat type - broadleaved, mixed and yew woodland;- Comprises of Eastend Wood and Pledgdon Wood;- Situated on the chalky boulder clay of north-west Essex;- Support diverse assemblage of species;- Pledgdon Wood contains one of only two known Essex locations for wych elm coppice;- Site also includes a number of damp grassy rides and small woodland ponds which form valuable additional habitat for invertebrates and birds.	<ul style="list-style-type: none">- Oxlip – nationally uncommon	<ul style="list-style-type: none">- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;- Disturbance to birds through noise, vibration and lighting.
	High Wood, Dunmow	0.02 km	0.42 km ²	<ul style="list-style-type: none">- Main habitat type - broadleaved, mixed and yew woodland;- Wet ash-maple and pedunculate oak-hornbeam wood developed over chalky boulder clay and Loess on the main watershed between the Rivers Roding and Chelmer, in northwest Essex;- Formed of ancient woodland and a smaller area of secondary woodland;- Isolated stands of plateau alder dominated by <i>Alnus glutinosa</i>, a woodland type which is scarce in Essex;- The damp woodland rides support a number of species of sedge;- The rides also provide valuable additional habitat for invertebrates and birds.	<ul style="list-style-type: none">- Pale sedge – uncommon in Essex	<ul style="list-style-type: none">- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;- Disturbance to birds through noise, vibration and lighting.
	Hatfield Forest	0.15 km	4.03 km ²	<ul style="list-style-type: none">- Hatfield Forest is unique in being the last small medieval Royal Forest to remain virtually intact in character and composition;- The Forest, together with the purlieu woods (Wall Wood, Monk's Wood and Wallis's Spring) was originally an outlying part of the extensive Forest of Essex and still covers over 400 hectares;- Habitats present include mixed ancient coppice woodland (with over 15 different woodland stand-types recognised), scrub, unimproved grassland chases and plains with ancient pollards, and herb-rich marshland/fen (largest known island marshes in the county) bordering a large lake.- Only example in the county of calcareous mixed oak coppice, with it's unusually large oak stools;- More than four hundred species of higher plants have been recorded, including about thirty trees and shrubs, and many county rarities;- It is comparatively rich in bryophytes and lichens and has locally important breeding bird communities and insect populations;- Centuries-old pollarded trees are scattered across the grassland plains of the eastern half of the Forest including probably the only native beech in Essex	<ul style="list-style-type: none">- The area supports a number of species of national importance or that are considered uncommon in Essex, these include stinking Hellebore, oxlip, primrose, herb Paris, early purple orchid, greater butterfly orchid, bird's-nest orchid, common Twayblade, wild daffodil, common gromwell, stinking iris, bee orchid, pyramidal orchid, common spotted orchid, strawberry clover, wild thyme, dwarf thistle, adder's tongue, early marsh orchid, southern marsh orchid, broad blysmus, marsh pennywort, bog pimpernel, marsh arrow-grass, tubular water dropwort, ragged robin, marsh valerian as well as at least six species of sedge.	<ul style="list-style-type: none">- Change in quality of habitats as a result of indirect impacts such as air quality (lichens are particularly sensitive), water pollution or changes to hydrological regime;- Disturbance to birds through noise, vibration and lighting.

Proposed Hub Airport Name	SSSI site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
				outside Epping Forest and South Weald Park;		
Inner Estuary	South Thames Estuary & Marshes	0 m	54.49 km ² (22.30 km ²)	<ul style="list-style-type: none">- Extends from Gravesend to the eastern end of the Isle of Grain and forms a major component of the Greater Thames Estuary;- Consists of an extensive mosaic of grazing marsh, saltmarsh, mudflats and shingle characteristic of the estuarine habitats of the north Kent marshes;- Freshwater pools and some areas of woodland provide additional variety and complement the estuarine habitats;- Supports outstanding numbers of waterfowl with total counts regularly exceeding 20,000 including internationally¹ and nationally² important numbers of birds;- The diverse habitats support a number of nationally rare³ and scarce⁴ invertebrate species and an assemblage of nationally scarce plants.	<ul style="list-style-type: none">- Redshank, knot and dunlin present in internationally important numbers;- European white-fronted goose, shelduck, gadwall, teal, pintail, shoveler, grey plover, curlew, black-tailed godwit, redshank, greenshank, avocet and ringed plover found in nationally important numbers;- Rare species⁵ present such as garganey, pintail, avocet and bearded tit;- Specially protected birds⁶ present, including hen harrier, short-eared owl, ruff, common tern, avocet and golden plover;- Nationally scarce plants present such as golden samphire, Borrer's saltmarsh grass, divided sedge, small goosefoot and golden dock, slender hare's-ear, sea clover, sea barley, bulbous foxtail grass, brackish water-crowfoot, soft hornwort, water soldier, eel grass and sea kale;- Rare plants present such as least lettuce⁷;- 100 nationally scarce species of invertebrate have been recorded.	<ul style="list-style-type: none">- Loss of notified habitat;- Loss of habitat supporting notable bird assemblage;- Disturbance of notable bird assemblage.- Loss of nationally scarce and rare plant species;- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Medway Estuary & Marshes	0 m	68.40 km ² (1.95 km ²)	<ul style="list-style-type: none">- Comprises the largest area of intertidal habitats which have been identified as of value for nature conservation in Kent and are representative of the estuarine habitats found on the North Kent coast;- A complex of mudflats and saltmarsh is present with in places grazing marsh behind the sea walls which is intersected by dykes and fleets;- Supports internationally important populations of wintering and passage birds and is also of importance for its breeding;- Support nationally important populations of birds;- An outstanding assemblage of plant species also occurs on the site including several scarce species.	<ul style="list-style-type: none">- Internationally important populations of wintering birds including shelduck, Brent goose, grey plover, ringed plover, pintail, dunlin and redshank;- Internationally important populations of passage birds including ruff, whimbrel and avocet;- Important site for breeding birds such as avocet, shelduck, shoveler, pochard, mute swan, tufted duck, teal and gadwall;- Nationally important populations of birds including ruddy turnstone, black-tailed godwit, curlew, great crested grebe, shoveler, teal, wigeon and white-fronted goose;- Scarce plant species present including golden samphire, perennial glasswort and one-flowered glasswort.	<ul style="list-style-type: none">- Loss of notified habitat;- Loss of habitat supporting notable bird assemblage;- Loss of scarce plant species;- Disturbance notable bird assemblages.- Loss of habitat supporting British Red Data Book invertebrates.- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Dalham Farm	1.42 km	0.09 km ²	<ul style="list-style-type: none">- One of very few undisturbed areas which show mass movement phenomena on low-angled, inland slopes of London Clay;- Illustrates what is possibly the lowest angled slope failure in Great Britain;- Important in demonstrating slope degradation in the absence of coastal erosion and removal of material from the base.	n/a	<ul style="list-style-type: none">- Negligible
	Northward Hill	0.78 km	0.53 km ²	<ul style="list-style-type: none">- Britain's largest heronry present with over 200 pairs;- Diverse breeding bird community;- Interesting insects including scarce species;- Diverse flora with over 200 plants recorded, including trees and shrubs;	<ul style="list-style-type: none">- Scarce moths present including the sloe carpet and least carpet;- A colony of the present white-letter hairstreak butterfly on the Reserve, a species which has declined as a result of Dutch elm disease;- Nine species of dragonfly have been recorded including the scarce ruddy darter.	<ul style="list-style-type: none">- Disturbance of bird community;- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;- Change of habitat suitability for invertebrates.

