

The Sizewell C Project

5.10 Shadow Habitats Regulations Assessment Volume 1: Screening and Appropriate Assessment Part 4 of 5

Revision: 1.0

Applicable Regulation: Regulation 5(2)(g)

PINS Reference Number: EN010012

May 2020

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

MINSMERE-WALBERSWICK

MINSMERE-WALBERSWICK

MINSMERE-WALBERSWICK
HEATHS AND MARSHES

EASTBRIDGE

POTTERS ROAD

POTTERS FARM

ROUND HOUSE

ABBEY ROAD LEISTON

ABBEY COTTAGES

LEISTON ABBEY

MINSMERE-WALBERSWICK

MINSMERE-WALBERSWICK

OUTER THAMES ESTUARY

SIZEWELL MARSHES

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- HARRIER HABITAT IMPROVEMENT AREA
- FENCE

DESIGNATIONS

- SPECIAL PROTECTION AREA (SPA)
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- RAMSAR SITE

PHASE 1 WEEK 22

Noise Level L_{Amax}(dB)

- 54 - 64
- 64 - 70
- 70 - 74
- 74 - 79
- 79 - 84
- >84

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DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
CHAPTER 8
INFORMATION FOR AA:
BIRDS

DRAWING TITLE:
THE PREDICTED PEAK NOISE AT 3M ELEVATION IN THE VICINITY OF THE MARSH HARRIER HABITAT IMPROVEMENT AREA (WITH 5M HIGH FENCE IN PLACE), SHOWING THE MAXIMUM AREA OF ENCROACHMENT OF NOISE OF 70DB L_{Amax}(OR ABOVE) EXPECTED TO OCCUR ONTO THE MITIGATION AREA DURING ANY SINGLE WEEKLY PERIOD WITHIN PHASE 1.

DRAWING NO:
FIGURE 8.9

DATE:	DRAWN:	SCALE :
JAN 2020	F.C.	1:10,000 @A3

SCALE BAR
0 100 200 300 400 500 M

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MINSMERE-WALBERSWICK

MINSMERE-WALBERSWICK

MINSMERE-WALBERSWICK
HEATHS AND MARSHES

OUTER THAMES
ESTUARY

SIZEWELL
MARSHES

SANDLINGS
LEISTON
ALDEBURGH

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- HARRIER HABITAT IMPROVEMENT AREA
- 150M BUFFER OF VISUAL DISTURBANCE

DESIGNATIONS

- SPECIAL PROTECTION AREA (SPA)
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- RAMSAR SITE

PHASE 1 - (INCLUDING 5M FENCE)

NOISE LEVEL L_{Amax}(DB)

- 70

PHASE 2

NOISE LEVEL L_{Amax}(DB)

- 70

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DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
CHAPTER 8
INFORMATION FOR AA:
BIRDS

DRAWING TITLE:
THE 70DB L_{Amax} NOISE CONTOURS FOR THE WORST-CASE PREDICTIONS FOR PHASES 1 AND 2 OF CONSTRUCTION, WITH THE 150M IMPACT ZONE FOR VISUAL DISTURBANCE

DRAWING NO:
FIGURE 8.10

DATE:	DRAWN:	SCALE :
JAN 2020	F.C.	1:16,000 @A3

SCALE BAR
0 100 200 300 400 500 M

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1 KM BUFFER
2KM BUFFER
3 KM BUFFER
4KM BUFFER
5 KM BUFFER
6 KM BUFFER
7 KM BUFFER

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- 1KM CONCENTRIC RADII
- LOWLAND HEATH
- MIXED TREES
- NON-CONIFEROUS
- WET WOODLAND
- CONIFEROUS
- ARABLE HABITAT
- COASTAL FLOODPLAIN GRAZING MARSH
- REEDBED

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DOCUMENT:
SIZEWELL C
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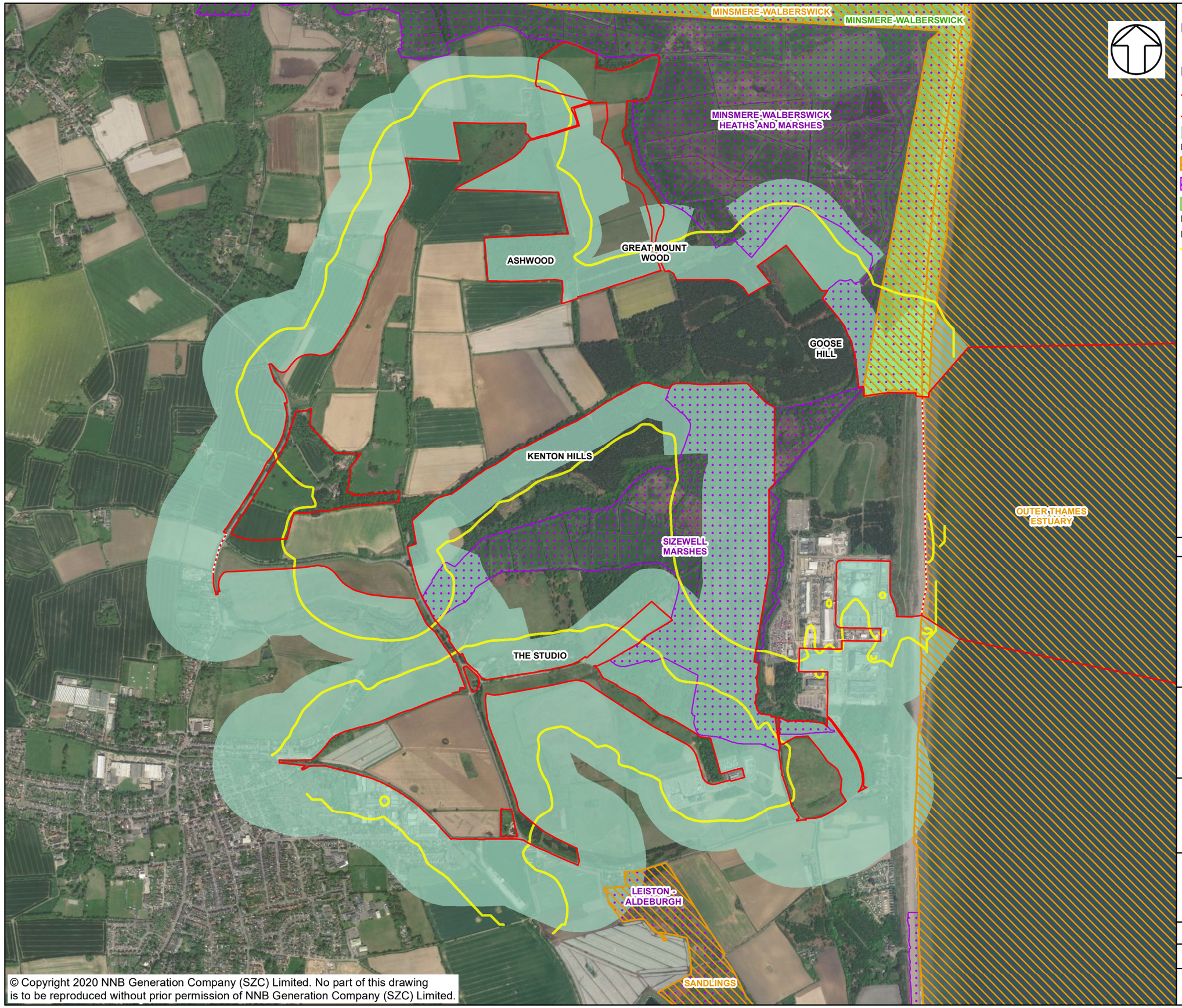
DRAWING TITLE:
DISTRIBUTION OF BROAD HABITAT-TYPES AROUND THE MARSH HARRIER NESTING AREA AT MINSMERE

DRAWING NO:
FIGURE 8.11

DATE: JAN 2020
DRAWN: F.C.
SCALE : 1:50,000 @A3

SCALE BAR
0 0.5 1 1.5 2 KM

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NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- VISUAL DISTURBANCE BUFFER

DESIGNATIONS

- SPECIAL PROTECTION AREA (SPA)
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- RAMSAR SITE

PHASE 1 - (INCLUDING 5M FENCE)

NOISE LEVEL L_{Amax}(DB)

- 70

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DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
CHAPTER 8
INFORMATION FOR AA:
BIRDS

DRAWING TITLE:
THE 70DB L_{Amax} NOISE CONTOUR FOR THE WORST-CASE PREDICTION FOR PHASE 1 OF CONSTRUCTION, TOGETHER WITH THE VISUAL IMPACT ZONE

DRAWING NO:
FIGURE 8.12

DATE:	DRAWN:	SCALE :
JAN 2020	F.C.	1:16,000 @A3

SCALE BAR
0 100 200 300 400 500 M

Appendix B: Screening Matrices

Habitats Regulations Assessment

Appendix B.1: Planning Inspectorate HRA Screening Matrices for SACs

Potential Effects

Potential effects upon the European sites* which are considered within the submitted Shadow HRA report (**Doc Ref 5.10**) for the Sizewell C Project are provided in the table below.

* As defined in Advice Note 10

Effects considered within the screening matrices

Designation	Effects described in submission information	Presented in screening matrices as
All European sites and qualifying interest features scoped in to the assessment; see **Table 4.5** (**Doc Ref 5.10**).	• Potential for erosion, accretion and sedimentation (short and long term). • The focus is on indirect effects (rather than direct effects which are covered under 'Direct habitat loss and fragmentation'). This distinction has been made to avoid the double counting of effects.	• Alteration of coastal processes / sediment transport.
	• This covers potential thermal and chemical (non-radiological and radiological) effects on water quality and indirect effects on habitats and species (including prey species), as well as water quality effects due to change in suspended sediment concentrations (SSC) (it does not include sedimentation, which is covered as part of 'Alteration of coastal processes / sediment transport'). • Includes water quality (chlorination) effects associated with the entrainment and impingement of organisms in cooling water intake.	• Water quality effects – marine environment.
	• Covers potential supporting parameters and chemical effects on freshwater (surface and groundwater) – namely SSC and nutrient concentrations in addition to chemical status – as well as any potential indirect effects on habitats and species. • Covers potential changes in supporting parameters (long term flow changes associated with the cut-off wall and realignment of ditches), as well as any consequential indirect effects on	• Water quality effects – terrestrial environment.

Designation	Effects described in submission information	Presented in screening matrices as
	habitats and species. • No chemical effects are predicted during the operational phase in this context (as all discharge would be via the cooling water system).	
	• Covers potential physical effects on freshwater (surface and groundwater resources), i.e. effects on flows and water levels, as well as any consequential indirect effects on habitats and species.	• Alteration of local hydrology and hydrogeology.
	• Change in air quality through radioactive and non-radioactive emissions to air and any consequential direct or indirect effects on habitats and species (e.g. lichens). • Potential non-radiological air quality effects have been 'scoped in' where the site is within 10 kilometres (km) of the main development site (and scoped out beyond this distance). The zone of influence (ZOI) for particulate (dust) emissions is smaller (<200 metres (m) from the emission source).	• Changes in air quality.
	• Relates to the direct and indirect effects of radiological emissions to soils, water and air (construction phase). • Relates to the direct and indirect effects of radiological emissions to air and the marine environment (operational phase). These emissions will be regulated by the Environment Agency under Schedule 23 of the Environmental Permitting (England and Wales) Regulations 2016. • Note that commissioning impacts are covered under 'Operations', since fuelling of the nuclear	• Radiological effects.

Designation	Effects described in submission information	Presented in screening matrices as
	power station marks the start of the operational phase.	
	• Limited to direct effects on habitats (not species). Indirect effects are covered in elsewhere, as noted above.	• Direct habitat loss and fragmentation.
	• Limited to potential disturbance effects on target species (not habitats), e.g. noise, light and human activity, and includes species displacement. • Potential recreational effects are covered separately below.	• Disturbance effects on species populations.
	• Potential effects due to increased recreational pressure where the site in question is within the ZOI for potential recreational effects (e.g. Zone of Physical Change: 2km buffer around main development site; Displacement Zone: 8km buffer around main development site; Buffer Zone: 8km buffer around settlements within the Displacement Zone). • Potential effects include trampling of supporting habitat, as well as disturbance effects to species and populations.	• Disturbance due to increased recreational pressure.
	• Potential direct or indirect effects on qualifying features arising due to interactions (e.g. collisions) with the infrastructure or machinery associated with the Sizewell C Project. Indirect effects could arise via effects on prey species (e.g. impingement and entrainment of small fish and their larvae and eggs).	• Physical interaction between species and the Sizewell C Project infrastructure.

STAGE 1: SCREENING MATRICES FOR SACs

The European sites included within the screening assessment are:

- Alde-Ore and Butley Estuaries SAC
- Benacre to Easton Bavents Lagoons SAC
- Dew's Ponds SAC
- Humber Estuary SAC
- Minsmere to Walberswick Heaths and Marshes SAC
- Orfordness to Shingle Street SAC
- Staverton Park and the Thicks, Wantisden SAC
- Southern North Sea SAC
- The Wash and North Norfolk Coast SAC
- Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI
- Unterweser SCI
- Weser bei Bremerhaven SCI
- Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI
- Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI

- Unterelbe SCI
- Mühlenberger Loch/Neßsand SCI
- Rapfenschutzgebiet Hamburger Stromelbe SCI
- Hamburger Unterelbe SCI
- Elbe zwischen Geesthacht und Hamburg SCI

Evidence for, or against, likely significant effects on the European site(s) and its qualifying feature(s) is detailed within the footnotes to the screening matrices below.

Matrix Key:

✓ = Likely significant effect **cannot** be excluded
✗ = Likely significant effect **can** be excluded

C = construction
O = operation
D = decommissioning

Where effects are not relevant to a particular feature they are greyed out and an explanation is provided as to why the effect is not relevant.

HRA Screening Matrix B1.1: Alde-Ore and Butley Estuaries SAC

Name of European site and designation: Alde-Ore and Butley Estuaries SAC

EU Code: UK0030076

Distance to NSIP: 6.5 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	✓ **a**	✓ **b**	✓ **a**	x **c**	✓ **d**	x **c**	✓ **e**	x **f**	**g**	✓ **h**	✓ **h**	**i**	✓ **j**	✓ **j**	✓ **j**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	x **o**	x **o**	x **o**	**p**	**p**	**p**	x **q**	✓ **r**	x **q**
1140 Mudflats and sandflats not covered by seawater at low tide	✓ **a**	✓ **b**	✓ **a**	x **c**	✓ **d**	x **c**	✓ **e**	x **f**	**g**	✓ **h**	✓ **h**	**i**	✓ **j**	✓ **j**	✓ **j**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	x **o**	x **o**	x **o**	**p**	**p**	**p**	x **q**	✓ **r**	x **q**
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	✓ **a**	✓ **b**	✓ **a**	x **c**	✓ **d**	x **c**	✓ **e**	x **f**	**g**	✓ **h**	✓ **h**	**i**	✓ **j**	✓ **j**	✓ **j**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	x **o**	x **o**	x **o**	**p**	**p**	**p**	x **q**	✓ **r**	x **q**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). Likely Significant Effect cannot be excluded (**Table 5.2, item 1a**) (**Doc Ref 5.10**).

b. **Alteration of coastal processes/sediment transport:** The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. Likely Significant Effect cannot be excluded (**Table 5.2, item 1b**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment during the construction phase in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on SAC qualifying features. However, due to a weak pathway, low magnitude and dilution, no Likely Significant Effect is predicted (**Table 5.2, item 2b**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.2, item 2c**) (**Doc Ref 5.10**).

e. **Water quality effects – terrestrial environment:** There is potential for associated development to affects water quality which may cause secondary effects on the qualifying habitat features of the SAC. Likely Significant Effect cannot be excluded (**Table 5.2, item 3a**) (**Doc Ref 5.10**).

f. **Water quality effects – terrestrial environment:** The operational phase of the associated development is not expected to cause any effect on water quality. No Likely Significant Effect is predicted (**Table 5.2, item 3d**) (**Doc Ref 5.10**).

g. **Water quality effects – terrestrial environment:** The Two Village Bypass will not be decommissioned and, instead, it will form part of the highway network. Therefore, there is no impact pathway.

h. **Alteration of local hydrology and hydrogeology:** The construction (**Table 5.2, item 4a**) (**Doc Ref 5.10**) and operation (**Table 5.2, item 4d**) (**Doc Ref 5.10**) of the associated development has the potential to alter the local hydrology and hydrogeology which may cause secondary effects on the qualifying habitat features of the SAC. Likely Significant Effect cannot be excluded (**Table 5.2, item 4a and 4d**) (**Doc Ref 5.10**).

i. **Alteration of local hydrology and hydrogeology:** The Two Village Bypass will not be decommissioned and, instead, it will form part of the highway network. Therefore, there is no impact pathway.

j. **Changes in air quality:** During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites. Likely Significant Effect cannot be excluded (**Table 5.2, item 5a**) (**Doc Ref 5.10**).