¹ Nationally important numbers corresponds to more than 1% of the British population

² Internationally important numbers corresponds to more than 1% of the northwest European population

³ Species regarded as nationally rare are recorded from 1-15 of the 10 km x 10 km squares in Britain

⁴ Species regarded as nationally scarce are recorded from 16-100 of the 10 km x 10 km squares in Britain.

⁵ Listed in 'Red Data Birds in Britain', NCC/RSPB 1990.

⁶ Species listed on Annex 1 of the EEC Birds Directive (79/409/EEC)

⁷ Plants listed on Schedule 8 of the Wildlife and Countryside Act 1981.

Proposed Hub Airport Name	SSSI site	Distance from proposed airport	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
	Benfleet & Southend Marshes	1.83 km	21.00 km ²	<ul style="list-style-type: none">- Extensive series of salt marshes, mudflats, scrub and grassland which support a diverse flora and fauna. The south-facing slopes of the downs, composed of London Clay capped by sand, represent the line of former river cliffs with several re-entrant valleys. At their foot lies reclaimed marshland, with its associated dyke system, based on alluvium;- Outside the sea walls there are extensive salt marshes and mud-flats, on which wintering wildfowl and waders reach both nationally and internationally important numbers;- Nationally uncommon plants occur in all of the habitats and parts of the area are of outstanding importance for scarce invertebrates;- The ponds and dykes exhibit a transition between fresh and brackish water and support a wide range of plant and animal species.- The mud-flats are colonised by eel-grasses <i>Zostera marina</i> and <i>Z. noltii</i> which, together with dense patches of <i>Enteromorpha</i> and the rich invertebrate fauna within the mud, provide food for thousands of birds which overwinter on this shoreline.	<ul style="list-style-type: none">- The uncommon bithynian vetch <i>Vicia bithynica</i> occurs here, together with hartwort <i>Tordylium maximum</i>, at its only British station, hairy vetchling <i>Lathyrus hirsutus</i> and slender tare <i>Vicia tenuissima</i>.- The ponds and dykes support the uncommon <i>Ceratophyllum submersum</i>, beaked tasselweed <i>Ruppia maritime</i>, brackish water-crowfoot <i>Ranunculus baudotii</i>;- The great crested newt and scarce emerald damselfly <i>Lestes dryas</i> are also present;- This combination of scrub, grassland and open water with vegetated margins provides a habitat for many scarce and notable insects, such as the white-letter hairstreak <i>Strymonidia w-album</i> and marbled white <i>Melanargia galathea</i> butterflies, the latter occurring in Essex only along the Thames;- The sea wall provides a habitat for uncommon species such as sea barley <i>Hordeum marinum</i>, slender hare's-ear <i>Bupleurum tenuissimum</i> and seaside red goosefoot <i>Chenopodium botryoides</i>;- The salt marsh supports the scarce laxflowered sea-lavender <i>Limonium humile</i>.- The mudflats support three species of birds (dark-bellied Brent goose, grey plover and knot) which occur in internationally important numbers and three species, (dunlin, redshank and ringed plover), which are present at nationally important levels, as well as supporting nationally important numbers of bar-tailed godwit and oyster-catcher, whilst redshank reach levels of international importance.	<ul style="list-style-type: none">- Disturbance of bird community;- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;- Change of habitat suitability for invertebrates.
Outer Estuary	n/a					

3. Road Infrastructure

Table 4 – SPAs within the 10 km of the proposed airport road infrastructure and their reasons for designation.

Proposed Hub Airport Name	Natura2000 Site – SPA/SPA with marine components	Distance from proposed infrastructure	Total area of designated site	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of a Wetlands of International Importance (Ramsar site)	Potential Impacts
Stansted	Thames Basin Heaths	8.91 km	82.75 km ²	During the breeding season the area regularly supports: - Nightjar (7.8% GB breeding); - Woodlark (9.9% GB breeding); - Dartford warbler (27.8% GB breeding).	n/a	n/a	n/a	- Disturbance of qualifying bird assemblage;
	Lee Valley	8.96 km	4.48 km ²	As set out in Table 1	As set out in Table 1	n/a	As set out in Table 1	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Thames Estuary & Marshes	2.36 m	48.40 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Medway Estuary & Marshes	7.29 km	46.84 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Inner Estuary	Benfleet & Southend Marshes	5.11 km	22.51 km ²	n/a	As set out in Table 1	As set out in Table 1	As set out in Table 1	- Disturbance of bird community; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change of habitat suitability for invertebrates.
	Lee Valley	8.96 km	4.48 km ²	As set out in Table 1	As set out in Table 1	n/a	As set out in Table 1	- Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Proposed Hub Airport Name	Natura2000 Site – SPA/SPA with marine components	Distance from proposed infrastructure	Total area of designated site	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of a Wetlands of International Importance (Ramsar site)	Potential Impacts
	Medway Estuary & Marshes	1.49 km	46.84 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance qualifying bird assemblages. - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Thames Basin Heaths	8.91 km	82.75 km ²	As above	n/a	n/a	n/a	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage;
	Thames Estuary & Marshes	0 m	48.40 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage; - Loss of nationally scarce and endangered plant species; - Loss of habitat supporting British Red Data Book invertebrates.
Outer Estuary	Benfleet & Southend Marshes	3.67 km	22.51 km ²	n/a	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of bird community; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change of habitat suitability for invertebrates.
	Foulness (Mid-Essex Coast Phase 5)	3.48 km	109.70 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Lee Valley	1.10 km	4.48 km ²	As set out in Table 1	As set out in Table 1	n/a	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Medway Estuary & Marshes	1.37 km	46.84 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblages. - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Outer	0 m	3797.27 km ²	As set out in Table 1	n/a	n/a	n/a	<ul style="list-style-type: none"> - Loss of habitat supporting

Proposed Hub Airport Name	Natura2000 Site – SPA/SPA with marine components	Distance from proposed infrastructure	Total area of designated site	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of a Wetlands of International Importance (Ramsar site)	Potential Impacts
	Thames Estuary							qualifying bird assemblage; - Disturbance of qualifying bird assemblage.
	Stodmarsh	6.30 km	4.81 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	- Disturbance of qualifying bird assemblage; - Change in habitat suitability for qualifying bird assemblages; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime
	Thames Basin Heaths	8.91 km	82.75 km ²	As above	n/a	n/a	n/a	- Disturbance of qualifying bird assemblage;
	Thames Estuary & Marshes	0 m	48.40 km ²	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	- Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage; - Loss of nationally scarce and endangered plant species; - Loss of habitat supporting British Red Data Book invertebrates.
	Thanet Coast & Sandwich Bay	0 m	18.70 km ²	As set out in Table 1	As set out in Table 1	n/a	As set out in Table 1	- Loss of habitat supporting British Red Data Book Invertebrates; - Disturbance to qualifying bird assemblages; - Loss of habitat supporting qualifying bird assemblages.
	The Swale	0.16 km	65.14 km ²	n/a	As set out in Table 1	As set out in Table 1	As set out in Table 1	- Disturbance to qualifying bird assemblages; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Table 5 –SACs and SCIs sites within 10 km of the proposed airport road infrastructure and their reasons for designation.