   During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.2, item 5b**) (**Doc Ref 5.10**).

k. **Radiological effects:** Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.2, item 6a**) (**Doc Ref 5.10**).

l. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b**) (**Doc Ref 5.10**).

m. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident as there will be no direct or indirect habitat loss of the qualifying features of the Alde-Ore and Butley Estuaries SAC as a result of the Sizewell C Project.

n. **Disturbance effects on species populations:** No discernible impact pathway is evident as there will be no direct or indirect disturbance effects that could affect the qualifying features of the Alde-Ore and Butley Estuaries SAC as a result of Sizewell C.

o. **Disturbance due to increase in recreational pressure:** It is considered that the majority of additional visits undertaken by people displaced from Sizewell, or potentially the RSPB Minsmere Reserve, to Aldeburgh would involve activities on the immediate beach frontage around the town, rather than the estuarine habitats and landscape of the Alde-Ore Estuary. No Likely Significant Effect is predicted for the construction phase (**Table 5.2, item 9d**) (**Doc Ref 5.10**) or operational phase (**Table 5.2, item 9h**) (**Doc Ref 5.10**).

p. **Physical interaction between species and project infrastructure:** As the designated features are habitats and not species, no discernible impact pathway is evident and, therefore, there is no Likely Significant Effect with the Sizewell C Project.

q. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified no plan or project that could act in-combination with the construction and decommissioning of the Sizewell C Project to potentially

result in Likely Significant In-combination Effects . No Likely Significant In-combination Effects is predicted (**Section 5.6**) (**Doc Ref 5.10**).

r. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.2: Benacre to Easton Bavents Lagoons SAC

Name of European site and designation: Benacre to Easton Bavents Lagoons SAC

EU Code: UK0013104

Distance to NSIP: 14.6 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1150 Coastal lagoons * Priority feature	✓ **a**	✓ **a**	✓ **a**	**b**	✓ **c**	**b**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	x **h**	**g**	**i**	**i**	**i**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**	✓ **m**	✓ **m**	✓ **m**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). Likely Significant Effect cannot be excluded (**Table 5.2, item 1a**) (**Doc Ref 5.10**).

b. **Water quality effects – marine environment:** No discernible impact pathway is evident from construction or decommissioning activities due to distance of the qualifying habitat of the SAC from the proposed development.

c. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.2, item 2c**) (**Doc Ref 5.10**).

d. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

e. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

f. **Changes in air quality:** No discernible impact pathway is evident.

g. **Radiological effects:** Potential radiological effects resulting from construction and decommissioning activities relate to the disturbance of any existing (baseline) radiological contamination associated with soils, sediment and water. Due to the distance of the designated site from construction sites, no discernible impact pathway is evident.

h. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b**) (**Doc Ref 5.10**)

i. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

j. **Disturbance effects on species populations:** No discernible impact pathway is evident.

k. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

l. **Physical interaction between species and project infrastructure:** As the designated features are habitats and not species, no discernible impact pathway is evident.

m. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.3: Dew's Ponds SAC

Name of European site and designation: Dew's Ponds SAC																																
EU Code: UK0030133																																
Distance to NSIP: 11.2 km																																
European site features	**Likely effects of NSIP**																															
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1166 Great crested newt *Triturus cristatus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	c	**c**	✓ **d**	✓ **d**	✓ **d**	**e**	**e**	**e**	**f**	x **g**	**f**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**k**	**k**	**k**	x **l**	x **l**	x **l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

d. **Alteration of local hydrology and hydrogeology:** The construction (**Table 5.2, item 4b**) (**Doc Ref 5.10**) and operation (**Table 5.2, item 4e**) (**Doc Ref 5.10**) of the associated development has the potential to alter the local hydrology and hydrogeology which may cause secondary effects on the qualifying habitat features of the SAC. Likely Significant Effect cannot be excluded (**Table 5.2, item 4b and 4e**) (**Doc Ref 5.10**).

e. **Changes in air quality:** No discernible impact pathway is evident due to distance of the SAC from the proposed development (>10km from the 'installation boundary').

f. **Radiological effects:** Potential radiological effects resulting from construction or decommissioning activities relate to the disturbance of any existing (baseline) radiological contamination associated with soils, sediment and water. Due to the distance of the designated site from construction sites, no discernible impact pathway is evident.

g. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b**) (**Doc Ref 5.10**).

h. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

i. **Disturbance effects on species populations:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

j. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

k. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident due to the distance of the SAC from the proposed development.

l. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified no plan or project that could act in-combination with the construction and decommissioning of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . No Likely Significant In-combination Effects is predicted (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.4: Humber Estuary SAC

Name of European site and designation: Humber Estuary SAC

EU Code: UK0030170

Distance to NSIP: 162.9 km

European site features	**Likely effects of NSIP**																															
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
1110 Sandbanks which are slightly covered by sea water all the time	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**

1150 Coastal lagoons *Priority feature	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
1310 Salicornia and other annuals colonizing mud and sand	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
2110 Embryonic shifting dunes	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
2130 Fixed coastal dunes with herbaceous vegetation ("grey dunes")	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**

*Priority feature																																		
2160 Dunes with *Hippopha rhamnoides*	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**t**	**t**	**t**
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	✓ **s**	**p**	**t**	**t**	**t**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	✓ **s**	**p**	**t**	**t**	**t**
1364 Grey seal *Halichoerus grypus*	**a**	**a**	**a**	✓ **c**	✓ **d**	✓ **c**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	x **i**	x **j**	x **i**	**k**	**k**	**k**	✓ **m**	✓ **n**	✓ **m**	**o**	**o**	**o**	✓ **q**	✓ **r**	✓ **q**	✓ **u**	✓ **u**	✓ **u**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: No discernible impact pathway is evident due to the distance between the SAC and the Sizewell C Project.

b. Water quality effects – marine environment: No discernible impact pathway is evident due to distance of the SAC from the proposed development.

c. Water quality effects – marine environment: Any uncontrolled discharges to the marine environment (including sediment plumes from dredging) could affect prey species for foraging grey seal. Likely Significant Effect cannot be excluded (**Table 5.4, item 2b**) (**Doc Ref 5.10**)

d. Water quality effects – marine environment: The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.4, item 2c**) (**Doc Ref 5.10**).

e. Water quality effects – terrestrial environment: No discernible impact pathway is evident on the qualifying features of the Humber Estuary SAC.

f. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident on the qualifying features of the Humber Estuary SAC.

g. **Changes in air quality:** No discernible impact pathway is evident due to the distance between the SAC and the Sizewell C Project.

h. **Radiological effects:** No discernible impact pathway is evident due to the distance between the qualifying habitats of the SAC and the Sizewell C Project.

i. **Radiological effects:** Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.4, item 6a**) (**Doc Ref 5.10**).

j. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.4, item 6b**) (**Doc Ref 5.10**).

k. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

l. **Disturbance effects on species populations:** No discernible impact pathway is evident on the qualifying habitat or fish features of the Humber Estuary SAC.

m. **Disturbance effects on species populations:** Construction and decommissioning activities may cause disturbance to marine mammals and prey species. Likely Significant Effect cannot be excluded (**Table 5.4, item 8a**) (**Doc Ref 5.10**).

n. **Disturbance effects on species populations:** Operation of the cooling water system could lead to effects on prey for marine mammals. Likely Significant Effect cannot be excluded (**Table 5.4, item 8b**) (**Doc Ref 5.10**).

o. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

p. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

q. **Physical interaction between species and project infrastructure:** There is the potential for direct physical interaction between foraging grey seal and vessels and indirect effects on prey items. Likely Significant Effect cannot be excluded (**Table 5.4, item 10a**) (**Doc Ref 5.10**).

r. **Physical interaction between species and project infrastructure:** Impingement and entrainment could affect populations of prey species. Likely Significant Effect cannot be excluded (**Table 5.4, item 10b**) (**Doc Ref 5.10**).

s. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

t. **In-combination effects:** No discernible impact pathway is evident.

u. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.5: Minsmere to Walberswick Heaths and Marshes SAC

Name of European site and designation: Minsmere to Walberswick Heaths and Marshes SAC

EU Code: UK0012809

Distance to NSIP: Adjacent

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastructu re			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1210 Annual vegetation of drift lines	✓ **a**	✓ **a**	✓ **a**	✓ **c**	✓ **d**	✓ **c**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **i**	x **h**	✓ **i**	x **j**	x **k**	x **j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**	**o**	**o**	**o**	✓ **p**	✓ **p**	✓ **p**
4030 European dry heaths	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **i**	✓ **i**	✓ **i**	x **j**	x **k**	x **j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**	**o**	**o**	**o**	✓ **p**	✓ **p**	✓ **p**
1220 Perennial vegetation of stony banks	✓ **a**	✓ **a**	✓ **a**	✓ **c**	✓ **d**	✓ **c**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **i**	✓ **i**	✓ **i**	x **j**	x **k**	x **j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**	**o**	**o**	**o**	✓ **p**	✓ **p**	✓ **p**

Evidence supporting conclusions:

a. **Alteration of coastal processes / sediment transport**: There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences) during the construction phase (**Table 5.2, item 1a**) (**Doc Ref 5.10**). The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport (**Table 5.2, item 1b**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded (**Table 5.2, item 1a and item 1b**) (**Doc Ref 5.10**).

b. **Alteration of coastal processes / sediment transport**: No discernible impact pathway is evident for this qualifying interest feature of the SAC.

c. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on designated habitats along the Minsmere-Walberswick frontage. Likely Significant Effect cannot be excluded (**Table 5.2, item 2a**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.2, item 2c**) (**Doc Ref 5.10**).

e. **Water quality effects – marine environment:** No discernible impact pathway is evident.

f. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

g. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

h. **Changes in air quality:** This qualifying feature is not considered to be sensitive to changes in air quality. No Likely Significant Effect is predicted (**Table 5.2, item 5c**) (**Doc Ref 5.10**).

i. **Changes in air quality:** During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites. Likely Significant Effect cannot be excluded (**Table 5.2, item 5a**) (**Doc Ref 5.10**).

   During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.2, item 5b**) (**Doc Ref 5.10**)

j. **Radiological effects:** Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any

disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.2, item 6a**) (**Doc Ref 5.10**).

k. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b**) (**Doc Ref 5.10**).

l. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

m. **Disturbance effects on species populations:** No discernible impact pathway is evident.

n. **Disturbance due to increase in recreational pressure:** Additional visitors to these locations resulting from the Sizewell C Project would be expected to follow similar behaviours to existing visitors and use the defined path network/beach. Further incursion by people into areas supporting sensitive vegetated shingle habitat would not be expected and additional loss of vegetation as a result of trampling is therefore considered unlikely to arise. However, Likely Significant Effect cannot be excluded for the construction phase (**Table 5.2, item 9a**) (**Doc Ref 5.10**) or the operational phase (**Table 5.2, item 9e**) (**Doc Ref 5.10**).

o. **Physical interaction between species and project infrastructure:** As the designated features are habitats and not species, no discernible impact pathway is evident.

p. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.6: Orfordness to Shingle Street SAC

Name of European site and designation: Orfordness to Shingle Street SAC

EU Code: UK0014780

Distance to NSIP: 8.9 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1150 Coastal lagoons **Priority feature*	✓ **a**	✓ **b**	✓ **a**	✓ **c**	✓ **d**	✓ **c**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **h**	✓ **h**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	**o**	**o**	**o**	**q**	**q**	**q**	✓ **r**	✓ **r**	✓ **r**
1210 Annual vegetation of drift lines	✓ **a**	✓ **b**	✓ **a**	✓ **c**	✓ **d**	✓ **c**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **i**	x **j**	✓ **i**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	✓ **p**	✓ **p**	✓ **p**	**q**	**q**	**q**	✓ **r**	✓ **r**	✓ **r**
1220 Perennial vegetation of stony banks	✓ **a**	✓ **b**	✓ **a**	✓ **c**	**e**	✓ **c**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **h**	✓ **h**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	✓ **p**	✓ **p**	✓ **p**	**q**	**q**	**q**	✓ **r**	✓ **r**	✓ **r**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). Likely Significant Effect cannot be excluded (**Table 5.2, item 1a**) (**Doc Ref 5.10**).

b. **Alteration of coastal processes / sediment transport:** The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. LSE cannot be excluded (**Table 5.2, item 1b**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on designated habitats along the Minsmere-Walberswick frontage. Likely Significant Effect cannot be excluded (**Table 5.2, item 2a**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.2, item 2c**) (**Doc Ref 5.10**).

e. **Water quality effects – marine environment:** No discernible impact pathway is evident during the operational phase.

f. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident on the qualifying features of the Orfordness to Shingle Street SAC.

g. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident on the qualifying features of the Orfordness to Shingle Street SAC.

h. **Changes in air quality:** During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites. Likely Significant Effect cannot be excluded (**Table 5.2, item 5a**) (**Doc Ref 5.10**).

   During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.2, item 5b**) (**Doc Ref 5.10**)

i. **Changes in air quality:** Likely Significant Effect cannot be excluded from potential impacts due to the generation of dust from construction and decommissioning activities (**Table 5.2, item 5a**) (**Doc Ref 5.10**).

j. **Changes in air quality:** This qualifying feature is not considered to be sensitive to changes in air quality. No Likely Significant Effect is therefore predicted (**Table 5.2, item 5c**) (**Doc Ref 5.10**).

k. **Radiological effects:** Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.2, item 6a**) (**Doc Ref 5.10**).

l. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b**) (**Doc Ref 5.10**).

m. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

n. **Disturbance effects on species populations:** No discernible impact pathway is evident.

o. **Disturbance due to increase in recreational pressure:** There is no discernible impact pathway evident from disturbance due to an increase in recreational pressure on the coastal lagoons of the SAC.

p. **Disturbance due to increase in recreational pressure:** Very few people indicated that they would potentially undertake recreational activity on Orfordness. Access to Orfordness is effectively controlled and restricted by the National Trust to specific areas. The potential for the Sizewell C Project to generate additional disturbance to habitat features of the Orfordness to Shingle Street SAC is considered to be negligible. However, Likely Significant Effect cannot be excluded for the constructio phase (**Table 5.2, item 9b**) (**Doc Ref 5.10**) or operational phase (**Table 5.2, item 9f**) (**Doc Ref 5.10**).

q. **Physical interaction between species and project infrastructure:** As the designated features are habitats and not species, no discernible impact pathway is evident.

r. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.7: Staverton Park and the Thicks, Wantisden SAC

Name of European site and designation: Staverton Park and the Thicks, Wantisden SAC																																		
EU Code: UK0012741																																			
Distance to NSIP: 17 km																																			
European site features	**Likely effects of NSIP**																																		
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastructu re			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
9190 Old acidophilous oak woods with *Quercus robur* on sandy plains	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	x **f**	x **g**	x **f**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident due to distance of the SAC from the proposed development and the terrestrial qualifying interest feature.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident due to distance of the qualifying habitat of the SAC from the proposed development.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident due to distance of the qualifying habitat of the SAC from the proposed development.

e. **Changes in air quality:** No discernible impact pathway is evident due to distance of the qualifying habitat of the SAC from the proposed development.

f. **Radiological effects**: Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.2, item 6a**) (**Doc Ref 5.10**).

g. **Radiological effects**: Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b**) (**Doc Ref 5.10**).

h. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

i. **Disturbance effects on species populations:** No discernible impact pathway is evident due to distance of the qualifying habitat of the SAC from the proposed development.

j. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident due to distance of the qualifying habitat of the SAC from the proposed development.

k. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident due to the distance of the qualifying habitat of the SAC from the proposed development.

l. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified no plan or project that could act in-combination with the construction and decommissioning of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . No Likely Significant In-combination Effects is predicted (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.8: Southern North Sea SAC

Name of European site and designation: Southern North Sea SAC																																		
EU Code: UK0030395																																		
Distance to NSIP: Main Development Site – within and adjacent																																		
European site features	**Likely effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruct-ure			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1351 Harbour porpoise *Phocoena phocoena*	**a**	**a**	**a**	✓ **b**	✓ **c**	✓ **b**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	x **g**	x **h**	x **g**	✓ **i**	✓ **j**	✓ **i**	✓ **k**	✓ **l**	✓ **k**	**m**	**m**	**m**	✓ **n**	✓ **o**	✓ **n**	✓ **p**	✓ **p**	✓ **p**

Evidence supporting conclusions:

a. **Alteration of coastal processes / sediment transport:** No discernible impact pathway is evident due to the distance between the SAC and the Sizewell C Project.

b. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality and therefore habitats and/or effects on

prey species in the Southern North Sea SAC. Likely Significant Effect cannot be excluded (**Table 5.4, item 2a**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.4, item 2c**) (**Doc Ref 5.10**).

d. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident on the qualifying feature of the Southern North Sea SAC.

e. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident on the qualifying feature of the Southern North Sea SAC.

f. **Changes in air quality:** No discernible impact pathway is evident on the qualifying feature of the Southern North Sea SAC.

g. **Radiological effects:** Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.4, item 6a**) (**Doc Ref 5.10**).

h. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.4, item 6b**) (**Doc Ref 5.10**).

i. **Direct habitat loss and fragmentation:** Construction activities can cause habitat loss and fragmentation. Likely Significant Effect cannot be excluded (**Table 5.4, item 7a**) (**Doc Ref 5.10**).

j. **Direct habitat loss and fragmentation:** During operation, the discharge of the thermal and chemical plumes and presence of infrastructure will cause the direct and indirect loss and fragmentation of habitats. Likely Significant Effect cannot be excluded (**Table 5.4, item 7b**) (**Doc Ref 5.10**).

k. **Disturbance effects on species populations:** Construction and decommissioning activities may cause disturbance to marine mammals and prey species. Likely Significant Effect cannot be excluded (**Table 5.4, item 8a**) (**Doc Ref 5.10**).

l. **Disturbance effects on species populations:** Operation of the cooling water system could lead to effects on prey for marine mammals. Likely Significant Effect cannot be excluded (**Table 5.4, item 8b**) (**Doc Ref 5.10**).

m. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

n. **Physical interaction between species and project infrastructure:** There is the potential for direct physical interaction between harbour porpoises and vessels and indirect effects on prey items. Likely Significant Effect cannot be excluded (**Table 5.4, item 10a**) (**Doc Ref 5.10**).

o. **Physical interaction between species and project infrastructure:** Impingement and entrainment could affect populations of prey species. Likely Significant Effect cannot be excluded (**Table 5.4, item 10b**) (**Doc Ref 5.10**).

p. **In-combination effects:** The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects. Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.9: The Wash and North Norfolk Coast SAC

Name of European site and designation: The Wash and North Norfolk Coast SAC

EU Code: UK0017075

Distance to NSIP: 88.2 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruct-ure			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1110 Sandbanks which are slightly covered by sea water all the time	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1160 Large shallow inlets	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1170 Reefs	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1310 Salicornia	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**

and other annuals colonizing mud and sand																															
1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1150 Coastal lagoons *Priority feature	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**
1365 Harbour seal *Phoca vitulina*	**a**	**a**	**a**	✓ **c**	✓ **d**	✓ **c**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	x **i**	x **j**	x **i**	**k**	**k**	**k**	✓ **m**	✓ **n**	✓ **m**	**o**	**o**	**o**	✓ **q**	✓ **r**	✓ **q**	✓ **t**	✓ **t**	✓ **t**
1355 Otter *Lutra lutra*	**a**	**a**	**a**	**b**	**b**	**b**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**o**	**o**	**o**	**p**	**p**	**p**	**s**	**s**	**s**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: No discernible impact pathway is evident due to the distance between the SAC and the Sizewell C Project.

b. Water quality effects – marine environment: No discernible impact pathway is evident due to distance of the SAC from the proposed development.

c. Water quality effects – marine environment: Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects foraging harbour seal prey species in the vicinity of the Sizewell C Project. Likely Significant Effect cannot be excluded (**Table 5.4, item 2a**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.4, item 2c**) (**Doc Ref 5.10**)

e. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident on the qualifying features of The Wash and North Norfolk Coast SAC.

f. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident on the qualifying feature of The Wash and North Norfolk Coast SAC.

g. **Changes in air quality:** No discernible impact pathway is evident due to the distance between the SAC and the Sizewell C Project.

h. **Radiological effects**: No discernible impact pathway is evident due to the distance between the qualifying habitats of the SAC and the Sizewell C Project.

i. **Radiological effects**: Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.4, item 6a**) (**Doc Ref 5.10**).

j. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.4, item 6b**) (**Doc Ref 5.10**).

k. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident due to distance of the SAC from the proposed development.

l. **Disturbance effects on species populations:** No discernible impact pathway is evident on the qualifying habitat features or otter of The Wash and North Norfolk Coast SAC.

m. **Disturbance effects on species populations:** Construction and decommissioning activities may cause disturbance to marine mammals and prey species. Likely Significant Effect cannot be excluded (**Table 5.4, item 8a**) (**Doc Ref 5.10**).

n. **Disturbance effects on species populations:** Operation of the cooling water system could lead to effects on prey for marine mammals. Likely Significant Effect cannot be excluded (**Table 5.4, item 8b**) (**Doc Ref 5.10**).

o. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

p. Physical interaction between species and project infrastructure: No discernible impact pathway is evident.

q. Physical interaction between species and project infrastructure: There is the potential for direct physical interaction between foraging harbour seal and vessels and indirect effects on prey items. Likely Significant Effect cannot be excluded (**Table 5.4, item 10a**) (**Doc Ref 5.10**).

r. Physical interaction between species and project infrastructure: Impingement and entrainment could prey species. Likely Significant Effect cannot be excluded (**Table 5.4, item 10b**) (**Doc Ref 5.10**).

s. In-combination effects: No discernible impact pathway is evident.

t. In-combination effects: The Likely Significant In-combination Effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in Likely Significant In-combination Effects . Likely Significant In-combination Effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B1.10: Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI

Name of European site and designation: Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI																																		
EU Code: BE2300006																																		
Distance to NSIP: 197 km																																		
European site features	**Likely effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1310 Salicornia and other annuals colonizing mud and sand	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1320 Spartina swards (*Spartinion*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

maritimae)																																
1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
2310 Dry sand heaths with *Calluna* and *Genista*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
2330 Inland dunes with open *Corynephorus* and *Agrostis* grasslands	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
3270 Rivers with muddy	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

banks with *Chenopodion* rubri p.p. and *Bidention* p.p. vegetation																																
4030 European dry heaths	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6230 Species-rich *Nardus* grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6430 Hydrophilous tall herb fringe communities of plains and of the montane to	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

alpine levels																																
6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
7140 Transition mires and quaking bogs	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
9120 Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betu*li	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91E0	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)																																
1042 Large white-faced darter *Leucorrhinia pectoralis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1134 European bitterling *Rhodeus sericeus amarus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1149 Spined loach *Cobitis taenia*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1166 Northern crested newt *Triturus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

cristatus																															
1318 Pond bat *Myotis dasycneme*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1337 Eurasian beaver *Castor fiber*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. **In-combination effects:** No discernible impact pathway is evident.

HRA Screening Matrix B1.11: Unterweser SCI

Name of European site and designation: Unterweser SCI

EU Code: DE2316331

Distance to NSIP: 479 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1351 Harbour propoise *Phocoena phocoena*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1365 Harbour seal *Phoca vitulina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.
b. **Water quality effects – marine environment:** No discernible impact pathway is evident.
c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.
d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.
e. **Changes in air quality:** No discernible impact pathway is evident.
f. **Radiological effects:** No discernible impact pathway is evident.
g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.
h. **Disturbance effects on species populations:** No discernible impact pathway is evident.
i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.
j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.
k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).
l. **In-combination effects:** No discernible impact pathway is evident.

HRA Screening Matrix B1.12: Weser bei Bremerhaven SCI

Name of European site and designation: Weser bei Bremerhaven SCI

EU Code: DE2417370

Distance to NSIP: 483 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Lampetra fluviatilis																															
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. **In-combination effects:** No discernible impact pathway is evident.

HRA Screening Matrix B1.13: Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI

Name of European site and designation: Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI																																		
EU Code: DE2516331																																		
Distance to NSIP: 475 km																																		
European site features	**Likely effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
3150 Natural eutrophic lakes with Magnopotam	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

ion or Hydrochariti on - type vegetation																															
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
9190 Old acidophilous oak woods with *Quercus robur* on sandy plains	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

albae)																																
91F0 Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1318 Pond bat *Myotis dasycneme*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1351	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Harbour porpoise *Phocoena phocoena*																																
1365 Harbour seal *Phoca vitulina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. **In-combination effects:** No discernible impact pathway is evident.

HRA Screening Matrix B1.14: Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI

Name of European site and designation: Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI																																		
EU Code: DE2323392																																		
Distance to NSIP: 509 km																																		
European site features	**Likely effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1160 Large shallow inlets and bays	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

1310 Salicornia and other annuals colonizing mud and sand	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6510 Lowland hay meadows (*Alopecurus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

pratensis, Sanguisorba officinalis)																															
7140 Transition mires and quaking bogs	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
9190 Old acidophilous oak woods with *Quercus robur* on sandy plains	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91D0 Bog woodland	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91F0 Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

minor, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*)																																	
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1113 Houting *Coregonus oxyrinchus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1130 Asp *Aspius aspius*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1145 Loach *Misgurnus fossilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1149 Spined loach	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Cobitis taenia																																
1355 Eurasian otter *Lutra lutra*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1365 Harbour seal *Phoca vitulina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1601 Elbe water dropwort *Oenanthe conioides*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. In-combination effects: No discernible impact pathway is evident.

HRA Screening Matrix B1.15: Unterelbe SCI

Name of European site and designation: Unterelbe SCI

EU Code: DE2018331

Distance to NSIP: 508 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1140 Mudflats and sandflats not covered by seawater at low tide	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91F0	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*)																																	
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1113 Houting *Coregonus oxyrinchus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1130 Asp *Aspius*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

aspius																															
1351 Harbour porpoise *Phocoena phocoena*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1365 Harbour seal *Phoca vitulina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1601 Elbe water dropwort *Oenanthe conioides*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. In-combination effects: No discernible impact pathway is evident.

HRA Screening Matrix B1.16: Mühlenberger Loch/Neßsand SCI

Name of European site and designation: Mühlenberger Loch/Neßsand SCI

EU Code: DE2424302

Distance to NSIP: 563 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
2330 Inland dunes with open *Corynephorus* and *Agrostis* grasslands	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6120 Xeric sand calcareous grasslands	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91E0 Alluvial	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)																																	
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1113 Houting *Coregonus oxyrinchus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1130 Asp *Aspius aspius*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1351 Harbour porpoise *Phocoena*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

phocoena																																
1365 Harbour seal *Phoca vitulina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1601 Elbe water dropwort *Oenanthe conioides*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. **In-combination effects:** No discernible impact pathway is evident.

HRA Screening Matrix B1.17: Rapfenschutzgebiet Hamburger Stromelbe SCI

Name of European site and designation: Rapfenschutzgebiet Hamburger Stromelbe SCI

EU Code: DE2424303

Distance to NSIP: 565 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Salmo salar																																
1113 Houting *Coregonus oxyrinchus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1130 Asp *Aspius aspius*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1351 Harbour porpoise *Phocoena phocoena*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. In-combination effects: No discernible impact pathway is evident.

HRA Screening Matrix B1.18: Hamburger Unterelbe SCI

Name of European site and designation: Hamburger Unterelbe SCI

EU Code: DE2526305

Distance to NSIP: 582 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
3270 Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6430 Hydrophilous tall herb fringe communities	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

of plains and of the montane to alpine levels																																	
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1113 Houting *Coregonus oxyrinchus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1130 Asp	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Aspius aspius																															
1134 European bitterling *Rhodeus sericeus amarus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1145 Loach *Misgurnus fossilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1149 Spined loach *Cobitis taenia*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1601 Elbe water dropwort *Oenanthe conioides*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.
b. **Water quality effects – marine environment:** No discernible impact pathway is evident.
c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.
d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.
e. **Changes in air quality:** No discernible impact pathway is evident.
f. **Radiological effects:** No discernible impact pathway is evident.
g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.
h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. **In-combination effects:** No discernible impact pathway is evident.

HRA Screening Matrix B1.19: Elbe zwischen Geesthacht und Hamburg SCI

Name of European site and designation: Elbe zwischen Geesthacht und Hamburg SCI

EU Code: DE2526332

Distance to NSIP: 584 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
3270 Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
6430 Hydrophilous tall herb fringe communities	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

of plains and of the montane to alpine levels																																	
6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
91F0 Riparian mixed forests of *Quercus robur, Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

(*Ulmenion minoris*)																																
1095 Sea lamprey *Petromyzon marinus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1099 River lamprey *Lampetra fluviatilis*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1103 Twaite shad *Alosa fallax*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	✓ **k**	**j**	**l**	**l**	**l**
1106 Atlantic salmon *Salmo salar*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1113 Houting *Coregonus oxyrinchus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1130 Asp *Aspius aspius*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**
1601 Elbe water dropwort *Oenanthe conioides*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects:** No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** No discernible impact pathway is evident.

i. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

j. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** The operation of the cooling water system has the potential to impinge migratory fish species that are qualifying features of the European site. Likely Significant Effect cannot be excluded (**Table 5.5, item 10b**) (**Doc Ref 5.10**).

l. **In-combination effects:** No discernible impact pathway is evident.

Habitats Regulations Assessment

Appendix B.2: Planning Inspectorate HRA Screening Matrices for SPAs

Potential Effects

Potential effects upon the European sites* which are considered within the submitted **Shadow HRA Report** (**Doc Ref 5.10**) for the Sizewell C Project are provided in the table below.

* As defined in Advice Note 10

Effects considered within the screening matrices

Designation	Effects described in submission information	Presented in screening matrices as
All European sites and qualifying interest features scoped in to the assessment; see **Table 4.5** (**Doc Ref 5.10**).	• Potential for erosion, accretion and sedimentation (short and long term). • The focus is on indirect effects (rather than direct effects which are covered under 'Direct habitat loss and fragmentation'). This distinction has been made to avoid the double counting of effects.	• Alteration of coastal processes / sediment transport.
	• This covers potential thermal and chemical (non-radiological and radiological) effects on water quality and indirect effects on habitats and species (including prey species), as well as water quality effects due to change in suspended sediment concentrations (SSC) (it does not include sedimentation, which is covered as part of 'Alteration of coastal processes / sediment transport'). • Includes water quality (chlorination) effects associated with the entrainment and impingement of organisms in cooling water intake.	• Water quality effects – marine environment.
	• Covers potential supporting parameters and chemical effects on freshwater (surface and groundwater) – namely SSC and nutrient concentrations in addition to chemical status – as well as any potential indirect effects on habitats and species. • Covers potential changes in supporting parameters (long term flow changes associated with the cut-off wall and realignment of ditches), as well as any consequential indirect effects on	• Water quality effects – terrestrial environment.

Designation	Effects described in submission information	Presented in screening matrices as
	habitats and species. • No chemical effects are predicted during the operational phase in this context (as all discharge would be via the cooling water system).	
	• Covers potential physical effects on freshwater (surface and groundwater resources), i.e. effects on flows and water levels, as well as any consequential indirect effects on habitats and species.	• Alteration of local hydrology and hydrogeology.
	• Change in air quality through radioactive and non-radioactive emissions to air and any consequential direct or indirect effects on habitats and species (e.g. lichens). • Potential non-radiological air quality effects have been 'scoped in' where the site is within 10 kilometres (km) of the main development site (and scoped out beyond this distance). The zone of influence (ZOI) for particulate (dust) emissions is smaller (<200 metres (m) from the emission source).	• Changes in air quality.
	• Relates to the direct and indirect effects of radiological emissions to soils, water and air (construction phase). • Relates to the direct and indirect effects of radiological emissions to air and the marine environment (operational phase). These emissions will be regulated by the Environment Agency under Schedule 23 of the Environmental Permitting (England and Wales) Regulations 2016. • Note that commissioning impacts are covered under 'Operations', since fuelling of the nuclear	• Radiological effects.

Designation	Effects described in submission information	Presented in screening matrices as
	power station marks the start of the operational phase.	
	• Limited to direct effects on habitats (not species). Indirect effects are covered in elsewhere, as noted above.	• Direct habitat loss and fragmentation.
	• Limited to potential disturbance effects on target species (not habitats), e.g. noise, light and human activity, and includes species displacement. • Potential recreational effects are covered separately below.	• Disturbance effects on species populations.
	• Potential effects due to increased recreational pressure where the site in question is within the ZOI for potential recreational effects (e.g. Zone of Physical Change: 2km buffer around main development site; Displacement Zone: 8km buffer around main development site; Buffer Zone: 8km buffer around settlements within the Displacement Zone). • Potential effects include trampling of supporting habitat, as well as disturbance effects to species and populations.	• Disturbance due to increased recreational pressure.
	• Potential direct or indirect effects on qualifying features arising due to interactions (e.g. collisions) with the infrastructure or machinery associated with the Sizewell C Project. Indirect effects could arise via effects on prey species (e.g. impingement and entrainment of small fish and their larvae and eggs).	• Physical interaction between species and the Sizewell C Project infrastructure.

STAGE 1: SCREENING MATRICES FOR SPAs

The European sites included within the screening assessment are:

- Alde-Ore Estuary Special Protection Area (SPA).
- Benacre to Easton Bavents SPA.
- Deben Estuary SPA.
- Minsmere to Walberswick SPA.
- Outer Thames Estuary SPA.
- Sandlings SPA.
- Stour and Orwell Estuaries SPA.

Evidence for, or against, likely significant effects on the European site(s) and its qualifying feature(s) is detailed within the footnotes to the screening matrices below.

Matrix Key:

✓ = Likely significant effect **cannot** be excluded
✗ = Likely significant effect **can** be excluded

C = construction
O = operation
D = decommissioning

Where effects are not relevant to a particular feature they are greyed out and an explanation is provided as to why the effect is not relevant.

HRA Screening Matrix B2.1: Alde-Ore Estuary SPA

	Name of European site and designation: Alde-Ore Estuary SPA																																	
	EU Code: UK9009112																																	
	Distance to NSIP: 6.5 km																																	
European site features	**Likely effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Avocet** *Recurvirostra avosetta*	**a**	**a**	**a**	**d**	**d**	**d**	**h**	**h**	**h**	**k**	**k**	**k**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	**t**	**t**	✓ **v**	✓ **v**	✓ **v**
Breeding **Marsh Harrier** *Circus aeruginosus*	**a**	**a**	**a**	**d**	**d**	**d**	**h**	**h**	**h**	**k**	**k**	**k**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	**t**	**t**	✓ **v**	✓ **v**	✓ **v**
Breeding **Little Tern** *Sterna albifrons*	✓ **b**	✓ **c**	✓ **b**	x **e**	✓ **f**	x **e**	✓ i	x **j**	x **j**	✓ **l**	✓ **l**	x **m**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	✓ **u**	**t**	✓ **v**	✓ **v**	✓ **v**
Breeding **Sandwich**	✓ **b**	✓ **c**	✓ **b**	x **e**	✓ **f**	x **e**	✓ i	x **j**	x **j**	✓ **l**	✓ **l**	x **m**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	✓ **u**	**t**	✓ **v**	✓ **v**	✓ **v**

Tern *Sterna sandvicensis*																															
Breeding **Lesser black-backed gull** *Larus fuscus*	✓ **b**	✓ **c**	✓ **b**	x **e**	✓ **f**	x **e**	✓ i	x **j**	x **j**	✓ **l**	✓ **l**	x **m**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	✓ **u**	**t**	✓ **v**	✓ **v**	✓ **v**
Over winter **Avocet**	✓ **b**	✓ **c**	✓ **b**	x **e**	x **g**	x **e**	✓ i	x **j**	x **j**	✓ **l**	✓ **l**	x **m**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	**t**	**t**	✓ **v**	✓ **v**	✓ **v**
Over winter **Redshank** *Tringa totanus*	✓ **b**	✓ **c**	✓ **b**	x **e**	x **g**	x **e**	✓ i	x **j**	x **j**	✓ **l**	✓ **l**	x **m**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	**t**	**t**	✓ **v**	✓ **v**	✓ **v**
Over winter **Ruff** *Philomachus pugnax*	✓ **b**	✓ **c**	✓ **b**	x **e**	x **g**	x **e**	✓ i	x **j**	x **j**	✓ **l**	✓ **l**	x **m**	✓ **n**	✓ **n**	✓ **n**	x **o**	x **p**	x **o**	**q**	**q**	**q**	**r**	**r**	**r**	✓ **s**	✓ **s**	✓ **s**	**t**	**t**	**t**	✓ **v**	✓ **v**	✓ **v**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: The qualifying feature is not dependent on the potentially affected habitats; no discernible impact pathway is apparent.

b. Alteration of coastal processes/sediment transport: The qualifying species that depend on the habitats could be affected by potential alteration of coastal hydrodynamics and sediment transport. There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). This effect could affect nesting, foraging and roosting habitats of the qualifying bird features which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1a**) (**Doc Ref 5.10**).

c. Alteration of coastal processes/sediment transport: The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. This effect could affect nesting, foraging and roosting habitats of the qualifying bird features which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1b**) (**Doc Ref 5.10**).

d. Water quality effects – marine environment: The qualifying feature is not dependent on estuarine or marine habitats; no discernible impact pathway is apparent.

e. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment during the construction phase in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on SPA qualifying features. However, due to a weak pathway, low magnitude and dilution, no Likely Significant Effect is predicted (**Table 5.3, item 2b**) (**Doc Ref 5.10**).

f. **Water quality effects – marine environment:** The effects of the cooling water discharge have the potential to affect the prey resource of some species that are part of the breeding wetland bird assemblage associated with the Alde-Ore Estuary SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 2d**) (**Doc Ref 5.10**).