Proposed Hub Airport Name	SAC/SCI Site	Distance from proposed infrastructure	Total area of designated site	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
Stansted	Epping Forest	2.24 km	16.05 km ²	Annex I qualifying habitats: - Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrublayer (<i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i>) (40%). Annex II qualifying species: - Stag beetle (<i>Lucanus cervus</i>).	Annex I habitats present: - Northern Atlantic wet heaths with <i>Erica tetralix</i> (0.2%); - European dry heaths (0.7%). Annex II species present: - Great crested newt.	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Eversden and Wimpole Woods	7.51 km	6.65 km ²	Annex II qualifying species: - Barbastelle bat.	n/a	- Loss or fragmentation of habitats supporting Barbastelle bats
	Mole Gap to Reigate Escarpment	0.04 km	8.88 km ²	Annex I qualifying habitats: - Stable xerothermophilous formations with <i>Buxus sempervirens</i> on rock slopes (<i>Berberidion</i> p.p.); - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) (40%); - <i>Taxus baccata</i> woods of the British Isles (36.1%).	Annex I habitats present: - European dry heaths (9%); - Asperulo-Fagetum beech forests (20%). Annex II species present: - Great crested newt; - Greater horseshoe bat; - Bechstein's bat.	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	North Downs Woodlands	4.59 km	2.86 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Peters Pit	6.69 km	0.28 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Inner Estuary	Epping Forest	0.03 km	16.05 km ²	As above		- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Mole Gap to Reigate Escarpment	0.04 km	8.88 km ²	As above		- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	North Downs Woodlands	3.90 km	2.86 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Peters Pit	6.65 km	0.28 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water

Proposed Hub Airport Name	SAC/SCI Site	Distance from proposed infrastructure	Total area of designated site	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
						pollution or changes to hydrological regime;
	Wormley-Hoddesdonpark Woods	3.77 km	3.36 km ²	Annex I qualifying Habitats: - Sub-Atlantic and medio-European oak or oak-hornbeam forests of the <i>Carpinion betuli</i> (80%).	n/a	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Outer Estuary	Blean Complex	0.50 km	5.21 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change in habitat suitability for great crested newts;
	Epping Forest	0.03 km	16.05 km ²	As above		- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change in habitat suitability for great crested newts;
	Essex Estuaries	3.38 km	461.41 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime.
	Margate & Longsands SCI	4.52 km	649.14 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime.
	Mole Gap to Reigate Escarpment	0.04 km	8.88 km ²	As above		- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	North Downs Woodlands	0.67 km	2.86 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Peters Pit	2.31 km	0.28 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Queendown Warren	0.28 km	0.14 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts

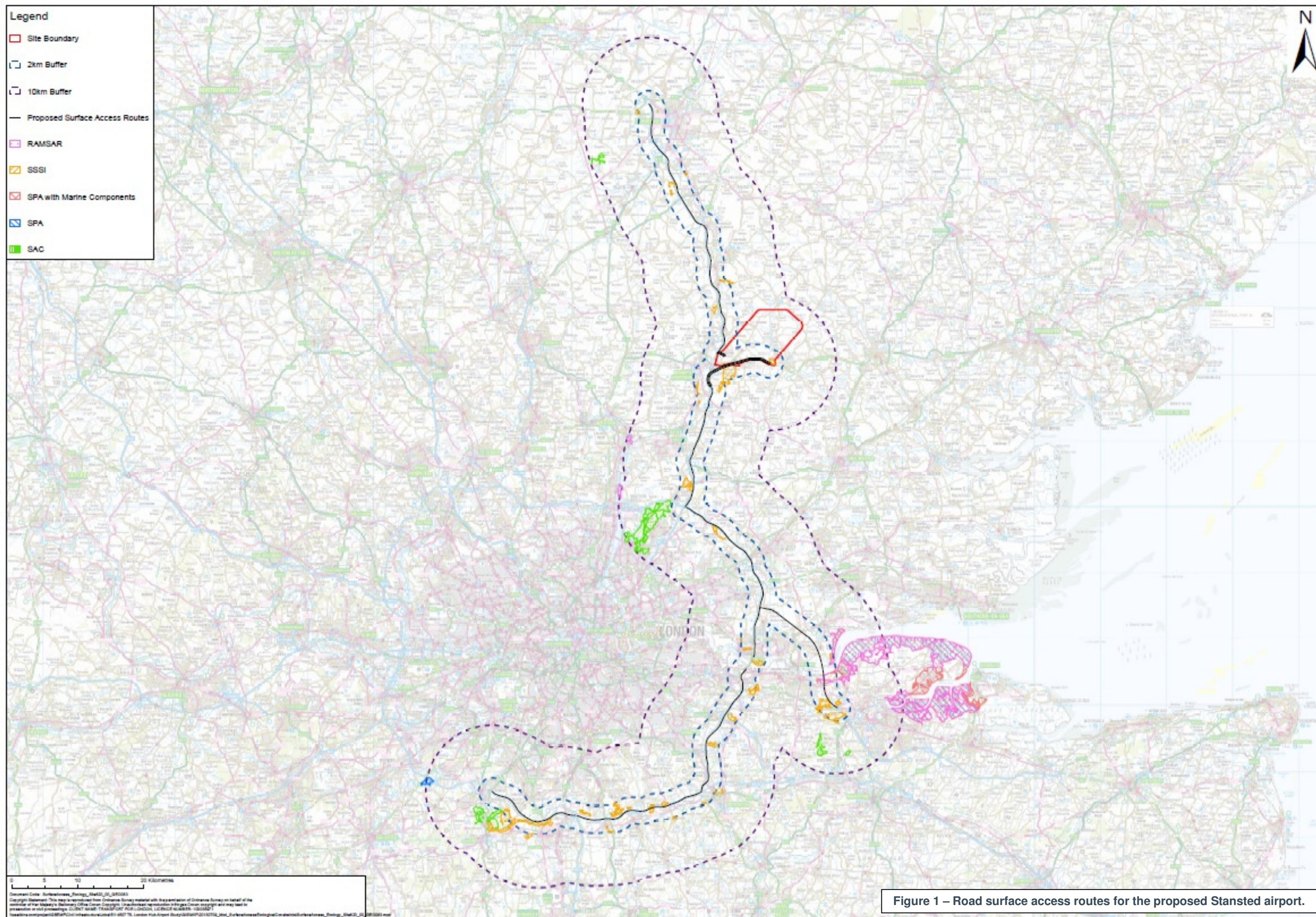
Proposed Hub Airport Name	SAC/SCI Site	Distance from proposed infrastructure	Total area of designated site	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
						such as air quality, water pollution or changes to hydrological regime;
	Stodmarsh	6.30 km	5.65 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
	Wormley-Hoddesdonpark Woods	3.77 km	3.36 km ²	As above		- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

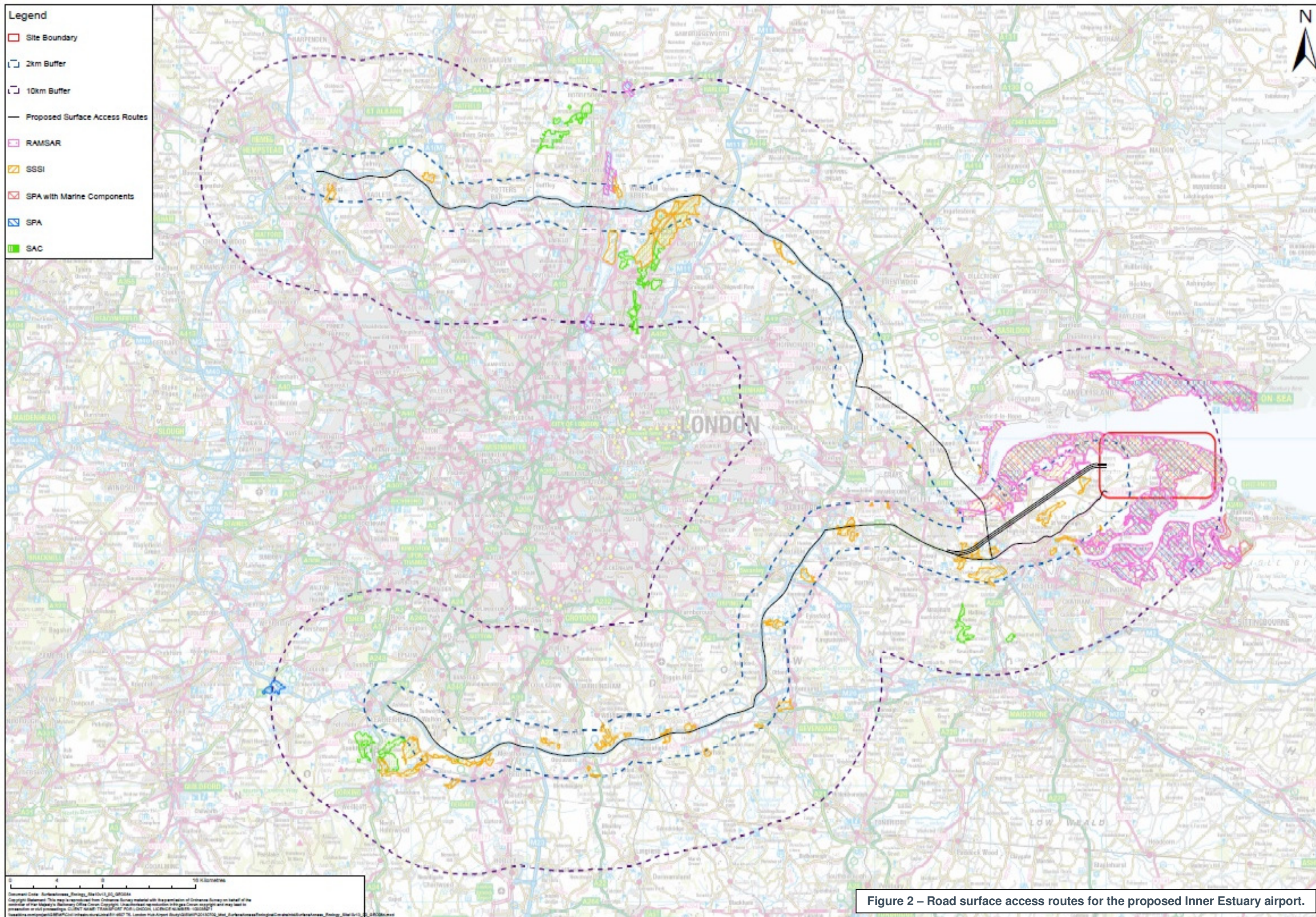
Table 6 – List of SSSI within the footprint of the proposed road airport infrastructure and their reasons for designation.

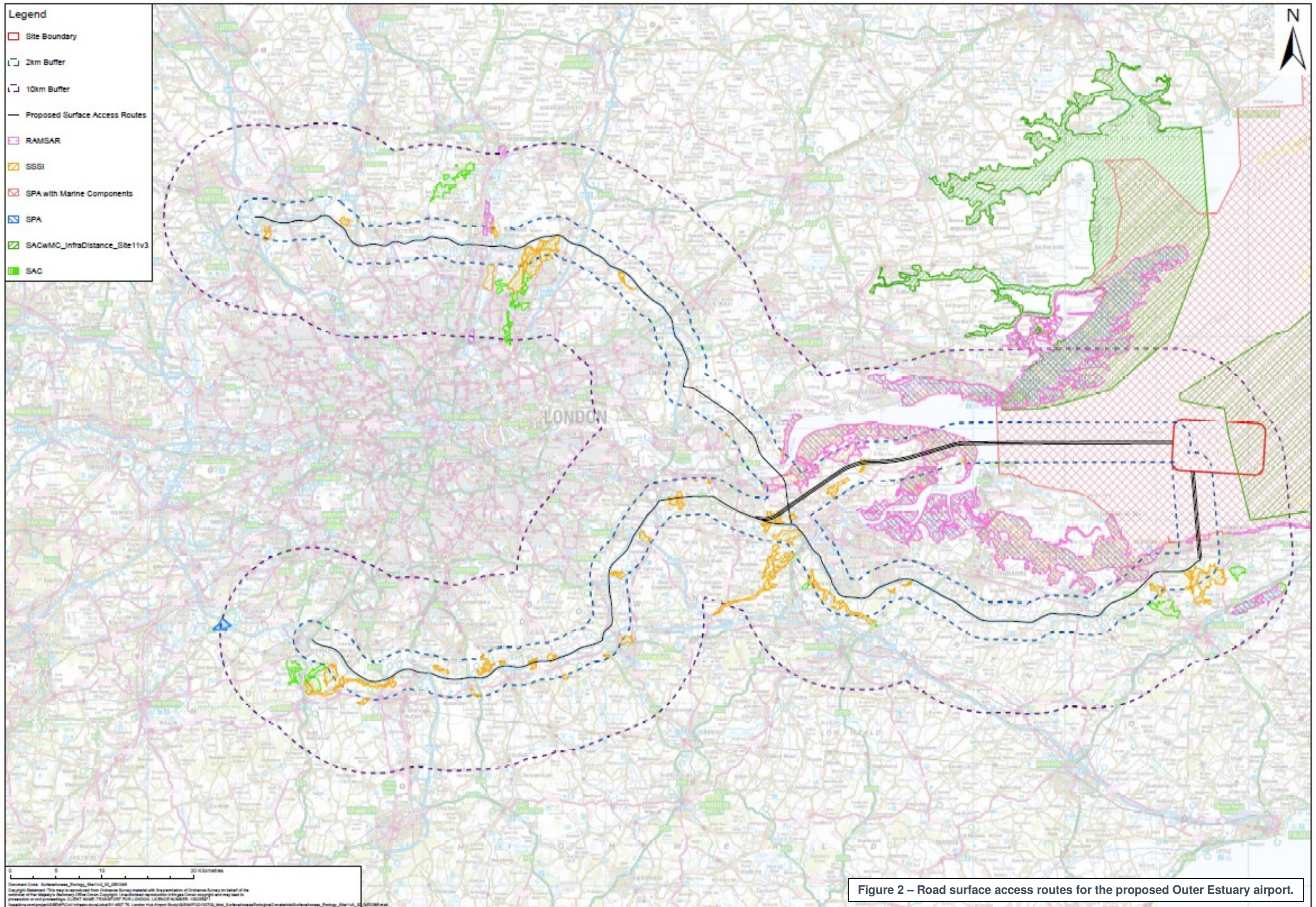
Proposed Hub Airport Name	SSSI	Distance from Infrastructure	Total area of designated site	Description and Reasons for Notification	Notable species	Potential Impacts (direct impacts only)
Stansted	Shorne & Ashenbank Woods	0 m	1.85km ²	<ul style="list-style-type: none"> - Complex of ancient and plantation woodland, and include a variety of stand-types associated with Tertiary gravels, clays and sands; - The site supports an important and diverse invertebrate fauna, especially its Coleoptera (beetles), Hemiptera (true bugs), and Odonata (dragonflies). 	<ul style="list-style-type: none"> - An area of landscaped ponds supports species such as the plants blinks <i>Montia fontana</i> and wood small-reed <i>Calamagrostis epigejos</i>, both rare in Kent, and several nationally scarce insects including the ruddy darter dragonfly <i>Sympetrum sanguineum</i>, and the satin lutestring moth <i>Tetheela fluctuosa</i>; - Rare beetles such as <i>Mordella holomelaena</i> and <i>Peltodytes caesus</i> also present; - Woodland breeding bird community includes hawfinch, marsh tit and all three British woodpeckers. 	<ul style="list-style-type: none"> - Loss of notified habitats; - Loss of habitat supporting nationally scarce or rare invertebrate species; - Disturbance of bird species.
	South Thames Estuary & Marshes	0	54.49 km ²	As set out in Table 3	As set out in Table 3	<ul style="list-style-type: none"> - Loss of notified habitat; - Loss of nationally scarce and rare plant species.
Inner/Outer Estuary	Cobham Woods	0 m	2.35 km ²	<ul style="list-style-type: none"> - This woodland and old parkland is representative of woods in North Kent which occur in part on acidic Thanet Sands and in part on chalk soils. - One nationally rare plant species occurs in the arable land close to the wood. - An outstanding assemblage of plants is present at this site which is also of importance for its breeding birds: the woods hold a good variety of typical woodland species including three species of woodpecker, nuthatch, treecreeper, hawfinch, and marsh tit. Some of these species occur at relatively high densities. 	<ul style="list-style-type: none"> - Lesser spotted woodpecker; - Hawfinch. 	<ul style="list-style-type: none"> - Loss of nationally rare plant species; - Loss of notified habitats; - Disturbance of bird species.
	Darenth Wood	0 m	1.22 km ²	<ul style="list-style-type: none"> - This site comprises some of the most valuable areas of ancient seminatural woodland in north-west Kent and includes several rare woodland types; - The invertebrate fauna has been exceptionally well studied during the last two centuries and the 	<ul style="list-style-type: none"> - Dead wood supports nationally rare beetles <i>Agrilis pannonicus</i> and <i>Platypus cylindricus</i>; 	<ul style="list-style-type: none"> - Loss of nationally rare and scarce plant species; - Loss of habitat supporting British Red