g. **Water quality effects – marine environment:** Discharges during the operational phase would lead to effects on marine water quality. However, it is considered highly unlikely that this would lead to effects on qualifying features which do not depend upon marine habitats for foraging. No Likely Significant Effect is predicted (**Table 5.3, item 2e**) (**Doc Ref 5.10**).

h. **Water quality effects – terrestrial environment:** There are no direct hydrological links between the Sizewell C development site and the Alde-Ore SPA. Therefore, no discernible impact pathway is apparent.

i. **Water quality effects – terrestrial environment:** There is potential for associated development to affect water quality which may cause secondary effects on the habitat features of the SPA and qualifying species that depend on these habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 3a**) (**Doc Ref 5.10**).

j. **Water quality effects – terrestrial environment:** The operational phase of the associated development is not expected to cause any effect on water quality. No Likely Significant Effect is predicted (**Table 5.3, item 3d**) (**Doc Ref 5.10**). Once built, the Bypass would form part of the strategic road network and would not be decommissioned.

k. **Alteration of local hydrology and hydrogeology:** There are no direct hydrological links between the Sizewell C development site and the Alde-Ore SPA; no discernible impact pathway is apparent.

l. **Alteration of local hydrology and hydrogeology:** The construction and operation of the associated development has the potential to alter the local hydrology and hydrogeology which may cause secondary effects on the habitat features of the SPA, potentially affecting bird populations of the SPA during construction (**Table 5.3, item 4a**) (**Doc Ref 5.10**) and operation (**Table 5.3, item 4d**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

m. **Alteration of local hydrology and hydrogeology:** Once built, the Bypass would form part of the strategic road network and would not be decommissioned. No Likely Significant Effect is predicted (**Table 5.3, item 4c**) (**Doc Ref 5.10**).

n. Changes in air quality: During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites (**Table 5.2, item 5a**) (**Doc Ref 5.10**). Changes in air quality would not have a direct effect upon bird qualifying features, but effects could arise indirectly on the bird qualifying features supported by these habitats (**Table 5.3, item 5a**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.3, item 5b**) (**Doc Ref 5.10**).

o. Radiological effects: Background levels around the Sizewell C main development site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.3, item 6a**) (**Doc Ref 5.10**).

p. Radiological effects: Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.3, item 6b**) (**Doc Ref 5.10**).

q. Direct habitat loss and fragmentation: No discernible impact pathway is evident as there will be no direct or indirect habitat loss of the qualifying features of the Alde-Ore Estuary SPA as a result of Sizewell C.

r. Disturbance effects on species populations: No discernible impact pathway is evident as there will be no direct or indirect disturbance effects that could affect the qualifying features of the Alde-Ore Estuary SPA as a result of Sizewell C.

s. Disturbance due to an increase in recreational pressure: The influx of workers to Sizewell during the construction (and potentially decommissioning) phase for the Sizewell C development potentially could lead to an increase in the number of people partaking in recreational activities in the surrounding countryside, whilst existing recreational users in the vicinity of the development (e.g. dog walkers on Sizewell beach) could also be displaced to other areas. Likely Significant Effect cannot be excluded (**Table 5.3, item 9c**) (**Doc Ref 5.10**).

During the operational phase, staffing levels at Sizewell C would be considerably lower than during construction, so that the potential for any increase in recreational disturbance would be less than during the construction phase. However, further studies would need to be carried out to determine this; Likely Significant Effect cannot be excluded (**Table 5.3, item 9h**) (**Doc Ref 5.10**).

t. Physical interaction between species and project infrastructure: No discernible impact pathway is apparent.

u. **Physical interaction between species and project infrastructure:** Impingement and entrainment of prey for foraging seabirds will occur as a result of the operation of the cooling water system. Likely Significant Effect cannot be excluded (**Table 5.3, item 10a**) (**Doc Ref 5.10**).

v. **In-combination effects:** The likely significant in-combination effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in likely significant in-combination effects. Likely significant in-combination effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B2.2: Benacre to Easton Bavents SPA

Name of European site and designation: Benacre to Easton Bavents SPA

EU Code: UK9009291

Distance to NSIP: 14.2 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Bittern** *Botaurus stellaris*	**a**	**a**	**a**	**d**	**d**	**d**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	x **k**	**j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**	**o**	**o**	**o**	**q**	**q**	**q**
Breeding **Little Tern** *Sterna albifrons*	✓ **b**	✓ **c**	✓ **b**	x **e**	✓ **f**	x **e**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	x **k**	**j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**	**o**	✓ **p**	**o**	✓ **r**	✓ **r**	✓ **r**
Breeding **Marsh Harrier** *Circus aeruginosus*	**a**	**a**	**a**	**d**	**d**	**d**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	x **k**	**j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**	**o**	**o**	**o**	**q**	**q**	**q**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** The qualifying feature is not dependent on the potentially affected habitats; no discernible impact pathway is apparent.

b. **Alteration of coastal processes/sediment transport:** The qualifying habitats and other species that depend on the habitats could also be affected by potential alteration of coastal hydrodynamics and sediment transport. There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). This effect could affect nesting, foraging and roosting habitats of the qualifying bird features which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1a**) (**Doc Ref 5.10**).

c. **Alteration of coastal processes/sediment transport:** The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. This effect could affect nesting, foraging and roosting habitats of the qualifying bird features which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1b**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The qualifying feature is not dependent on estuarine or marine habitats; no discernible impact pathway is apparent.

e. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment during the construction phase in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on SPA qualifying features. However, due to a weak pathway, low magnitude and dilution, no Likely Significant Effect is predicted (**Table 5.3, item 2b**) (**Doc Ref 5.10**).

f. **Water quality effects – marine environment:** The effects of the cooling water discharge have the potential to affect the prey resource of some species that are part of the breeding wetland bird assemblage associated with the Alde-Ore Estuary SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 2d**) (**Doc Ref 5.10**).

g. **Water quality effects – terrestrial environment:** There are no direct hydrological links between the Sizewell C development site and the Benacre and Easton Bavents SPA. Therefore, no discernible impact pathway is apparent.

h. **Alteration of local hydrology and hydrogeology:** There are no direct hydrological links between the Sizewell C development site and the Benacre and Easton Bavents SPA; no discernible impact pathway is apparent.

i. **Changes in air quality:** Changes in air quality would not have a direct effect upon bird qualifying features, but effects could arise indirectly on the bird qualifying features supported by these habitats. The Benacre to Easton Bavents SPA is 15km from the Sizewell C development site and, therefore, no discernible impact pathway is apparent.

j. **Radiological effects:** No discernible impact pathway is evident.

k. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.3, item 6b**) (**Doc Ref 5.10**).

l. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident as there will be no direct or indirect habitat loss of the qualifying features of the Benacre to Easton Bavents SPA as a result of Sizewell C.

m. **Disturbance effects on species populations:** No discernible impact pathway is evident as there will be no direct or indirect disturbance effects that could affect the qualifying features of the Benacre to Easton Bavents SPA as a result of Sizewell C.

n. **Disturbance due to increase in recreational pressure:** The influx of workers to Sizewell during the construction (and potentially decommissioning) could lead to an increase in the number of people partaking in recreational activities, whilst displacing existing recreational users. Likely Significant Effect cannot be excluded (**Table 5.3, item 9d**) (**Doc Ref 5.10**).

o. **Physical interaction between species and project infrastructure:** Direct effects of the Sizewell C Project infrastructure on SPA qualifying features (e.g. via collisions) are highly unlikely, as are indirect effects to qualifying features (e.g. via effects on prey species) within terrestrial or estuarine habitats. With specific reference to bittern (for which European eel is an important prey item), no negative effect on the numbers of glass eels or elvers migrating through Sizewell Bay is predicted. No discernible impact pathway is apparent.

p. **Physical interaction between species and project infrastructure:** Impingement and entrainment of prey for foraging seabirds will occur as a result of the operation of the cooling water system. Likely Significant Effect cannot be excluded (**Table 5.3, item 10a**) (**Doc Ref 5.10**).

q. **In-combination effects:** No discernible impact pathway is evident.

r. **In-combination effects:** The likely significant in-combination effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in likely

significant in-combination effects. Likely significant in-combination effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B2.3: Deben Estuary SPA

Name of European site and designation: Deben Estuary SPA

EU Code: UK9009261

Distance to NSIP: 22.2 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Wintering **Avocet** *Recurvirostra avosetta*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	✓ **l**	✓ **l**	✓ **L**
Wintering **Dark-bellied Brent goose** *Branta bernicla bernicla*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	✓ **l**	✓ **l**	✓ **l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** Changes in air quality would not have a direct effect upon bird qualifying features, but effects could arise indirectly on the bird qualifying features supported by these habitats. The Deben Estuary SPA is 22.2km from the Sizewell C development site and, therefore, no discernible impact pathway is apparent.

f. **Radiological effects**: No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident as there will be no direct or indirect habitat loss of the qualifying features of the Deben Estuary SPA as a result of Sizewell C.

h. **Disturbance effects on species populations:** Construction (and decommissioning) of the associated development have the potential to affect the qualifying features which use habitats in relatively close proximity to the construction site. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

i. **Disturbance effects on species populations:** Noise and visual stimuli during operation (e.g. from increased traffic and artificial lighting) may have direct and indirect disturbance effects on the Ramsar site qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

j. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

l. **In combination effects:** The likely significant in-combination effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in likely significant in-combination effects. Likely significant in-combination effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B2.4: Minsmere-Walberswick SPA

Name of European site and designation: Minsmere-Walberswick SPA

EU Code: UK9009101

Distance to NSIP: Adjacent

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Avocet** *Recurvirostra avosetta*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Breeding **Bittern** *Botaurus stellaris*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Breeding **Little Tern** *Sterna albifrons*	✓ **b**	✓ **c**	✓ **b**	✓ **e**	✓ **f**	✓ **e**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	✓ **x**	**w**	✓ **y**	✓ **y**	✓ **y**
Breeding **Marsh Harrier**	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	✓ **r**	✓ **s**	✓ **r**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**

Circus aeruginosus																																
Breeding **Nightjar** *Caprimulgus europaeus*	**a**	**a**	**a**	**d**	**d**	**d**	**i**	**i**	**i**	**l**	**l**	**l**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	✓ **r**	✓ **s**	✓ **r**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Breeding **Shovelor** *Anas clypeata*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Breeding **Teal** *Anas crecca*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Breeding **Gadwall** *Anas strepera*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Wintering **Gadwall** *Anas strepera*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	✓ **r**	✓ **s**	✓ **r**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Wintering **Hen Harrier** *Circus cyaneus*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	✓ **r**	✓ **s**	✓ **r**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Wintering **Shovelor** *Anas Clypeata*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **j**	✓ **k**	✓ **j**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	✓ **r**	✓ **s**	✓ **r**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**
Wintering **White Fronted Goose** *Anser albifrons albifrons*	**a**	**a**	**a**	**d**	**d**	**d**	✓ **g**	✓ **h**	✓ **g**	✓ **i**	✓ **j**	✓ **i**	✓ **m**	✓ **m**	✓ **m**	x **n**	x **o**	x **n**	x **p**	x **q**	x **p**	✓ **t**	✓ **u**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	**w**	**w**	**w**	✓ **y**	✓ **y**	✓ **y**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: The qualifying feature is not dependent on the potentially affected habitats; no discernible impact pathway is apparent.

b. **Alteration of coastal processes/sediment transport:** The qualifying species that depend on the habitats could be affected by potential alteration of coastal hydrodynamics and sediment transport. There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). This effect could affect nesting, foraging and roosting habitats of the qualifying bird features which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1a**) (**Doc Ref 5.10**).

c. **Alteration of coastal processes/sediment transport:** The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. This effect could affect nesting, foraging and roosting habitats of the qualifying bird features which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1b**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The qualifying feature is not dependent on estuarine or marine habitats; no discernible impact pathway is apparent.

e. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on habitats within designated sites along the Minsmere-Walberswick frontage. Likely Significant Effect cannot be excluded (**Table 5.3, item 2a**) (**Doc Ref 5.10**).

f. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.3, item 2d**) (**Doc Ref 5.10**).

g. **Water quality effects – terrestrial environment:** There are direct hydrological connections between the Sizewell C development area and Minsmere-Walberswick (south of the Minsmere New Cut) through the Minsmere sluice. The potential for direct effects on water quality in the Minsmere South or Minsmere North Levels means that Likely Significant Effect cannot be excluded for those qualifying features dependent on wetland habitats (**Table 5.3, item 3b**) (**Doc Ref 5.10**).

h. **Water quality effects – terrestrial environment:** There are direct hydrological connections between the Sizewell C development area and Minsmere-Walberswick (south of the Minsmere New Cut) through the Minsmere sluice. The potential for direct effects on water quality in the Minsmere South or Minsmere North Levels means that Likely Significant Effect cannot be excluded for those qualifying features dependent on wetland habitats (**Table 5.3, item 3c**) (**Doc Ref 5.10**).

i. **Water quality effects – terrestrial environment:** The qualifying feature is not dependent upon wetland habitats; no discernible impact pathway is apparent.

j. **Alteration of local hydrology and hydrogeology:** Any construction (or decommissioning) activities that interrupt or alter the baseline groundwater regime could potentially change the hydrological or hydrogeological properties and, in turn, affect the wetland habitats upon which qualifying features depend. Likely Significant Effect cannot be excluded (**Table 5.3, item 4b**) (**Doc Ref 5.10**).

k. **Alteration of local hydrology and hydrogeology:** Any effect on local hydrology and hydrogeology arising as a result of construction has the potential to continue into the operational phase. Likely Significant Effect cannot be excluded (**Table 5.3, item 4e**) (**Doc Ref 5.10**).

l. **Alteration of local hydrology and hydrogeology:** The qualifying feature is not dependent upon wetland habitats, so no discernible impact pathway is apparent.

m. **Changes in air quality:** During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites (**Table 5.2, item 5a**) (**Doc Ref 5.10**). Changes in air quality would not have a direct effect upon bird qualifying features, but effects could arise indirectly on the bird qualifying features supported by these habitats (**Table 5.3, item 5a**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

   During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.3, item 5b**) (**Doc Ref 5.10**).

n. **Radiological effects:** Background levels around the Sizewell C main development site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.3, item 6a**) (**Doc Ref 5.10**).

o. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.3, item 6b**) (**Doc Ref 5.10**).

p. **Direct habitat loss and fragmentation:** Due to limited use (at most) of affected land by the qualifying feature, effects of habitat loss and habitat fragmentation during construction and decommissioning are considered unlikely. No Likely Significant Effect is predicted (**Table 5.3, item 7c**) (**Doc Ref 5.10**).

q. **Direct habitat loss and fragmentation:** Due to limited use (at most) of affected land by the qualifying feature, effects of habitat loss and habitat fragmentation during operation are considered unlikely. No Likely Significant Effect is predicted (**Table 5.3, item 7f**) (**Doc Ref 5.10**).

r. **Direct habitat loss and fragmentation:** Construction (and decommissioning) activities would lead to habitat loss within the footprint of the Sizewell C development, which may affect SPA qualifying features that rely upon supporting habitats outside the SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 7a**) (**Doc Ref 5.10**).

s. **Direct habitat loss and fragmentation:** The loss of habitat within the footprint of the Sizewell C development during operation may affect those qualifying features that rely upon supporting habitats outside the SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 7e**) (**Doc Ref 5.10**).

t. **Disturbance effects on species populations:** Construction (and decommissioning) activities within the terrestrial and marine environment may have direct and indirect disturbance effects (from both noise and visual stimuli) on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

u. **Disturbance effects on species populations:** Noise and visual stimuli during operation may have direct and indirect disturbance effects on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

v. **Disturbance due to increase in recreational pressure:** Minsmere to Walberswick SPA includes many well-used and managed sites for recreational activities. Additional visitors to these locations resulting from the Sizewell C Project would be expected to follow similar behaviours to existing visitors and use the defined path networks/accessible beaches. However, Likely Significant Effect cannot be excluded (**Table 5.3, item 9a; Table 5.3, item 9f**) (**Doc Ref 5.10**).

w. **Physical interaction between species and project infrastructure:** Direct effects of the Sizewell C Project infrastructure on SPA qualifying features (e.g. via collisions) are highly unlikely, as are indirect effects to qualifying features (e.g. via effects on prey species) within terrestrial habitats. With specific reference to bittern (for which European eel is an important prey item), no negative effect on the numbers of glass eels or elvers migrating through Sizewell Bay is predicted. Therefore, no discernible impact pathway is apparent.

x. **Physical interaction between species and project infrastructure:** Impingement and entrainment of prey for foraging little tern will occur as a result of the operation of the cooling water system. Although any such effects are likely to be localised, the scale of these losses will need to be quantified in order to assess the likelihood of any effects on the SPA little tern population. Likely Significant Effect cannot be excluded (**Table 5.3, item 10a**) (**Doc Ref 5.10**).

y. In-combination effects: The likely significant in-combination effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in likely significant in-combination effects. Likely significant in-combination effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B2.5: Outer Thames Estuary SPA

Name of European site and designation: Outer Thames Estuary SPA

EU Code: UK9020309

Distance to NSIP: Main Development Site within and adjacent

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Wintering / passage **Red-throated diver** *Gavia stellata*	**a**	**a**	**a**	✓ **b**	✓ **c**	✓ **b**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	x **g**	x **h**	x **g**	**x i**	**x i**	**x i**	✓ **j**	✓ **k**	✓ **j**	**l**	**l**	**l**	**m**	✓ **n**	**m**	✓ **o**	✓ **o**	✓ **o**
Breeding **Little Tern** *Sterna albifrons*	**a**	**a**	**a**	✓ **b**	✓ **c**	✓ **b**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	x **g**	x **h**	x **g**	**x i**	**x i**	**x i**	✓ **j**	✓ **k**	✓ **j**	**l**	**l**	**l**	**m**	✓ **n**	**m**	✓ **o**	✓ **o**	✓ **o**
Breeding **Common Tern** *Sterna hirundo*	**a**	**a**	**a**	✓ **b**	✓ **c**	✓ **b**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	x **g**	x **h**	x **g**	**x i**	**x i**	**x i**	✓ **j**	✓ **k**	✓ **j**	**l**	**l**	**l**	**m**	✓ **n**	**m**	✓ **o**	✓ **o**	✓ **o**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** Within the SPA the qualifying feature is not dependent on the potentially affected habitats. In relation to the little tern and common tern qualifying features, the SPA encompasses the foraging areas for birds that derive from breeding colonies which are qualifying features of other SPAs (e.g. the Great Yarmouth North Denes SPA and the Breydon Water SPA). Therefore, no discernible impact pathway is apparent. Any effects from an increase in sedimentation in the marine water column is addressed within the 'Water quality effects – marine environment' pathway.

b. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on the SPA qualifying features. The Outer Thames Estuary SPA is within and adjacent to the Sizewell C development site. Likely Significant Effect cannot be excluded (**Table 5.3, item 2a**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded (**Table 5.3, item 2d**) (**Doc Ref 5.10**).

d. **Water quality effects – terrestrial environment:** The qualifying feature is not dependent upon the affected habitats; no discernible impact pathway is apparent.

e. **Alteration of local hydrology and hydrogeology:** The qualifying feature is not dependent upon the affected habitats; no discernible impact pathway is apparent.

f. **Changes in air quality:** Changes in air quality would not have a direct effect upon SPA qualifying features and would not affect the marine habitats upon which these qualifying features depend. Therefore, no discernible impact pathway is apparent.

g. **Radiological effects:** Background levels around the Sizewell C main development site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.3, item 6a**) (**Doc Ref 5.10**).

h. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.3, item 6b**) (**Doc Ref 5.10**).

i. **Direct habitat loss and fragmentation:** The habitat loss is not significant in the context of the SPA. No Likely Significant Effect is predicted (**Table 5.3, item 7d**) (**Doc Ref 5.10**).

j. **Disturbance effects on species populations:** Construction (and decommissioning) activities within the terrestrial and marine environment may have direct and indirect disturbance effects (from both noise and visual stimuli) on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

k. **Disturbance effects on species populations:** Noise and visual stimuli during operation may have direct and indirect disturbance effects on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

l. **Disturbance due to increase in recreational pressure:** Potential impacts from increased recreational pressure are predicted within terrestrial and intertidal habitats only. No discernible impact pathway is apparent.

m. **Physical interaction between species and project infrastructure:** Direct effects of the Sizewell C Project infrastructure on SPA qualifying features (e.g. via collisions) are highly unlikely, as are indirect effects to qualifying features (e.g. via effects on prey species) within terrestrial habitats. No discernible impact pathway is apparent.

n. **Physical interaction between species and project infrastructure:** Impingement and entrainment of the small fish, larvae, eggs and marine invertebrates will occur as a result of the operation of the cooling water system, which may lead to a reduction in the availability of prey for the SPA qualifying features. Although any such effects are likely to be localised, the scale of these losses will need to be quantified in order to assess the likelihood of any effects on the qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 10a**) (**Doc Ref 5.10**).

o. **In-combination effects:** The likely significant in-combination effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in likely significant in-combination effects. Likely significant in-combination effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B2.6: Sandlings SPA

Name of European site and designation: Sandlings SPA																																	
EU Code: UK9020286																																	
Distance to NSIP: 1.6 km																																	
European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Nightjar** *Caprimulgus europaeus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	✓ **e**	✓ **e**	✓ **e**	x **f**	x **g**	x **f**	✓ **h**	✓ **i**	✓ **h**	✓ **j**	✓ **k**	✓ **j**	✓ **l**	✓ **l**	✓ **l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**
Breeding **Woodlark** *Lullula arborea*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	✓ **e**	✓ **e**	✓ **e**	x **f**	x **g**	x **f**	✓ **h**	✓ **i**	✓ **h**	✓ **j**	✓ **k**	✓ **j**	✓ **l**	✓ **l**	✓ **l**	**m**	**m**	**m**	✓ **n**	✓ **n**	✓ **n**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: The qualifying feature is not dependent on the potentially affected habitats; no discernible impact pathway is apparent.

b. **Water quality effects – marine environment:** The qualifying feature is not dependent on estuarine or marine habitats; no discernible impact pathway is apparent.

c. **Water quality effects – terrestrial environment:** The qualifying feature is not dependent upon wetland habitats; no discernible impact pathway is apparent.

d. **Alteration of local hydrology and hydrogeology:** The qualifying feature is not dependent upon wetland habitats, so no discernible impact pathway is apparent.

e. **Changes in air quality:** Changes in air quality would not have a direct effect upon ground-nesting birds such as nightjar and woodlark but could cause effects via changes to vegetation (composition and structure) within the habitats upon which these qualifying features depend (**Table 5.3, item 5a**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

   During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.3, item 5b**) (**Doc Ref 5.10**).

f. **Radiological effects:** Background levels around the Sizewell C main development site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.3, item 6a**) (**Doc Ref 5.10**).

g. **Radiological effects:** Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.3, item 6b**) (**Doc Ref 5.10**).

h. **Direct habitat loss and fragmentation:** Construction (and decommissioning) activities would lead to habitat loss within the footprint of the Sizewell C development, which may affect SPA qualifying features that rely upon supporting habitats outside the SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 7a**) (**Doc Ref 5.10**).

i. **Direct habitat loss and fragmentation:** The loss of habitat within the footprint of the Sizewell C development during operation may affect those qualifying features that rely upon supporting habitats outside the SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 7e**) (**Doc Ref 5.10**).

j. **Disturbance effects on species populations:** Construction (and decommissioning) activities within the terrestrial and marine environment may have direct and indirect disturbance effects (from both noise and visual stimuli) on the SPA

qualifying features. There is evidence that limited numbers of birds from the SPA nightjar and woodlark populations forage outside the SPA. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

k. **Disturbance effects on species populations:** Noise and visual stimuli during operation may have direct and indirect disturbance effects on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

l. **Disturbance due to increase in recreational pressure:** Sandlings SPA includes a number of discrete areas of heathland, acid grassland and coniferous plantations. Within the 8km displacement buffer zone the SPA component area comprises Aldringham Walks, to the south of Sizewell, and North Warren nature reserve located to the west of Thorpeness and north of Aldeburgh. There is the potential for an increase in visitor numbers during construction, decommissioning (**Table 5.3, item 9e**) (**Doc Ref 5.10**) and operation (**Table 5.3, item 9i**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

m. **Physical interaction between species and project infrastructure:** Direct effects of the Sizewell C Project infrastructure on SPA qualifying features (e.g. via collisions) are highly unlikely, as are indirect effects to qualifying features (e.g. via effects on prey species) within terrestrial habitats. No discernible impact pathway is apparent.

n. **In-combination effects:** The likely significant in-combination effects screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in likely significant in-combination effects. Likely significant in-combination effects cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B2.7: Stour and Orwell Estuaries SPA

Name of European site and designation: Stour and Orwell Estuaries SPA

EU Code: UK9009121

Distance to NSIP: 33.7 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Avocet** *Recurvirostra avosetta*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Winter **Pintail** *Anas acuta*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Winter **Dark-bellied Brent goose** *Branta bernicla*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Winter **Dunlin** *Calidris alpina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**

alpina																															
Winter **Knot** *Calidris alpina alpina*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Winter **Black-tailed Godwit** *Limosa limosa islandica*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Winter **Grey Plover** *Pluvialis squatarola*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Winter **Redshank** *Tringa totanus*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Assemblage qualification: A wetland of international importance	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**
Assemblage qualification: Waterbird assemblage	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **h**	✓ **i**	✓ **h**	**j**	**j**	**j**	**k**	**k**	**k**	**l**	**l**	**l**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.
b. **Water quality effects – marine environment:** No discernible impact pathway is evident.
c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.
d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.
e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Radiological effects**: No discernible impact pathway is evident.

g. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

h. **Disturbance effects on species populations:** Construction (and decommissioning) activities within the terrestrial environment may have direct and indirect disturbance effects (from both noise and visual stimuli) on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

i. **Disturbance effects on species populations:** Noise and visual stimuli during operation may have direct and indirect disturbance effects on the SPA qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

j. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

k. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

l. **In combination effects:** The likely significant in-combination effects screening exercise has identified no plan or project that could act in-combination with the construction and decommissioning of the Sizewell C Project to potentially result in likely significant in-combination effects. No likely significant in-combination effects is predicted (**Section 5.6**) (**Doc Ref 5.10**).

Habitats Regulations Assessment

Appendix B.3: Planning Inspectorate HRA Screening Matrices for Ramsar sites

Potential Effects

Potential effects upon the European sites* which are considered within the submitted **Shadow HRA report** (**Doc Ref 5.10**) for the Sizewell C Project are provided in the table below.

* As defined in Advice Note 10

Effects considered within the screening matrices

Designation	Effects described in submission information	Presented in screening matrices as
All European sites and qualifying interest features scoped in to the assessment; see **Table 4.5** (**Doc Ref 5.10**).	• Potential for erosion, accretion and sedimentation (short and long term). • The focus is on indirect effects (rather than direct effects which are covered under 'Direct habitat loss and fragmentation'). This distinction has been made to avoid the double counting of effects.	• Alteration of coastal processes / sediment transport.
	• This covers potential thermal and chemical (non-radiological and radiological) effects on water quality and indirect effects on habitats and species (including prey species), as well as water quality effects due to change in suspended sediment concentrations (SSC) (it does not include sedimentation, which is covered as part of 'Alteration of coastal processes / sediment transport'). • Includes water quality (chlorination) effects associated with the entrainment and impingement of organisms in cooling water intake.	• Water quality effects – marine environment.
	• Covers potential supporting parameters and chemical effects on freshwater (surface and groundwater) – namely SSC and nutrient concentrations in addition to chemical status – as well as any potential indirect effects on habitats and species. • Covers potential changes in supporting parameters (long term flow changes associated with the cut-off wall and realignment of ditches), as well as any consequential indirect effects on	• Water quality effects – terrestrial environment.

Designation	Effects described in submission information	Presented in screening matrices as
	habitats and species. • No chemical effects are predicted during the operational phase in this context (as all discharge would be via the cooling water system).	
	• Covers potential physical effects on freshwater (surface and groundwater resources), i.e. effects on flows and water levels, as well as any consequential indirect effects on habitats and species.	• Alteration of local hydrology and hydrogeology.
	• Change in air quality through radioactive and non-radioactive emissions to air and any consequential direct or indirect effects on habitats and species (e.g. lichens). • Potential non-radiological air quality effects have been 'scoped in' where the site is within 10 kilometres (km) of the main development site (and scoped out beyond this distance). The zone of influence (ZOI) for particulate (dust) emissions is smaller (<200 metres (m) from the emission source).	• Changes in air quality.
	• Relates to the direct and indirect effects of radiological emissions to soils, water and air (construction phase). • Relates to the direct and indirect effects of radiological emissions to air and the marine environment (operational phase). These emissions will be regulated by the Environment Agency under Schedule 23 of the Environmental Permitting (England and Wales) Regulations 2016. • Note that commissioning impacts are covered under 'Operations', since fuelling of the nuclear	• Radiological effects.

Designation	Effects described in submission information	Presented in screening matrices as
	power station marks the start of the operational phase.	
	• Limited to direct effects on habitats (not species). Indirect effects are covered in elsewhere, as noted above.	• Direct habitat loss and fragmentation.
	• Limited to potential disturbance effects on target species (not habitats), e.g. noise, light and human activity, and includes species displacement. • Potential recreational effects are covered separately below.	• Disturbance effects on species populations.
	• Potential effects due to increased recreational pressure where the site in question is within the ZOI for potential recreational effects (e.g. Zone of Physical Change: 2km buffer around main development site; Displacement Zone: 8km buffer around main development site; Buffer Zone: 8km buffer around settlements within the Displacement Zone). • Potential effects include trampling of supporting habitat, as well as disturbance effects to species and populations.	• Disturbance due to increased recreational pressure.
	• Potential direct or indirect effects on qualifying features arising due to interactions (e.g. collisions) with the infrastructure or machinery associated with the Sizewell C Project. Indirect effects could arise via effects on prey species (e.g. impingement and entrainment of small fish and their larvae and eggs).	• Physical interaction between species and the Sizewell C Project infrastructure.

STAGE 1: SCREENING MATRICES FOR RAMSAR SITES

The European sites included within the screening assessment are:

- Alde-Ore Estuary Ramsar site
- Deben Estuary Ramsar site
- Minsmere to Walberswick Ramsar site
- Stour and Orwell Estuaries Ramsar site

Evidence for, or against, likely significant effects on the European site(s) and its qualifying feature(s) is detailed within the footnotes to the screening matrices below.

Matrix Key:

✓ = Likely significant effect **cannot** be excluded
✗ = Likely significant effect **can** be excluded

C = construction
O = operation
D = decommissioning

Where effects are not relevant to a particular feature they are greyed out and an explanation is provided as to why the effect is not relevant.

HRA Screening Matrix B3.1: Alde-Ore Estuary Ramsar site

Name of European site and designation: Alde-Ore Estuary Ramsar site

EU Code: UK11002

Distance to NSIP: 6.5 km

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 2 Nationally-scarce plant species and British Red Data Book invertebrates	✓ **a**	✓ **b**	✓ **a**	x **c**	✓ **e**	x **c**	✓ **g**	x **h**	x **h**	✓ **i**	✓ **i**	✓ **i**	✓ **j**	✓ **j**	✓ **j**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	✓ **o**	✓ **o**	✓ **o**	**p**	**p**	**p**	✓ **r**	✓ **r**	✓ **r**
Ramsar criterion 3 The site supports a	✓ **a**	✓ **b**	✓ **a**	**d**	✓ **e, f**	**d**	✓ **g**	x **h**	x **h**	✓ **i**	✓ **i**	✓ **i**	✓ **j**	✓ **j**	✓ **j**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	✓ **o**	✓ **o**	✓ **o**	**p**	✓ **q**	**p**	✓ **r**	✓ **r**	✓ **r**

notable assemblage of breeding and wintering wetland birds																																	
Ramsar criterion 6 Species/ populations occurring at levels of international importance	✓ **a**	✓ **b**	✓ **a**	**d**	✓ **e, f**	**d**	✓ **g**	x **h**	x **h**	✓ **i**	✓ **i**	✓ **i**	✓ **j**	✓ **j**	✓ **j**	x **k**	x **l**	x **k**	**m**	**m**	**m**	**n**	**n**	**n**	✓ **o**	✓ **o**	✓ **o**	**p**	✓ **q**	**p**	✓ **r**	✓ **r**	✓ **r**

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** The qualifying habitats and other species that depend on the habitats could also be affected by potential alteration of coastal hydrodynamics and sediment transport. There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). Likely Significant Effect cannot be excluded (**Table 5.2, item 1a**) (**Doc Ref 5.10**).

   This effect could affect nesting, foraging and roosting habitats of the qualifying bird features (Ramsar criterion 3) of the Alde-Ore Ramsar site which use near-shore and intertidal habitats (**Table 5.3, item 1a**) (**Doc Ref 5.10**).

b. **Alteration of coastal processes/sediment transport:** The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. Likely Significant Effect cannot be excluded for qualifying habitats (**Table 5.2, item 1b**) (**Doc Ref 5.10**).

   This effect could affect nesting, foraging and roosting habitats of the qualifying bird features (Ramsar criterion 3) of the Alde-Ore Ramsar site which use near-shore and intertidal habitats (**Table 5.3, item 1b**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** Any uncontrolled discharges to the marine environment during the construction phase in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on Ramsar qualifying features. However, due to a weak pathway, low magnitude and dilution, no Likely **Significant** Effect is predicted (**Table 5.2, item 2b**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** No discernible impact pathway is evident on these qualifying features of the Alde-Ore Estuary Ramsar site.

e. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded for habitat qualifying features (**Table 5.2, item 2c**) (**Doc Ref 5.10**) and bird qualifying features (**Table 5.3, item 2c**) (**Doc Ref 5.10**).

f. **Water quality effects – marine environment:** The effects of the cooling water discharge have the potential to affect the prey resource of some species that are part of the breeding wetland bird assemblage associated with the Alde-Ore Estuary Ramsar site. Likely Significant Effect cannot be excluded for bird qualifying features (**Table 5.3, item 2d**) (**Doc Ref 5.10**).

g. **Water quality effects – terrestrial environment:** There is potential for associated development to affect water quality which may cause secondary effects on the qualifying features of the Ramsar site. Likely Significant Effect cannot be excluded (**Table 5.2, item 3a; Table 5.3, item 3a**) (**Doc Ref 5.10**).

h. **Water quality effects – terrestrial environment:** The operational phase of the associated development is not expected to cause any effect on water quality. No Likely Significant Effect is predicted (**Table 5.2, item 3d; Table 5.3, item 3d**) (**Doc Ref 5.10**). Once built, the Bypass would form part of the strategic road network and would not be decommissioned.

i. **Alteration of local hydrology and hydrogeology:** The construction (**Table 5.2, item 4a**) (**Doc Ref 5.10**) and operation (**Table 5.2, item 4d**) (**Doc Ref 5.10**) of the associated development has the potential to alter the local hydrology and hydrogeology which may cause secondary effects on the qualifying habitat features of the Ramsar site. The same pathway has the potential to affect bird populations of the Ramsar site during construction (**Table 5.3, item 4a**) (**Doc Ref 5.10**) and operation (**Table 5.3, item 4d**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

j. **Changes in air quality:** During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites (**Table 5.2, item 5a**) (**Doc Ref 5.10**). Changes in air quality would not have a direct effect upon bird qualifying features, but effects could arise indirectly on the bird qualifying features supported by these habitats (**Table 5.3, item 5a**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.2, item 5b; Table 5.3, item 5b**) (**Doc Ref 5.10**).

k. Radiological effects: Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.3, item 6a**) (**Doc Ref 5.10**).

l. Radiological effects: Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.3, item 6b**) (**Doc Ref 5.10**).

m. Direct habitat loss and fragmentation: No discernible impact pathway is evident.

n. Disturbance effects on species populations: No discernible impact pathway is evident.

o. Disturbance due to increase in recreational pressure: It is considered that the majority of additional visits undertaken by people displaced from Sizewell, or potentially the RSPB Minsmere Reserve, to Aldeburgh would involve activities on the immediate beach frontage around the town, rather than the estuarine habitats and landscape of the Alde-Ore Estuary. However, it is considered that there could be an increase in the number of visits to some locations around the Alde-Ore Estuary and further studies need to be carried out to assess this pathway of effect. Likely Significant Effect cannot be excluded for qualifying habitats of the Ramsar site in the construction phase (Table 5.2, item 9c) or operational phase (**Table 5.2, item 9g**) (**Doc Ref 5.10**), or qualifying bird species of the Ramsar site in the construction phase (**Table 5.3, item 9b**) (**Doc Ref 5.10**) or operational phase (**Table 5.3, item 9g**) (**Doc Ref 5.10**).