Proposed Hub Airport Name	SSSI	Distance from Infrastructure	Total area of designated site	Description and Reasons for Notification	Notable species	Potential Impacts (direct impacts only)
				wood has long been famous as a site supporting many rarities; - There are recent records of 2 nationally rare species and 32 nationally scarce species and historic records of a further 40 British Red Data Book species and 200 nationally scarce species;	- Chalk grassland supports the nationally rare and specially protected field eryngo or Watling Street thistle and the nationally scarce ground pine and man orchid.	Data Book invertebrates; - Loss of notified habitat.
	Great Crabbles Wood	0 m	0.33 km ²	- This site is representative of woods on North West Kent Tertiary sediments; these comprise a succession of strata over Upper Chalk ranging from lackheath gravels to Woolwich loams and Thanet sands, which give rise to a range of soil types; - Most of the woodland is mixed coppice under oak standards, with sweet chestnut as the dominant species; - A number of scarce plants occur, including lady orchid <i>Orchis purpurea</i> and man orchid <i>Aceras anthropophorum</i> .	- Lady orchid - Man orchid - White helleborine - Bird's nest orchid - Wild liquorice	- Loss of scarce plant species; - Loss of notified habitat.
	Mucking Flats & Marshes	0 m	3.12 km ²	- Mucking Flats and Marshes comprise an extensive stretch of Thames mudflats and saltmarsh, together with sea wall grassland; - Wintering wildfowl and waders reach both nationally and internationally important numbers on the mudflats, roosting and feeding on adjacent saltmarsh and disused silt lagoons; - The mudflats form the largest intertidal feeding area for wintering wildfowl and waders west of Canvey Island on the north bank of the Thames; - The saltmarshes provide important high tide roosts, as do the disused silt lagoons at Coalhouse Fort. The value of the site is enhanced by its proximity to Cliffs and Cooling Marshes SSSI and Higham Marshes SSSI across the Thames in Kent, with which there is an interchange of roosting and feeding birds; - Between the sea wall and mean high water line lie areas of high level saltmarsh of a type uncommon in Essex; - The saltmarsh has a high invertebrate interest, which includes the rare spider <i>Baryphyma duffeyi</i> , as well as many notable and local species.	- Ringed plover present in internationally important numbers; - Shelduck, grey plover, dunlin, black-tailed godwit and redshank present in nationally important numbers; - Avocet regularly present sometimes in nationally important numbers. (>800 during surveys winter 2012/13) - Nationally Scarce plants present such as golden samphire; - Rare spider <i>Baryphyma duffeyi</i> is known to be present.	- Loss of notified habitats; - Disturbance of nationally and internationally important populations of birds; - Loss of nationally scarce plant species; - Loss of habitat supporting rare and notable invertebrates.
	Northward Hill	0 m	0.53 km ²	As set out in Table 3	As set out in Table 3	- Loss of nationally important heron colony; - Loss of notified habitats; - Loss of habitat supporting scarce invertebrates.
	Shorne & Ashenbank Woods	0 m	1.85 km ²	As above	As above	- Loss of notified habitats; - Loss of habitat supporting nationally scarce or rare invertebrate species; - Disturbance of bird species.
	South Thames Estuary & Marshes	0 m	54.49 km ²	As set out in Table 3	As set out in Table 3	- Loss of notified habitat; - Loss of nationally scarce and rare plant species; - Disturbance SPA qualifying bird assemblages.
Outer Estuary	Thanet Coast	0 m	8.19 km ²	- This site, extending almost uninterrupted from Swalecliffe to Ramsgate, comprises mainly unstable cliff and foreshore (including shingle, sand and mudflats), with smaller areas of saltmarsh, coastal lagoons, coastal gill woodland and cliff-top grassland. - There are a number of biological, geological and geomorphological features of interest within the site. - The ornithological interest of the Thanet Coast is centred on the large numbers of waders and wildfowl which use the area in winter and the many species of birds that feed and rest during the spring and autumn passage. - Turnstones <i>Arenaria interpres</i> regularly overwinter in numbers of international importance, whilst	- Turnstone - supports internationally important wintering population; - Sanderling, grey plover, ringed plover present in nationally important numbers; - Little tern – breed in nationally important numbers.	- Loss of notified habitats and features of geological and/or geomorphological interest; - Disturbance of nationally and internationally important populations of birds; - Loss of nationally important little tern colony.

Proposed Hub Airport Name	SSSI	Distance from Infrastructure	Total area of designated site	Description and Reasons for Notification	Notable species	Potential Impacts (direct impacts only)
				sanderlings <i>Calidris alba</i> and ringed plovers <i>Charadrius hiaticula</i> and grey plovers <i>Pluvialis squatarola</i> are present in nationally important numbers. A colony of little terns <i>Sterna albifrons</i> , a species specially protected by law and listed on Schedule 1 of the 1981 Wildlife and Countryside Act, breed in nationally important numbers at Plumpudding Island.		







4. Rail Infrastructure

Table 7 –SPAs or Wetlands of International Importance (Ramsar sites) within the 10 km of the proposed rail airport infrastructure and their reasons for designation.

SPA/SPA with marine components/wetlands of International Importance (Ramsar sites)	Distance from proposed infrastructure	This site qualifies 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 (% population)	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species (% population)	Assemblage qualification: An internationally important assemblage of birds. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	Reasons for designation of a Wetlands of International Importance (Ramsar site)	Potential Impacts
Lee Valley	0 m	As set out in Table 1	As set out in Table 1	n/a	As set out in Table 1	<ul style="list-style-type: none"> - Loss of notified habitats; - Loss of habitat which supports nationally, regionally and locally important populations of birds; - Disturbance of nationally, regionally and locally important populations of birds; - Loss of habitat supporting nationally scarce invertebrate species; - Loss of notable plant species.
Medway Estuary & Marshes	0.18 km	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblages. - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Outer Thames Estuary	0 m	As set out in Table 1	n/a	n/a	n/a	<ul style="list-style-type: none"> - Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage.
Thames Estuary & Marshes	0 m	As set out in Table 1	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Loss of habitat supporting qualifying bird assemblage; - Disturbance of qualifying bird assemblage; - Loss of nationally scarce and endangered plant species; - Loss of habitat supporting British Red Data Book invertebrates.
Thanet Coast & Sandwich Bay	0.53 km	As set out in Table 1	As set out in Table 1	n/a	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblages.
The Swale	3.45 km	n/a	As set out in Table 1	As set out in Table 1	As set out in Table 1	<ul style="list-style-type: none"> - Disturbance of qualifying bird assemblage; - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

Table 8 – SAC sites within 10 km of the proposed rail airport infrastructure and their reasons for designation.

SAC Site	Distance from proposed infrastructure	Total area of designated site	This site qualifies under the Habitats Directive (97/62/EC) by supporting habitats of European importance as listed on Annex I of the Directive (% cover) or species of European importance as listed on Annex II	Annex I habitats and/or Annex II species present as a qualifying feature, but not a primary reason for selection of this site.	Potential Impacts
Blean Complex	6.76 km	5.21 km ²	As set out in Table 2	As set out in Table 2	<ul style="list-style-type: none"> - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime; - Change in habitat suitability for great crested newts;
Epping Forest	2.98 km	16.05 km ²	As set out in Table 5	As set out in Table 5	<ul style="list-style-type: none"> - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Mole Gap to Reigate Escarpment	7.85 km	8.87 km ²	As set out in Table 5	As set out in Table 5	<ul style="list-style-type: none"> - Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

North Downs Woodlands	2.46 km	2.86 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;
Queendown Warren	7.90 km	0.14 km ²	As set out in Table 2	As set out in Table 2	- Change in quality of habitats as a result of indirect impacts such as air quality, water pollution or changes to hydrological regime;

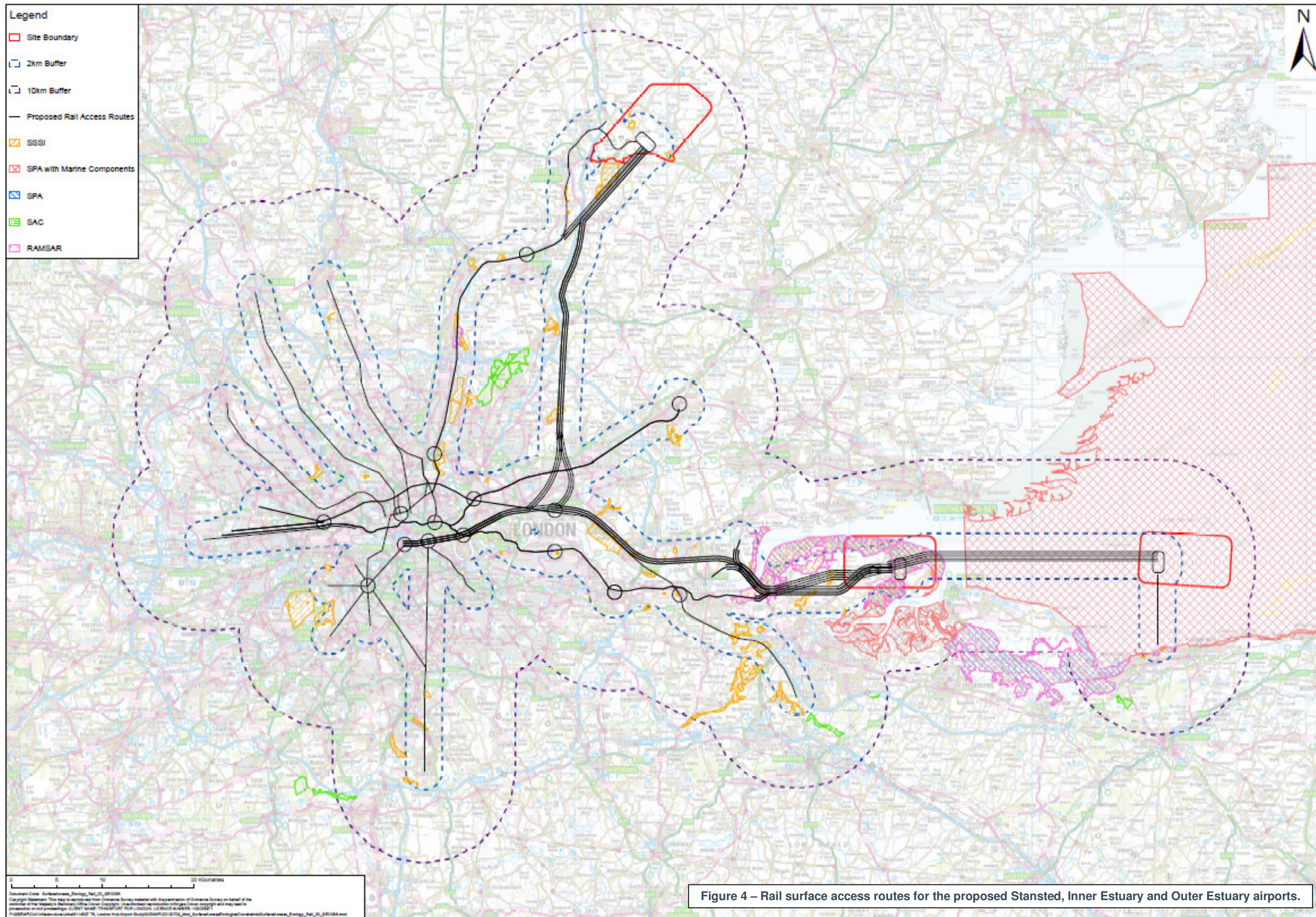
Table 9 – SSSI within the footprint of the proposed rail airport infrastructure and their reasons for designation.