p. Physical interaction between species and project infrastructure: No discernible impact pathway is apparent.

q. Physical interaction between species and project infrastructure: Impingement and entrainment of prey for foraging seabirds will occur as a result of the operation of the cooling water system. Likely Significant Effect cannot be excluded (**Table 5.3, item 10a**) (**Doc Ref 5.10**).

r. In combination effects: The likely significant in-combination effects (LSIE) screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in LSIE. LSIE cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B3.2: Deben Estuary Ramsar site

Name of European site and designation: Deben Estuary Ramsar site

EU Code: UK11017

Distance to NSIP: 22.2 km

European site features	**Likely effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and fragment-ation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			In combina-tion effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 2 Supports a population of the mollusc *Vertigo angustior*	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**g**	**g**	**g**	**h**	**h**	**h**	**i**	**i**	**i**	**l**	**l**	**l**	**m**	**m**	**m**	**n**	**n**	**n**
Ramsar criterion 6 Species/ populations occurring at	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	✓ **j**	✓ **k**	✓ **j**	**l**	**l**	**l**	**m**	**m**	**m**	✓ **o**	✓ **o**	✓ **o**

levels of international importance: Dark-bellied brent goose *Branta bernicla bernicla*																															

Evidence supporting conclusions:

a. **Alteration of coastal processes/sediment transport:** No discernible impact pathway is evident.

b. **Water quality effects – marine environment:** No discernible impact pathway is evident.

c. **Water quality effects – terrestrial environment:** No discernible impact pathway is evident.

d. **Alteration of local hydrology and hydrogeology:** No discernible impact pathway is evident.

e. **Changes in air quality:** No discernible impact pathway is evident.

f. **Changes in air quality:** No discernible impact pathway is evident.

g. **Radiological effects**: No discernible impact pathway is evident.

h. **Direct habitat loss and fragmentation:** No discernible impact pathway is evident.

i. **Disturbance effects on species populations:** No discernible impact pathway is evident.

j. **Disturbance effects on species populations:** Construction (and decommissioning) of the associated development have the potential to affect the qualifying features which use habitats in relatively close proximity to the construction site. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

k. **Disturbance effects on species populations:** Noise and visual stimuli during operation (e.g. from increased traffic and artificial lighting) may have direct and indirect disturbance effects on the Ramsar site qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

l. **Disturbance due to increase in recreational pressure:** No discernible impact pathway is evident.

m. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

n. **In combination effects:** No discernible impact pathway is evident.

o. **In combination effects:** The likely significant in-combination effects (LSIE) screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in LSIE. LSIE cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B3.3: Minsmere-Walberswick Ramsar site

Name of European site and designation: Minsmere to Walberswick Ramsar site

EU Code: UK11044

Distance to NSIP: Adjacent

European site features	**Likely effects of NSIP**																																
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragmen-tation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 1 Mosaic of marine, freshwater, marshland and associated habitats	✓ **a**	✓ **b**	✓ **a**	✓ **c**	✓ **d**	✓ **c**	✓ **h, i**	✓ **h**	✓ **h, i**	✓ **j**	✓ **j**	✓ **j**	✓ **k**	✓ **k**	✓ **k**	x **l**	x **m**	x **l**	x **n**	x **n**	x **n**	**q**	**q**	**q**	✓ **t**	✓ **t**	✓ **t**	**u**	**u**	**u**	✓ **w**	✓ **w**	✓ **w**
Ramsar criterion 2 Supports nine nationally scarce plants and at least 26 red data	✓ **a**	✓ **b**	✓ **a**	✓ **c**	**e**	✓ **c**	✓ **h, i**	✓ **h**	✓ **h, i**	✓ **j**	✓ **j**	✓ **j**	✓ **k**	✓ **k**	✓ **k**	x **l**	x **m**	x **l**	x **n**	x **n**	x **n**	**q**	**q**	**q**	✓ **t**	✓ **t**	✓ **t**	**u**	**u**	**u**	✓ **w**	✓ **w**	✓ **w**

book invertebrates																																
Ramsar criterion 2 An important assemblage of rare breeding birds associated with marshland and reedbeds	✓ **a**	✓ **b**	✓ **a**	✓ **f**	✓ **g**	✓ **f**	✓ **h, i**	✓ **h**	✓ **h, i**	✓ **j**	✓ **j**	✓ **j**	✓ **k**	✓ **k**	✓ **k**	x **l**	x **m**	x **l**	✓ **o**	✓ **p**	✓ **o**	✓ **r**	✓ **s**	✓ **r**	✓ **t**	✓ **t**	✓ **t**	✓ **v**	✓ **v**	✓ **v**	✓ **w**	✓ **w**	✓ **w**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: The qualifying habitats and other species that depend on the habitats could also be affected by potential alteration of coastal hydrodynamics and sediment transport. There is potential for interruption to/alteration of coastal hydrodynamics and sediment transport processes as a result of the influence of marine infrastructure (outfall, intake and coastal defences). Likely Significant Effect cannot be excluded (**Table 5.2, item 1a**) (**Doc Ref 5.10**).

This could affect nesting, foraging and roosting habitats of the qualifying bird features (Ramsar criterion 2) of the Minsmere to Walberswick Ramsar site which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1a**) (**Doc Ref 5.10**).

b. Alteration of coastal processes/sediment transport: The presence of new structures in the marine environment in the operational phase has the potential for a localised effect on coastal processes and sediment transport. Likely Significant Effect cannot be excluded for qualifying habitats (**Table 5.2, item 1b**) (**Doc Ref 5.10**).

This could affect nesting, foraging and roosting habitats of the qualifying bird features (Ramsar criterion 2) of the Minsmere to Walberswick Ramsar which use near-shore and intertidal habitats. Likely Significant Effect cannot be excluded (**Table 5.3, item 1b**) (**Doc Ref 5.10**).

c. Water quality effects – marine environment: Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on habitats

within designated sites along the Minsmere-Walberswick frontage. Likely Significant Effect cannot be excluded (**Table 5.3, item 2a**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. Likely Significant Effect cannot be excluded for habitat qualifying features (**Table 5.2, item 2c**) (**Doc Ref 5.10**).

e. **Water quality effects – marine environment:** No discernible impact pathway is evident.

f. **Water quality effects – marine environment**: Any uncontrolled discharges to the marine environment in the vicinity of Sizewell (including sediment plumes from dredging) could affect water quality, leading to indirect effects on species of the Ramsar bird assemblage which forage in the marine environment, via effect on prey. Likely Significant Effect cannot be excluded (**Table 5.3, item 2a**) (**Doc Ref 5.10**).

g. **Water quality effects – marine environment**: The cooling water discharge would raise ambient water temperature and introduce potential pollutants into the water column. There could be indirect effects on species of the Ramsar bird assemblage which forage in the marine environment, via effects on prey. Likely Significant Effect cannot be excluded (**Table 5.3, item 2d**) (**Doc Ref 5.10**).

h. **Water quality effects – terrestrial environment:** There are direct hydrological connections between the Sizewell C development area and Minsmere-Walberswick (south of the Minsmere New Cut) through the Minsmere Sluice. The potential for direct effects on water quality in the Minsmere South or Minsmere North Levels means that Likely Significant Effect cannot be excluded for those qualifying features dependent on wetland habitats (**Table 5.2, item 3b; Table 5.3, item 3b**) (**Doc Ref 5.10**).

i. **Water quality effects – terrestrial environment:** Any construction activity that interrupts or alters the baseline groundwater regime could potentially change the conditions that support wetland habitat. Likely Significant Effect cannot be excluded for those qualifying features dependent on wetland habitats (**Table 5.2, item 3b and 3c; Table 5.3, item 3b and 3c**) (**Doc Ref 5.10**).

j. **Alteration of local hydrology and hydrogeology:** Any construction (or decommissioning) activities that interrupt or alter the baseline groundwater regime could potentially change the hydrological or hydrogeological properties and, in turn, affect the wetland habitats upon which qualifying features depend. Likely Significant Effect cannot be excluded (**Table 5.2, item 4c; Table 5.3, item 4b**) (**Doc Ref 5.10**). Any effect on local hydrology and hydrogeology arising as a

result of construction has the potential to continue into the operational phase. Likely Significant Effect cannot be excluded (**Table 5.2, item 4f; Table 5.3, item 4e**) (**Doc Ref 5.10**).

k. Changes in air quality: During the construction phase, the main potential emissions would be from road traffic and dust from construction activities which could affect habitats within European sites (**Table 5.2, item 5a**) (**Doc Ref 5.10**). Changes in air quality would not have a direct effect upon bird qualifying features, but effects could arise indirectly on the bird qualifying features supported by these habitats (**Table 5.3, item 5a**) (**Doc Ref 5.10**). Likely Significant Effect cannot be excluded.

During the operational phase, the main potential emissions may arise as a result of increased traffic flows and use of diesel generators for testing or as required. Likely Significant Effect cannot be excluded (**Table 5.2, item 5b; Table 5.3, item 5b**) (**Doc Ref 5.10**).

l. Radiological effects: Background levels around the Sizewell C Main Development Site are negligible and consistent with the results of long-term operator monitoring which is subject to Environment Agency surveillance. Therefore, any disturbance associated with construction or decommissioning is not predicted to give rise to a radiological effect on non-human biota. No Likely Significant Effect is predicted (**Table 5.2, item 6a; Table 5.3, item 6a**) (**Doc Ref 5.10**).

m. Radiological effects: Dose rates are predicted to be lower than the screening value of 10 µGy per hour that is considered protective of populations of non-human biota across all ecosystems. No Likely Significant Effect is predicted (**Table 5.2, item 6b; Table 5.3, item 6b**) (**Doc Ref 5.10**).

n. Direct habitat loss and fragmentation: There is no direct habitat loss of the Ramsar site during construction and no direct habitat loss of terrestrial habitats. No Likely Significant Effect is predicted (**Table 5.2, item 7b**) (**Doc Ref 5.10**).

o. Direct habitat loss and fragmentation: The loss of habitat within the footprint of the Sizewell C development during construction and decommissioning may affect those qualifying features that rely upon supporting habitats outside the Ramsar site. Likely Significant Effect cannot be excluded (**Table 5.3, item 7e**) (**Doc Ref 5.10**).

p. Direct habitat loss and fragmentation: The loss of habitat within the footprint of the Sizewell C development during operation may affect those qualifying features that rely upon supporting habitats outside the Ramsar site. Likely Significant Effect cannot be excluded (**Table 5.3, item 7e**) (**Doc Ref 5.10**).

q. Disturbance effects on species populations: No discernible impact pathway is evident.

r. **Disturbance effects on species populations:** Construction (and decommissioning) activities within the terrestrial and marine environment may have direct and indirect disturbance effects (from both noise and visual stimuli) on the Ramsar qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

s. **Disturbance effects on species populations:** Noise and visual stimuli during operation may have direct and indirect disturbance effects on the Ramsar qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

t. **Disturbance due to increase in recreational pressure:** Minsmere to Walberswick Ramsar site includes many well-used and managed sites for recreational activities. Additional visitors to these locations resulting from the Sizewell C Project would be expected to follow similar behaviours to existing visitors and use the defined path networks/accessible beaches. However, Likely Significant Effect cannot be excluded (**Table 5.3, item 9a; Table 5.3, item 9f**) (**Doc Ref 5.10**).

u. **Physical interaction between species and project infrastructure:** No discernible impact pathway is evident.

v. **Physical interaction between species and project infrastructure:** Direct effects of the project infrastructure on Ramsar qualifying features (e.g. via collisions) are highly unlikely, as are indirect effects to qualifying features (e.g. via effects on prey species) within terrestrial habitats. With specific reference to bittern (for which European eel is an important prey item), no negative effect on the numbers of glass eels or elvers migrating through Sizewell Bay is predicted and therefore, no Likely Significant Effect is predicted. Impingement and entrainment of prey for Ramsar qualifying species which forage in the marine environment will occur as a result of the operation of the cooling water system. Although any such effects are likely to be localised, the scale of these losses will need to be quantified in order to assess the likelihood of any effects. Likely Significant Effect cannot be excluded (**Table 5.3, item 10a**) (**Doc Ref 5.10**).

w. **In combination effects:** The likely significant in-combination effects (LSIE) screening exercise has identified at least one other plan or project that could act in-combination with the operation of the Sizewell C Project to potentially result in LSIE. LSIE cannot be excluded (**Section 5.6**) (**Doc Ref 5.10**).

HRA Screening Matrix B3.4: Stour and Orwell Estuaries Ramsar site

Name of European Site and Designation: Stour and Orwell Estuaries Ramsar Site

EU Code: UK11067

Distance to NSIP: 33.7 km

European Site Features	**Likely Effects of NSIP**																																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Radiologi-cal effects			Direct habitat loss and direct/ indirect habitat fragmen-tation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar Criterion 2 Supports seven nationally scarce plants and five red data book invertebrates	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	**h**	**h**	**h**	**k**	**k**	**k**	**l**	**l**	**l**	**m**	**m**	**m**
Ramsar Criterion 5 Assemblages of international importance: waterfowl	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **i**	✓ **j**	✓ **i**	**k**	**k**	**k**	**l**	**l**	**l**	x **n**	x **n**	x **n**

Ramsar Criterion 6 Species/ populations occurring at levels of international importance	**a**	**a**	**a**	**b**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**e**	**e**	**e**	**f**	**f**	**f**	**g**	**g**	**g**	✓ **i**	✓ **j**	✓ **i**	**k**	**k**	**k**	**l**	**l**	**l**	x **n**	x **n**	x **n**

Evidence supporting conclusions:

a. Alteration of coastal processes/sediment transport: No discernible impact pathway is evident.

b. Water quality effects – marine environment: No discernible impact pathway is evident.

c. Water quality effects – terrestrial environment: No discernible impact pathway is evident.

d. Alteration of local hydrology and hydrogeology: No discernible impact pathway is evident.

e. Changes in air quality: No discernible impact pathway is evident.

f. Radiological effects: No discernible impact pathway is evident.

g. Direct habitat loss and fragmentation: No discernible impact pathway is evident.

h. Disturbance effects on species populations: No discernible impact pathway is evident.

i. Disturbance effects on species populations: Construction (and decommissioning) of the associated development have the potential to affect the qualifying features which use habitats in relatively close proximity to the construction site. Likely Significant Effect cannot be excluded (**Table 5.3, item 8a**) (**Doc Ref 5.10**).

j. Disturbance effects on species populations: Noise and visual stimuli during operation (e.g. from increased traffic and artificial lighting) may have direct and indirect disturbance effects on the Ramsar site qualifying features. Likely Significant Effect cannot be excluded (**Table 5.3, item 8b**) (**Doc Ref 5.10**).

k. Disturbance due to increase in recreational pressure: No discernible impact pathway is evident.

l. Physical interaction between species and project infrastructure: No discernible impact pathway is evident.

m. In combination effects: No discernible impact pathway is evident.

n. In combination effects: The likely significant in-combination effects (LSIE) screening exercise has identified no plan or project that could act in-combination with the construction and decommissioning of the Sizewell C Project to potentially result in LSIE. No LSIE is predicted (**Section 5.6**) (**Doc Ref 5.10**).

Appendix C: Screening of Projects and Scoping of Plans for Likely Significant In-Combination Effect Assessment

Table C.1: Screening other projects for in-combination assessment

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
Marine Management Organisation											
MLA/2016/00463/1	Galloper Wind Farm Ltd	Construction of Galloper Operation and Maintenance Base at Harwich	Consented, construction is underway. To be completed before Q4 2019	Yes	No	Out	Construction period will not overlap.				
MLA/2016/00206 MLA/2016/00275/1	Greater Gabbard Offshore Wind Ltd	Ongoing maintenance of the wind farm – including interarray cable maintenance, operations and maintenance	Approved	Yes	Yes	Out	Licences are for small scale operational maintenance activities for an existing offshore windfarm which is outwith the ZoI for the Sizewell C Project. There is therefore no potential for an in combination effect with the Sizewell C Project.				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
MLA/2019/00363	Greater Gabbard Offshore Wind Ltd	Reinstatement of Safe Fishing Environment, Cable Protection and Scour Remediation works	Under consultation	Yes	No	Out	The proposed works are aim to occur in Q4 2019 or Q1 2020. At a worst case the works will be completed by Q2 2020. The entire operation is anticipated to take no more than 20 days (including mobilisation, demobilisation, weather downtime and time for any delays) based on 24 hrs operations. This will therefore predate the Sizewell C Project.				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
EIA/2018/00052	Environment Agency	Great Yarmouth Flood Defence Scheme – works to be undertaken over a 2 year period begining 2019 to maintain existing tidal flood defences along the rivers Yare and Bure.	Screened out of EIA. No further information available	No	Yes	Out	The proposed works are located a significant distance to the north of the Sizewell C Project, and will involve only very small scale works to be undertaken (e.g. maintenance of existing structures) are very small scale in nature. They will also be completed by 2021.				
MLA/2019/00371	Harwich Haven Authority	Harwich Haven Approach Channel Deepening	Application submitted August 2019. Timeline for dredging activity is January 2021 to December 2023	Yes	Yes	In	Yes – construction timelines could overlap with marine construction	36km to the MDS	Within Within	Southern North Sea SAC - Harbour porpoise Outer Thames	- Disturbance effects on species populations - Water quality effects –

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
							activities associated with the Sizewell C Project. A shadow HRA is available for in-combination assessment			Estuary SPA - Little tern - Common tern - Red-throated diver	marine.
MLA/2019/00371	Harwich Haven Authority	Extension of Inner Gabbard East Disposal site	Application submitted August 2019. Timeline for disposal activity is January 2021 to December 2023	Yes	Yes	In	Yes – deposit activities could overlap with marine construction activities associated with the Sizewell C Project. A shadow HRA is available for in-combination assessment	39km to the MDS	Within	Southern North Sea SAC - Harbour porpoise	- Water quality effects – marine. - Disturbance effects on species populations
									12km	Outer Thames Estuary SPA - Little tern - Common tern - Red-throated diver	