SSSI	Distance from proposed infrastructure	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
Bakers Hole	0 m	0.07 km ²	- A key Pleistocene site.	n/a	- Loss of notified habitats and features of geological and/or geomorphological interest.
Chattenden Woods and Lodge Hill (under notification, details correct as of 13 th March 2013)	0 m	3.51 km ²	<ul style="list-style-type: none"> - Chattenden Woods and Lodge Hill SSSI comprise a mosaic of habitats, including ancient and long-established semi-natural woodland, scrub, and neutral grassland. It is a nationally important site specifically by reason of the following biological features of special interest that occur within and are supported by the wider habitat mosaic; - Lowland ancient and long-established semi-natural woodland; - Unimproved neutral grassland; - Breeding nightingales; - The site supports a range of woodland and scrub breeding birds, including woodcock, turtle dove, cuckoo and linnet, all of which are red-listed ‘Birds of Conservation Concern’; and stock dove, green woodpecker, whitethroat and bullfinch, all of which are amber-listed. Turtle dove and cuckoo are also listed as being of principal importance for the conservation of biodiversity in England; - Recent records of invertebrates include the stag beetle, a species listed as being of principal importance for the conservation of biodiversity in England, and the nationally scarce moths <i>Elegia similella</i>, <i>Sitochroa palealis</i> and <i>Dichomeris alacella</i>; - The site supports small numbers of great crested newts and all four widespread British species of reptile: adder, grass snake, common lizard and slow-worm. All four widespread reptiles and great crested newts are listed as being of principal importance for the conservation of biodiversity in England. 	<ul style="list-style-type: none"> - Nightingale; - Red data listed breeding bird assemblage; - Stag beetle; - Great crested newt; - Adder; - Grass snake; - Common lizard; - Slow worm; and - Nationally scarce moths <i>Elegia similella</i>, <i>Sitochroa palealis</i> and <i>Dichomeris alacella</i> 	<ul style="list-style-type: none"> - Loss of notified habitats; - Disturbance of bird species including red and amber listed ‘Birds of Conservation Concern’; - Loss of habitat which supports bird species; - Loss of habitat which supports notable and nationally scarce invertebrates; - Loss of habitat which supports great crested newts and all four widespread British reptiles.
Cobham Woods	0 m	2.35 km ²	As set out in Table 6	As set out in Table 6	<ul style="list-style-type: none"> - Loss of nationally rare plant species; - Loss of notified habitats; - Loss of habitat which supports bird species; - Disturbance of bird species.
Croham Hurst	0 m	0.34 km ²	<ul style="list-style-type: none"> - Croham Hurst is an area of ancient woodland with a range of stand types ranging from a diverse pedunculate oak-hazel community, to rough stands of beech to sessile oak-birch woods; - In addition there are also heathland communities and areas of calcareous scrub. 	n/a	- Loss of notified habitats.
Hainault Forest	0 m	1.36 km ²	<ul style="list-style-type: none"> - Part of Havering ancient wood-pasture Forest; - Lies on a ridge formed of London Clay overlain by Claygate Beds, Glacial Gravels and Boulder Clay, which rises to 90m; - Complex soils present are in general acidic, gleyed and infertile, except in the valleys where there are springs and flushes; - Woodland and scrub areas support a diverse flora and fauna, including 	<ul style="list-style-type: none"> - The ancient woodland and secondary scrub together support a notable number of breeding birds, and the site is of regional importance for two species of breeding birds. - Site is of county significance in Essex for its populations of Nightingale, Wood Warbler and Spotted Flycatcher and in Greater London for Tree Pipit, Marsh Tit and Redpoll. Woodcock, Turtle Dove and three species of woodpecker are also of interest. 	<ul style="list-style-type: none"> - Loss of notified habitats; - Loss of habitat which supports bird species; - Disturbance of bird species.

SSSI	Distance from proposed infrastructure	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
			a diverse breeding bird community.		
Hatfield Forest	0 m	4.03 km ²	As set out in Table 3	As set out in Table 3	- Loss of notified habitats; - Loss of nationally important plant species.
Ingrebourne Marshes	0 m	0.75 km ²	<ul style="list-style-type: none"> - The Ingrebourne Valley supports the largest and one of the most diverse coherent areas of freshwater marshland in Greater London; - Nowhere else in London do these habitats occur on such a large scale or in such intimate juxtaposition; - Habitats support a rich assemblage of associated invertebrates; - Habitats support a diverse breeding bird population with 61 species of bird regularly breeding in the area, 14 of which are particularly associated with wetlands. 	<ul style="list-style-type: none"> - Golden dock, a nationally scarce plant is found here; - Invertebrate species present include 16 nationally scarce fly, beetle, dragonfly and cricket species and two Red Data Book (nationally rare) wetland insect species are also found here (the hoverfly <i>Anasimyia interpuncta</i> and the scarce emerald damselfly <i>Lestes dryas</i>). 	<ul style="list-style-type: none"> - Loss of notified habitats; - Loss of nationally scarce plant species; - Loss of habitat which supports nationally scarce and British Red Data Book invertebrates; - Loss of habitat which supports bird species; - Disturbance of bird species.
Inner Thames Marshes	0 m	4.79 km ²	<ul style="list-style-type: none"> - The largest remaining expanse of wetland bordering the upper reaches of the Thames Estuary; - Supports a diverse range of breeding birds and a number of wintering wildfowl, waders, finches and birds of prey; - The Marshes also support an array of wetland plants and insects with a restricted distribution in the London area, including some that are nationally rare or scarce; - Diverse and important invertebrate fauna present which includes Red Data Book and nationally scarce species of dragonflies (Odonata), moths (Lepidoptera), beetles (Coleoptera) and flies (Diptera); and - Molluscs and beetles are well represented and several nationally scarce and local species occur. 	<ul style="list-style-type: none"> - An international important population of wintering teal; - Nationally scarce species present: divided sedge (<i>Carex divisa</i>) present, soft hornwort, brackish water-crowfoot, marsh dock, golden dock and stiff saltmarsh-grass - London rare or scarce species present such as lesser pondweed, threadleaved watercrowfoot, saltmarsh rush and pink water-speedwell; - Nationally scarce invertebrates present: water snail (<i>Bithynia leachii</i>) and the water beetles <i>Noterus crassicornis</i>, <i>Helophorus nanus</i>, <i>Agabus conspersus</i> and <i>Haliplus apicalis</i> and Roesel's bush cricket, the wormwood moth and a hoverfly <i>Tropidia scita</i>. - Nationally rare invertebrates present emerald damselfly (<i>Lestes dryas</i>) and a meniscus midge <i>Dixella attica</i>; and, - The rare provisional RDB category 3 spider <i>Baryphyma duffeyi</i> is also present. 	<ul style="list-style-type: none"> - Loss of notified habitats; - Loss of habitat which supports bird species; - Disturbance of bird species including internationally important populations; - Loss of habitat which supports nationally scarce and British Red Data Book invertebrates; - Loss of nationally scarce and locally rare or scarce plant species.
Lion Pit	0 m	0.03 km ²	- A key Pleistocene site.	n/a	- Loss of notified habitats and features of geological and/or geomorphological interest.
Mucking Flats & Marshes	0 m	3.12 km ²	As set out in Table 6	As set out in Table 6	<ul style="list-style-type: none"> - Loss of notified habitats; - Disturbance of nationally and internationally important populations of birds; - Loss of nationally scarce plant species; - Loss of habitat supporting rare and notable invertebrates.
Northward Hill	0 m	0.53 km ²	As set out in Table 3	As set out in Table 3	<ul style="list-style-type: none"> - Loss of nationally important heron colony; - Loss of notified habitats; - Loss of habitat supporting scarce invertebrates.
Purfleet Chalk Pits	0 m	0.11 km ²	- Geological Conservation Review site	n/a	- Loss of notified habitats and features of geological and/or geomorphological interest.
Riddlesdown	0 m	0.32 km ²	<ul style="list-style-type: none"> - The largest single expanse of long-established calcareous scrub in Greater London and also noted for its herb-rich chalk grassland; - Many of the herb species present are now uncommon in Greater London; and 	<ul style="list-style-type: none"> - These downland habitats support four nationally scarce species of chalk plant; - One of the few remaining localities in Greater London for juniper; - Nationally scarce plant species present: green-flowered helleborine, early gentian and round-headed rampion and white mullein; 	<ul style="list-style-type: none"> - Loss of notified habitats; - Loss of habitat which supports nationally scarce invertebrates; - Loss of nationally scarce and locally