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
MLA/2019/00158	Vattenfall	Kentish Flats Extension Ongoing maintenance activities. The scope of the works will cover operational and maintenance activities in relation to the wind turbines, their associated foundations, inter-array cables and export cables.	Application submitted April 2019. Currently On Hold	No	Yes	Out	Licences are for small scale operational maintenance activities for an existing offshore windfarm which is outwith the ZoI for the Sizewell C Project. There is therefore no potential for an in combination effect with the Sizewell C Project.				
MLA/2019/00156	Vattenfall	Kentish Flats Offshore Wind Farm Ongoing maintenance activities	Application submitted April 2019. Currently On Hold	No	Yes	Out	Licences are for small scale operational maintenance activities for an existing offshore windfarm				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
							which is outwith the ZoI for the Sizewell C Project. There is therefore no potential for an in combination effect with the Sizewell C Project.				
MLA/2016/00181/1	ABP Lowestoft	ABP Lowestoft - Maintenance dredge material disposal	Licence granted August 2016, discharging conditions	Yes	Yes	Out	Activity has started and will be ongoing till March 2026. Considered to be part of the baseline.				
EIA/2017/00057	Waveney District Council	Lowestoft Flood Risk Management Plan	Scoped in to EIA June 2018	Yes	Yes	Out	No further information available – No HRA for in-combination assessment				
MLA/2018/00042 MLA/2018/00417	London Array Ltd	London Array Offshore Wind Farm – Ongoing	MLA/2018/00417 – Licence granted. Ongoing till 30th	Yes	Yes	Out	Licences are for small scale operational				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
MLA/2017/00096/1		maintenance	September 2020 (HRA available) MLA/2017/00096/1 granted in 2017, ongoing to 2039. (HRA available) (MLA/2018/00042 On Hold)				maintenance activities for an existing offshore windfarm which is outwith the ZoI for the Sizewell C Project. There is therefore no potential for an in combination effect with the Sizewell C Project.				
MLA/2018/00216	Environment Agency	Natural Flood Management Suffolk Estuaries	Withdrawn	-	-	Out	Application withdrawn				
MLA/2017/00010/1	Magnox Ltd	Sizewell A Nuclear Power Station – Decommissioning. The site is currently being de-fuelled. Licence for maintenance of offshore intake	Ongoing, further applications expected during decommissioning	Yes	Yes	Out	No HRA or publicly-available information available for in-combination assessment				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		and outfall structures. Ongoing maintenance and decommissioning activities expected									
MLA/2017/00033 (desilting)	EDF Energy Nuclear Development Ltd	SZB Nuclear Power Station Decommissioning Planned decommissioning of SZB power station. Decommissioning is anticipated to commence in 2035. Current licence for de-silting and maintenance works	Consented – this licence expires December 2035	Yes	Yes	In	The desilting activity is normally carried out during statutory outages at a 3-year interval frequency. It takes approximately 12 days to complete the work, with de-silting occurring intermittently during this period.	0km to MDS	0km	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations - Water quality effects – marine.
									0km	Outer Thames Estuary SPA - Little tern - Common tern - Red-throated diver	
MLA/2015/00462	Balfour Beatty	Thanet Offshore Wind Farm Ongoing	Consented. Covers activities up to 1st February 2036	Yes	Yes	Out	Works are ongoing and considered				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		Maintenance Works	(included in HRA for consented windfarm)				part of the baseline.				
MLA/2018/00469	Suffolk Yacht Harbour	Levington Saltmarsh Restoration and beneficial use of dredgings project 2018	Consented – granted in 1st February 2019, expires 31st March 2024	Yes	Yes	Out	Effects of the dredgings discharge are considered in the Harwich Haven Authority maintenance dredging protocol baseline document for the Stour & Orwell Estuaries. No adverse effect on integrity is predicted from the wider maintenance dredging and disposal regime, which includes this scheme.				

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
MLA/2019/00036	ABP	Refurbishment and Resurfacing of Slipway in Lowestoft Inner Harbour Area	Consented. Licence expires January 2020	Yes	No	Out	Small scale and will be completed prior to Sizewell C Project.				
MLA/2019/00065	Greater Gabbard Offshore Wind	Pontoon installation at Lowestoft	Consented. Works to be completed by September 2019.	Yes	No	Out	Small scale and will be completed prior to Sizewell C Project.				
MLA/2018/00551 MLA/2018/00550	East Anglia ONE Ltd	Operations and Maintenance Marine Licence applications for Generation and Transmission Assets. Licence to commence on 1st August 2019 and expire by May 2045	Submitted (in progress). Would be operational until 2045.	Yes	Yes	In	The applicant has concluded no LSE for the proposed project, though this is still under determination by the MMO.	11km from cable corridor. 48km from windfarm site to nearest seaward point. 52km from wind farm site	Within	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations
									0.5km	Alde-Ore Estuary SPA - Avocet - Little tern - Marsh harrier - Sandwich tern - Lesser black-backed gull	- Water quality effects – marine.

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								to MDS		- Redshank - Ruff	
									2km	Deben Estuary SPA - Dark-bellied Brent goose - Avocet	- Disturbance effects on species populations
Planning Inspectorate											
PINS	East Anglia ONE Ltd	East Anglia ONE Offshore Wind Farm Development of an offshore wind farm consisting of up to 325 wind turbine generators and associated infrastructure, with an installed capacity of 1200MW	Consented – First energy generation planned before end 2020	Yes	Yes	In	The project will be operational by the end of 2020; further assessment of the operational phase effects is required.	9km from cable corridor. 50km from windfarm site to MDS.	Within	Outer Thames Estuary SPA - Red-throated diver	- Disturbance effects on species populations
PINS	Scottish Power Renewables (UK) Ltd	East Anglia ONE North Offshore Wind Farm. An offshore wind	Application submitted October 2019. Shadow HRA is available.	Yes	Yes	In	Construction programmes could overlap, further	0km from cable corridor. 50km	Within	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations

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		farm which could consist of up to 115 turbines, generators and associated infrastructure, with an installed capacity of 600MW to 800MW					assessment is required.	from windfarm site to MDS 45km to seaward extent			- Water quality effects – marine. - Physical interaction between species and Project infrastructure
									Within	Sandlings SPA - Nightjar - Woodlark	- Disturbance effects on species populations - Direct habitat loss and fragmentation.
									102km	The Wash and North Norfolk Coast SAC - Harbour seal	- Disturbance effects on species populations - Physical interaction between species and Project infrastructure
									173km	Humber Estuary SAC - Grey seal	

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PINS	Scottish Power Renewables (UK) Ltd	East Anglia TWO Offshore Wind Farm An offshore wind farm which could consist of up to 115 turbines, generators and associated infrastructure, with an installed capacity of 600MW to 800MW	Application submitted October 2019. Shadow HRA is available.	Yes	Yes	In	Construction programmes could overlap, further assessment is required.	0km from cable corridor. 30 or 35km from windfarm site to MDS	Within	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations - Water quality effects – marine. - Physical interaction between species and Project infrastructure
									Within	Sandlings SPA - Nightjar - Woodlark	- Disturbance effects on species populations - Direct habitat loss and fragmentation.
									100km	The Wash and North Norfolk Coast SAC - Harbour seal	- Disturbance effects on species populations - Physical
									173km	Humber Estuary	

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										SAC - Grey seal	interaction between species and Project infrastructure
PINS	East Anglia THREE Ltd	East Anglia THREE Offshore Wind Farm Development of an offshore windfarm with an approximate capacity of 1200MW off the coast of East Anglia	Development consent was granted in August 2017. Construction expected to commence in 2021.	Yes	Yes	In	Construction programmes could overlap, an HRA for EA THREE is available for the assessment	11km from cable corridor. 80 or 85km from windfarm site to MDS	Within	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations - Water quality effects – marine. - Physical interaction between species and Project infrastructure
PINS Reference TR010043	Norfolk City Council	Great Yarmouth Third River Crossing A new highway crossing of River Yare, Great Yarmouth, connecting Harfrey's	Application was accepted for Examination on 28th May 2019	Yes	Yes	In	Construction programmes could overlap. HRA is available for in-combination assessment.	75 km to the MDS	Within	Outer Thames Estuary SPA - Little tern - Common tern - Red-throated diver	- Water quality effects – marine.
									0.7km direct	Southern North	

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		Roundabout to the west of the River Yare with South Denes Road to the east of the River Yare.							3km down stream	Sea SAC - Harbour porpoise	
PINS Reference EN010079	Norfolk Vanguard Ltd	Norfolk Vanguard Offshore Wind Farm Norfolk Vanguard is a proposed offshore windfarm with an approximate capacity of 1800MW off the coast of Norfolk.	Examination closed on 10th June 2019	No	Yes	In	Construction programme could overlap. HRA is available for in-combination assessment.	94 or 97km from wind farm site to MDS. 60km from cable route to MDS.	Within	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations - Water quality effects – marine. - Physical interaction between species and Project infrastructure
									27km	The Wash and North Norfolk Coast SAC - Harbour seal	- Disturbance effects on species populations - Water quality effects – marine. - Physical

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											interaction between species and Project infrastructure
									106km	Humber Estuary SAC - Grey seal	- Disturbance effects on species populations - Physical interaction between species and Project infrastructure
PINS Reference EN010087	Norfolk Boreas Ltd	Norfolk Boreas Offshore Wind Farm Maximum Capacity 1.8GW also associated infrastructure required to export the electricity to the National Grid substation at Necton in Norfolk	Application submitted and accepted for Examination 4th July 2019	No	Yes	In	Construction programme could overlap. HRA is available for in-combination assessment.	103 or 105km from wind farm site to MDS. 60 km from cable route to MDS	Within	Southern North Sea SAC - Harbour porpoise	- Disturbance effects on species populations - Water quality effects – marine. - Physical interaction between species and Project

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											infrastructure
									27km	The Wash and North Norfolk Coast SAC - Harbour seal	- Disturbance effects on species populations - Water quality effects – marine. - Physical interaction between species and Project infrastructure
									106km	Humber Estuary SAC - Grey seal	- Disturbance effects on species populations - Physical interaction between species and Project infrastructure
PINS Reference EN010084	Vattenfall Wind Power Ltd	Thanet Extension Offshore Wind	Examination closed on 11th	No	Yes	In	Construction could overlap.	82km to the MDS	Within	Southern North Sea SAC	- Disturbance effects on

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		Farm An offshore wind generating station of capacity up to 340 MW.	June 2019. The Secretary of State has set a new deadline for a decision (1 June 2020)				HRA is available for in-combination assessment			- Harbour porpoise	species populations - Water quality effects – marine. - Physical interaction between species and Project infrastructure
PINS Reference TR010023	Suffolk County Council	Lake Lothing Third Crossing A new highway crossing of Lake Lothing	Examination closed on the 5th June 2019	No	Yes	In	Construction period could overlap. HRA is available for in-combination assessment	29km to the MDS	1.3km	Southern North Sea SAC - Harbour porpoise	- Water quality effects – marine.
									1.3km	Outer Thames Estuary SPA - Little tern - Common tern - Red-throated diver	- Water quality effects – marine.
PINS Reference EN020023	National Grid Ventures	Nautilus Interconnector Proposed second	Pre-application Application is expected to be	No	Yes	Out	Not enough information is currently publicly				

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		interconnector between Great Britain and Belgium. It would create 1.4 gigawatts high voltage direct current. Elia and NGIHL are conducting a bilateral feasibility study and more information will be available in the future development plans. Connecting in the Leiston area is the preferred option for connection. Further detailed consideration of siting options are being considered. The project is currently at the scoping stage.	submitted to the Planning Inspectorate Q2 2022				available to inform an in-combination assessment.				

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		Installation may commence in 2026 with connection in 2028									
-	National Grid Ventures	Eurolink Interconnector Proposed interconnector between UK and the Netherlands. Connecting in the Leiston area is the preferred option for connection. Further detailed consideration of siting options are being considered. The Project is currently at the scoping stage. Likely to connect in 2025	No further information currently available.	No	Yes	Out	Not enough information is currently publicly available to inform an in-combination assessment.				

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-	SSE	Greater Gabbard Extension Expansion of the Greater Gabbard Offshore Wind Farm to create the UK's largest Offshore Wind Farm. Located 27km from Suffolk coast. Cable landfall is planned at Sizewell, adjacent to the Greater Gabbard landfall site. Crown Estate expected to give a lease for the project summer 2019	No further information currently available.	Yes	Yes	Out	Crown Estate Plan-level HRA on 2017 wind farm extensions available (offshore sites only) Insufficient information is available for an in-combination assessment.				

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-	Galloper Wind Farm Ltd	Galloper Extension Expansion of the Galloper Offshore Wind Farm. Crown Estate expected to give a lease for the project in summer 2019	No further information currently available.	Yes	Yes	Out	Crown Estate Plan-level HRA on 2017 wind farm extensions available (offshore sites only) Insufficient information is available for an in-combination assessment.				
Crown Estate											
-	Hanson Aggregates Marine Ltd	Proposed aggregate extraction sites in the study area (i.e. between Lowestoft and Ipswich) – New 495 (Area 525) Thames D (Area	No assessment of effects has been completed to date. However, a Scoping Report is available for the Thames D area.	New 495 – 51km; Outer OTE – 60km and Thames D – 61km	Yes	Out	Insufficient information is available to inform an in-combination assessment				

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		524) Outer OTE (Area 528/2)		from MDS.							
East Suffolk Council											
DC/17/1605/FUL 21	Armstrong Rigg Planning	Full planning application for residential development of 65 dwellings (including 21 affordable units) with associated vehicular access, landscaping, open space, car parking and pedestrian links	Planning Application was approved March 2018	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C. HRA is available for assessment	800m to MDS	1km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
DC/16/2104/OUT 28	Mr Rob Snowling	Erection of up to 77 new homes with associated access, infrastructure, landscaping and amenity space (all matters to be reserved except	Planning application approved 29/06/17 with Reserved Matters. No Reserved Matters application submitted	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	927m to MDS	2.45km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
									4km	Minsmere-Walberswick SPA - Avocet	

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		for access).								- Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									4km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	

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									4km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
DC/16/1961/OUT 29	Johnson's Farm	An outline planning application for up to 187 dwellings to include car parking, open space provision with associated infrastructure and	Planning Application approved. Further application DC/19/1883/ARM pending consideration.	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	1.3km to MDS	3km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
									4.3km	Minsmere-Walberswick SPA - Avocet	

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		access.								- Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									4.3km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	

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									4.3km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
DC/16/1322/OUT 30	Limitbrook Ltd	Outline Application - 100 new residential units (C3) with employment floorspace (B1) (approx. 1000m2) and family orientated public house / restaurant	Planning Application approved 21/06/2017 with Reserved Matters. No Reserved Matters application submitted		Yes	In	Increase in local population overlapping with construction of Sizewell C.	431m to MDS	2km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
									3.25km	Minsmere-Walberswick SPA - Avocet	

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		(A3/A4) (approx.770m2)								- Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									3.25km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	

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									3.25km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
DC/16/0931/FUL 31	Mr Richard Buss	Erection of 18 dwellings including parking and external works.	Approved.	Yes	Yes	Out	Increase in local population overlapping with construction of Sizewell C.	165m to MDS			
DC/17/3620/PN41	Environment Agency	Shingle Recycling from Sudbourne Beach to	Approved with Prior Approval required	Yes	Yes	In	Construction periods could overlap for a	8.8km to MDS	Within	Orfordness-Shingle Street SAC	- Alteration of coastal processes.

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		Slaughden Sea defences for the period October 2017- October 2021.					short period in 2021.			- Annual vegetation of drift lines	- Water quality – marine envionrment.
DC/18/2325/FUL 47	Hopkins and Moore (Developments) Limited	Residential Development of 40 Dwellings, together with associated access roads, garaging and car parking	Awaiting Decision – 06/09/2018	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	1.5km to MDS	1km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
									4.3km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	

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									4.3km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
									4.3km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrate	

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										s and breeding birds	
DC/16/3947/OUT 77	Mr Gareth Nixon-Moss	Erection of 14 sheltered/extra care dwellings, together with residents lounge/meeting room and parking area	Conditionally allowed on appeal (29/04/2019)	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	4.5km to MDS	2.88km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	- Disturbance due to increased recreational pressure
									2.88km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation	

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										of drift lines - European dry heaths - Perennial vegetation of stony banks	
									2.88km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									2.88km	Minsmere-Walberswick	

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										SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
DC/18/2621/FUL 136	Ashenden Architecture Ltd.	Erection of 44no. new dwellings with associated new access road.	Application Permitted August 2019	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	6km to MDS	6.5km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier	- Disturbance due to increased recreational pressure

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										- Shoveler - Teal - Gadwall White-fronted goose	
									6.5km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
									6.5km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland	

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										habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									8km	Sandlings SPA - Nightjar - Woodlark	
DC/18/0702/FUL 143	Hopkins Homes Ltd	Residential development of 59 residential dwellings and associated landscaping and public open space, together with a new vehicular access from existing development and associated highway	Application permitted March 2019	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	5.5km to MDS	6.7km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal	- Disturbance due to increased recreational pressure

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		infrastructure								- Gadwall - White-fronted goose	
									6.7km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
									6.7km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats	

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										- Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									7.2km	Sandlings SPA - Nightjar - Woodlark	
									3.2km	Sandlings SPA - Nightjar - Woodlark	
DC/17/4188/EIA 279	Site SSP12 Rendlesham Suffolk	Screening opinion - erection of up to 75 dwellings	EIA not required (26/10/2016)	Yes	Yes	Out	No information available for in-combination assessment				
DC/18/4525/SCO 337	Not available	Request for an Environmental Impact Assessment scoping opinion - for the development of	EIA required (20/12/2018). No further information available.	Yes	Yes	Out	No information available to inform in-combination assessment				

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		circa 2,700 no. Residential dwellings, the associated access, local employment, local retail, leisure and community facilities, land for primary education facilities, health and care provision, and supporting amenity space, landscaping, green infrastructure and sustainable drainage systems.									
DC/15/4696/DCO 366	Scottish Power Renewable Energy Limited	Application by East Anglia THREE Limited for an Order Granting Development Consent for the East Anglia THREE Offshore	Approved 25/04/2018		Yes	Out	Although construction periods could overlap, the project is located some distance from both the Sizewell C				