SSSI	Distance from proposed infrastructure	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
			- An assemblage of invertebrate species supported by the wide diversity of herbs in the open habitats of the site.	- Nationally scarce invertebrates present include Roesel's bush cricket along with 8 species of beetle and 19 species of butterfly.	scarce plant species.
Shorne & Ashenbank Woods	0 m	1.85 km ²	As set out in Table 6	As set out in Table 6	- Loss of notified habitats; - Loss of habitat supporting nationally scarce or rare invertebrate species; - Disturbance of bird species.
South Thames Estuary & Marshes	0 m	54.49 km ²	As set out in Table 3	As set out in Table 3	- Loss of notified habitat; - Loss of nationally scarce and rare plant species; - Disturbance SPA qualifying bird assemblages.
Thorley Flood Pound	0 m	0.17 km ²	- Situated in the Roding Valley on the Hertfordshire-Essex border; - Contains a range of habitats associated with a fluctuating water table including tall wash grassland (a rare habitat type both in Essex and in Britain as a whole), baserich marsh and ill-drained permanent grassland, with a rich assemblage of plant species;	- The site provides a habitat for snipe, water rail, wildfowl and other ground-nesting birds.	- Loss of notified habitats; - Loss of habitat which supports bird species; - Disturbance of bird species
Turnford & Cheshunt Pits	0 m	1.73 km ²	- Includes ten former gravel pits in the Lee Valley Regional Park along with the following associated habitats: shoreline, marsh, grassland, ruderal herbs, scrub and woodland, part of the Small River Lee; and a further water body, Hall Marsh Scrape, which was constructed specifically for use by waterfowl; - The pits are of national, regional and local importance for breeding and/or wintering birds; - Rich invertebrate fauna present; - Richest orthopteran (crickets and grass hoppers) fauna in Hertfordshire..	- National importance for wintering gadwall; (regularly supporting some 2.9% of the UK population) and for wintering shoveler (about 1.3% of the UK population); - Regional importance for wintering Coot; - Locally important for wintering snipe and bittern and for a number of breeding birds: great crested grebe, tufted duck, coot little ringed plover, sedge warbler and reed warbler; - Locally distributed red-eyed damselfly is abundant and the nationally scarce hairy dragonfly, Roesel's bush-cricket and musk beetle <i>Aromia moschata</i> are also present; - Notable plant species include the nationally scarce nationally scarce whorled water milfoil; - The site also supports a good range of mammals, reptiles and amphibians: including harvest mouse and a large population of grass snake.	- Loss of notified habitats; - Loss of habitat which supports nationally, regionally and locally important populations of birds; - Disturbance of nationally, regionally and locally important populations of birds; - Loss of habitat supporting nationally scarce invertebrate species; - Loss of notable plant species.
Walthamstow Marshes	0 m	0.37 km ²	- One of the last remaining examples of semi-natural wetland in Greater London; - Contain a variety of plant communities typical of a former flood plain location, such as a range of neutral grassland types, sedge marsh, reed swamp, sallow scrub and areas of tall herb vegetation. - Associated with the diversity of habitats are several species of plant and insect which are uncommon in the London area; - The marshes contain several species of insect with a restricted distribution in the London area; and - Breeding and wintering bird communities present.	- Uncommon invertebrate species present including: the hoverfly <i>Volucella inanis</i> , a pyralid moth <i>Shoeribius micronellus</i> and Roesel's bush cricket - The insect fauna includes other moths as well as flies and a bug of local distribution; - Breeding birds present include: reed bunting, reed, sedge and willow warblers; - Flocks of finches present in autumn feeding off of the tall herbs.	- Loss of notified habitats; - Loss of habitat which supports bird species; - Disturbance of bird species; - Loss of habitat supporting notable invertebrates.
Walthamstow Reservoirs	0 m	1.78 km ²	- The site comprises of ten relatively small, shallow, water storage basins. Several of the reservoirs are fringed by sloping earth banks and these, together with the presence of wooded islands, form distinctive habitat features; - The site supports one of the country's major heronries and a particularly large concentration of breeding wildfowl; - They are also an important gathering area for moulting tufted duck and in winter attract nationally significant populations of wildfowl and other wetland birds;	- Nationally significant breeding heron colony; - Breeding species include great crested grebe, pochard, tufted duck, coot, yellow wagtail, sedge and reed warblers, shoveler and common tern with some species reaching numbers of national importance; - One of Britain's main breeding concentrations for tufted duck as well as major post-breeding refuge for this species during their period of late summer moult; - National important numbers of winter cormorant roosts;	- Loss of notified habitats; - Loss of habitat which supports bird species including nationally important populations; - Disturbance of bird species - Loss of nationally important heron colony.
West Thurrock	0 m	0.66 km ²	- One of the most important sites for wintering waders and wildfowl on	- Reed Warblers, Sedge Warblers and the notable Bearded Tit breed in the reed beds;	- Loss of notified habitats;

SSSI	Distance from proposed infrastructure	Total area of designated site (area to be lost within footprint)	Description and Reasons for Notification	Notable species	Potential Impacts
Lagoon & Marshes			<p>the Inner Thames Estuary;</p> <ul style="list-style-type: none">- The combination of extensive intertidal mudflats together with a large and secure high tide roost, attracts waders in nationally important numbers, with significant populations of other bird species;- The mudflats form the single largest intertidal feeding area, for wintering waders and wildfowl, on the inner Thames estuary;- The mudflats also provide a low tide roost for migrant Common, Black and Arctic Terns; and- The adjacent Stone Ness saltmarsh (largest area of saltmarsh in the Inner Thames Estuary) is noted for the size and character of its high marsh plant community.	<ul style="list-style-type: none">- Locally important numbers of Teal, Snipe and Grey Heron roost on the shallow waters, grassy islands and lagoon margins;	<ul style="list-style-type: none">- Loss of habitat which supports bird species;- Disturbance of bird species



Atkins
Woodcote Grove, Ashley Road, Epsom,
Surrey, KT18 5BW
Email: ecology@atkinsglobal.com
Telephone: +44 1372 75 6930

© Atkins Ltd except where stated otherwise.

The Atkins logo, 'Carbon Critical Design' and the strapline
'Plan Design Enable' are trademarks of Atkins Ltd.