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		Wind Farm. Underground Cabling Between Bramford And Bawdsey					Project MDS and also associated development sites, and as such no in-combination impacts upon European sites are predicted.				
DC/17/3981/OUT 433	Christchurch Land & Estates (Halesworth) Limited	Outline Application (Some Matters Reserved) - Construction of upto 200 dwellings including car parking, open space provision with associated infrastructure and access	Approved with Reserved Matters (24/05/2019	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	13.7km to MDS	7.2km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted	- Disturbance due to increased recreational pressure

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										goose	
									7.2km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									8km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European	

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										dry heaths - Perennial vegetation of stony banks	
DC/16/5410/OUT 445	Hopkins Homes	Outline Application (with all matters other than means of access reserved) for residential development of up to 160 dwellings with the provision of a new meadow, additional site wide open space and landscaping, land to enable an extension to the existing cemetery and vehicular accesses off Hill Farm Road	Approved with reserved matters (07/03/2018)	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	13.3km to MDS	6km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	- Disturbance due to increased recreational pressure
									6km	Minsmere-Walberswick Ramsar site	

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										- Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									7km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
DC/19/1141/OUT 545	Mr Denny and Lucas	Outline Application - Development of up to 220 dwellings with associated open space	Awaiting Decision	Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	12km to MDS	1.74km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	- Disturbance due to increased recreational pressure
									1.74km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats	

Licence ref.	Developer	Project title and description	Current status and availability of information	Spatial link to the Sizewell C Project	Temporal link to the Sizewell C Project	Screened in to or out of the assessment	Justification for screening decision	Distance to Sizewell C Project site	Approximate distance to European sites	European sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										- Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									2km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	

Allocations / Plans

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
East Suffolk Council											
Site Allocations and Area Specific Policies Development Plan Document - East Suffolk	Kelsale cum Carlton	1.86ha of land south of Ambleside, Main Road Kelsale cum Carlton, is identified for residential use for approximately 30 units although a higher quantum of development may be appropriate subject to design and layout.		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	6km to MDS	6.4km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	- Disturbance due to increased recreational pressure
									6.4km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal	

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										- Gadwall - White-fronted goose	
									6.4km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									7.8km	Sandlings SPA - Nightjar - Woodlark	
	Rendlesham	5.05ha of land west of Garden Square,		Yes	Yes	In	Increase in local population overlapping with	14.2 km	1.78km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		Rendlesham, is identified for a mixed residential development and greenspace provision for approximately 50 units.					construction of Sizewell C.		4.47km	Alde-Ore Estuary SPA - Avocet - Little tern - Marsh harrier - Sandwich tern - Lesser black-backed gull - Redshank - Ruff	recreational pressure
	Rendlesham	4.3ha of land to the east of Redwald Road, Rendlesham, is identified for residential use for approximately 50 units		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	13.7km to MDS	1.78km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
									4.47km	Alde-Ore Estuary SPA - Avocet - Little tern - Marsh harrier - Sandwich tern - Lesser black-backed gull - Redshank	

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										- Ruff	
Suffolk Coastal District Council's Final Draft Local Plan	-	The Final Draft Local Plan, covering the period to 2036, contains planning policies and site allocations which will be used to determine planning applications in the area. It sets out the level of growth which needs to be planned for and identifies where this should be located.		Yes	Yes	Out	Screened out of incombination assessment potential impacts from recreational disturbance are covered by the Suffolk Recreational Avoidance and Mitigation Strategy (RAMS).				
East Suffolk emerging Local Plan	Saxmundham	Approximately 66.6ha of land for a garden neighbourhood is identified to the south of		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	6.5km to MDS	4.6km 4.8km	Sandlings SPA - Nightjar - Woodlark Alde-Ore Estuary	- Disturbance due to increased recreational pressure

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		Saxmundham, which includes land within the parish of Benhall, for an education led development, comprising primary school provision, community facilities, employment land and open space alongside a variety of residential development. This new development will be delivered through a master plan approach brought forward through landowner collaboration and community								SPA - Avocet - Little tern - Marsh harrier - Sandwich tern - Lesser black-backed gull - Redshank - Ruff	

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		engagement.									

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
	Trimley St Martin	A large scale employment allocation of approximately 67ha is identified on the western part of the site at Innocence Farm for port related businesses and operations to support the continued viability of the Port of Felixstowe as outlined in the Port of Felixstowe Growth and Development Needs Study (2018), and other related activities including HGV parking. Proposals which provide small scale complementary uses which serve the ancillary needs of the businesses operating at this site will be supported		Yes	Yes	Out	Not enough information is currently publicly available to inform an in-combination assessment.				

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
	Benhall	1.76ha of land south of Forge Close between Main Road and Ayden, Benhall, as shown on the Policies Map, is identified for the development of approximately 50 dwellings		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	6.8km to MDS	4km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
									8.6km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
									8.6km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler	

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										- Teal - Gadwall - White-fronted goose	
									8.6km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
	Darsham	7.33ha of land to the south of Darsham Station, as shown on the Policies Map, is identified for the		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	6.3km to MDS	4.1km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines	- Disturbance due to increased recreational pressure

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		development of approximately 120 dwellings and open space.								- European dry heaths - Perennial vegetation of stony banks Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater	

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										and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
	Darsham	1.11ha of land north of The Street, Darsham, as shown on the Policies Map, is identified for the development of approximately 25 dwellings		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	6.1km to MDS	2.5km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	- Disturbance due to increased recreational pressure
									2.5km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar	

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										- Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									2.5km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
	Eyke	3.47 ha of land to the south of Eyke CoE		Yes	Yes	In	Increase in local population overlapping with	17.2km to MDS	0.5	Sandlings SPA - Nightjar	- Disturbance due to increased

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		Primary School and east of The Street, Eyke as shown on the Policies Map, is identified for a residential-led mixed use development incorporating approximately 65 dwelling					construction of Sizewell C.			- Woodlark	recreational pressure
	Pettistree	6.15ha of land between High Street and Chapel Lane, Pettistree (adjoining Wickham Market) is identified for the development of approximately 150 dwellings.		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	16.3km to MDS	4km	Sandlings SPA - Nightjar - Woodlark	- Disturbance due to increased recreational pressure
	Westleton	0.73ha of land to the west of the B1125, Westleton, as		Yes	Yes	In	Increase in local population overlapping with construction of	3.4km to MDS	0.6km	Minsmere to Walberswick Heaths and Marshes SAC	- Disturbance due to increased recreational

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		shown on the Policies Map, is identified for the development of approximately 20 dwellings.					Sizewell C.			- Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	pressure
									0.6km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									0.6km	Minsmere-Walberswick Ramsar site	

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										- Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
	Westleton	1.21ha of land at Cherry Lee, Darsham Road, as shown on the Policies Map, is identified for the development of approximately 15 dwellings		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	4km to MDS	0.8km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	- Disturbance due to increased recreational pressure
									0.8km	Minsmere-Walberswick SPA	

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										- Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									0.8km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding	

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
										birds	
Waveney District Council (now part of East Suffolk Council)											
Waveney Local Plan (still in force until the East Suffolk Plan is prepared)	Halesworth and Holton	WLP4.1. Mixed use development. 22.05ha. Approx. 215 dwellings, health care/retirement 2.3ha, sports 8.6ha, education facility		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	13.8km to MDS	6.3km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	- Disturbance due to increased recreational pressure
									6.3km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats	

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										- Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									7.4km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
		WLP4.5. Land at Dairy Farm, Saxons Way, Halesworth (1.44 hectares) as identified on the Policies Map is allocated for a		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	13.3km to MDS	6.5km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier	- Disturbance due to increased recreational pressure

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		residential development of approximately 40 dwellings and a community centre and pre-school setting.								- Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	
									6.5km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									7.4km	Minsmere to Walberswick Heaths and Marshes SAC - Annual	

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										vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
		WLP4.4. Land west of Lodge Road, Holton (0.70 hectares) as identified on the Policies Map is allocated for a residential development of approximately 15 dwellings.		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	13.3km to MDS	4.4km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	- Disturbance due to increased recreational pressure
									4.4km	Minsmere-Walberswick Ramsar site - Criterion 1 –	

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										marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
									6.6km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	

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	Wrentham	WLP7.8. Land north of Chapel Road, Wrentham. Residential. 4.82ha. Approx 60 dwellings and open space		Yes	Yes	In	Increase in local population overlapping with construction of Sizewell C.	17.1km to MDS	6.2km	Minsmere-Walberswick SPA - Avocet - Bittern - Nightjar - Little tern - Marsh harrier - Hen harrier - Shoveler - Teal - Gadwall - White-fronted goose	- Disturbance due to increased recreational pressure
									6.2km	Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants,	

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										invertebrates and breeding birds	
									6.2 km	Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - European dry heaths - Perennial vegetation of stony banks	
Suffolk County Council											
Suffolk Shoreline Management Plan (SMP7)	Lowestoft Ness to Felixstowe Landguard Point	The Sizewell C project lies within Policy Development Zone (PDZ) 4: Dunwich Cliffs to Thorpeness, sub management zone MIN13.1. The policy within this Policy Unit is	SMP available online, including updates to policy where applicable.	Yes	Yes	In	The proposed Sizewell C project could be affected by policy changes, such as at Policy Unit ORF 15.1 - Sudbourne Beach (south of the Martello Tower), where the previous policy may be	Adjacent	Adjacent	Alde-Ore and Butley Estuaries SAC - Estuaries - Mudflats and sandflats not covered by seawater at low tide - Atlantic salt	- Water quality effects – marine. - Alteration of coastal processes

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		to Hold The Line (HTL) (SCDC, 2010).					changed from No Active Intervention (NAI) from 2025 to breach, no breach or temporary breach.			meadows Alde-Ore Estuary SPA - Avocet - Little tern - Marsh harrier - Sandwich tern - Lesser black-backed gull - Redshank - Ruff Alde-Ore Estuary Ramsar site - Ramsar criterion 2 Nationally-scarce plant species and British Red Data Book invertebrates - Ramsar	

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										criterion 3 The site supports a notable assemblage of breeding and wintering wetland birds - Ramsar criterion 6 Species/ populations occurring at levels of international importance	
										Benacre to Easton Bavents SPA - Little tern	
										Benacre to Easton Bavents Lagoons SAC - Coastal lagoons	
										Minsmere-Walberswick SPA - Little tern	

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										Minsmere-Walberswick Ramsar site - Criterion 1 – marine, freshwater and marshland habitats - Criterion 2 – nationally scarce plants, invertebrates and breeding birds	
										Minsmere to Walberswick Heaths and Marshes SAC - Annual vegetation of drift lines - Perennial vegetation of stony banks	

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										Orfordness-Shingle Street SAC - Annual vegetation of drift lines	
Waste Core Strategy	Thorington	Site 67, Thorington – non-hazardous landfill		Yes	Unknown	Out	Not enough publicly available information exists to undertake an in combination assessment	7.5km to MDS			
Suffolk Minerals and Waste Local Plan	-	The Suffolk Minerals & Waste Local Plan contains planning policies for determining planning applications for minerals and waste development, as well as safeguarding the same from other forms of completing		Yes	Yes	Out	Of four sites identified, only one is of relevance to the in-combination assessment with Sizewell C: • Policy MP2/MS7, site M7 Wangford The 'Suffolk Minerals & Waste Local Plan Habitats Regulation Asesment (including Appropriate Assessment) (Suffolk	n/a			

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		development. Policies include those that specify sites for future minerals and waste development. Plan will run till 2036.					County Council, 2018) has identified no other plans or project which would have effects in combination with the Suffolk Minerals and Waste Local Plan. The alone assessment of the Plan screened in potential effects on Minsmere-Walberswick European sites in to the appropriate assessment. The conclusion of the AA stated that "all measures are in place to ascertain that there would be no adverse affect upon the integrity of any European site."				
Suffolk Coast and Heaths											
Suffolk Coast	-	The 2018-2023		Yes	Yes	Out	The plan period	0km			

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and Heaths AONB Management Plan		Management Plan was published in 2018. It sets out the management objectives for the AONB and the policies for the area.					overlaps with the proposed construction period for Sizewell C and may interact with any recreational disturbance effects from Sizewell C. However, the plan is designed to alleviate such recreational disturbance and, as such, it can be concluded that there will not be an adverse in-combination effect with the Sizewell C Project.				
Other Plans											
England Coast Path	-	Sizewell is located within Section 5 - Aldeburgh to Hopton-on-Sea. NE is currently in Stage 2 and 3: Develop and Propose. After final discussions		Yes	Yes	Out	Management and construction periods could overlap, however there is very limited publicly available information on the potential route to be followed. Therefore, an in-combination	0km			

Source / Developer	Location	Project title and description	Current status and availability of information	Spatial link to the project	Temporal link to the project	Screened in to or out of the assessment	Justification for screening decision	Distance to project site	Approximate distance to European Designated Sites	European Designated Sites and qualifying features where in-combination effects have the potential to occur	Potential impact pathways
		with those who have a legal interest the proposals to improve access to this stretch of coast will be finalised and published in a report to the SoS for Defra.					assessment can not be carried out.				

Appendix D: Integrity Matrices

Habitats Regulations Assessment

Appendix D1: Planning Inspectorate HRA Integrity Matrices for SACs

STAGE 2: EFFECTS ON INTEGRITY

Likely **significant** effects have been identified for the following sites:

- Alde-Ore and Butley Estuaries SAC
- Benacre to Easton Bavents Lagoons SAC
- Dew's Ponds SAC
- Humber Estuary SAC
- Minsmere to Walberswick Heaths and Marshes SAC
- Orfordness to Shingle Street SAC
- Staverton Park and the Thicks, Wantisden SAC
- Southern North Sea SAC
- The Wash and North Norfolk Coast SAC
- Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI
- Unterweser SCI
- Weser bei Bremerhaven SCI
- Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI
- Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI
- Unterelbe SCI
- Mühlenberger Loch/Neßsand SCI
- Rapfenschutzgebiet Hamburger Stromelbe SCI
- Hamburger Unterelbe SCI
- Elbe zwischen Geesthacht und Hamburg SCI

These sites have been subject to further assessment in order to establish if the nationally significant infrastructure project (NSIP) could have an adverse effect on their integrity. Evidence for the conclusions reached on integrity is detailed within the footnotes to the matrices below.

Matrix Key

✓ **=** Adverse effect on integrity **cannot** be excluded

× = Adverse effect on integrity **can** be excluded

C = construction
O = operation
D = decommissioning

Where effects are not relevant to a particular feature the matrix cell has been formatted as follows:



HRA Integrity Matrix D1.1: Alde-Ore and Butley Estuaries SAC

Name of European site and designation: Alde-Ore and Butley Estuaries SAC																		
EU Code: UK0030076																		
Distance to NSIP: 6.5 km																		
European site features	**Adverse effect on integrity**																	
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environment			Water quality effects – terrestrial environment			Alteration of local hydrology and hydrogeology			Changes in air quality			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1130 Estuaries	x **a**	x **a**	x **a**		x **b**		x **c**			x **d**	x **d**		x **e**	x **f**	x **e**		x **g**	
1140 Mudflats and sandflats not covered by seawater at low tide	x **a**	x **a**	x **a**		x **d**		x **c**			x **d**	x **d**		x **e**	x **f**	x **e**		x **g**	
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	x **a**	x **a**	x **a**		x **d**		x **c**			x **d**	x **d**		x **e**	x **f**	x **e**		x **g**	

a. Alteration of coastal processes/sediment transport: The changes in tidal currents, waves and sediment transport would be confined to the local area around the sources of disturbance and there would be no change to coastal processes and sediment transport of the 'estuaries', 'mudflats and sandflats' and 'Atlantic salt meadows' qualifying features. Suspended sediment concentrations (SSCs) from dredging would reduce to background levels within four days after

dredging ceases (see **section 7.3 and 7.4 b i**) (**Doc Ref 5.10**). It is, therefore, concluded that the construction, operation and decommissioning activities of the Sizewell C Project would not adversely affect the integrity of the Alde, Ore and Butley Estuaries SAC from changes to coastal processes and sediment transport.

b. Water quality effects – marine environment: Marine and coastal habitats could be affected by changes in water quality during the operational phase due to discharge activities from the cooling water system, with respect to the thermal, chemical and moribund biota discharges. Hydrodynamic modelling has demonstrated that the extent of the Sizewell C thermal and chemical plumes do not intersect with the SAC (see **section 7.4 b ii**) (**Doc Ref 5.10**).

The waters off Sizewell C are well mixed vertically, facilitating reaeration at the surface, background dissolved oxygen levels are high, and the water exchange rate of the Greater Sizewell Bay is enough to limit the extent and duration of any oxygen reduction from the input loading of BOD from biomass discharged from the fish return system (i.e. dead fish). (see **section 7.4 b ii**) (**Doc Ref 5.10**).

It is, therefore, concluded that the operational activities of the Sizewell C Project would not adversely affect the integrity of the Alde, Ore and Butley Estuaries SAC due to changes in marine water quality.

c. Water quality effects – terrestrial environment: During screening it was identified that the construction of the Two Village Bypass could have **significant** effect on the River Alde. The construction of the crossing would be carried out in line with the Code of Construction Practice (CoCP). The CoCP would be informed by relevant environmental legislative requirements and comply with current standards, construction and operational experience and the commitments of the EIA process; securing mitigation measures that are not secured by any other means. Excavated materials generally would not be stored in areas of high flood risk to avoid sediment loss during flooding. This mitigation would ensure that there is no significant impact on the water quality of the River Alde associated with the construction of the bridge (see **section 7.4 b iii**) (**Doc Ref 5.10**). It is, therefore, concluded that the construction activities of the Sizewell C Project would not adversely affect the integrity of the Alde, Ore and Butley Estuaries SAC from changes to terrestrial water quality.

d. Alteration of local hydrology and hydrogeology: During screening it was identified that the construction and operation of the Two Village Bypass could have **significant** effect on the River Alde. A buffer distance of at least 10 m would be maintained during construction and operation of the crossing from the toe of the bank of the River Alde and adjoining ditches, where feasible, to protect the integrity of the banks as well as the associated ecological features. The design of the crossing is such that there would be no direct disturbance to the river (see **section 7.4 b iv**) (**Doc Ref 5.10**). Based on the design of the crossing and the embedded mitigation proposed, an effect on hydrological processes from its construction and operation on the Alde, Ore and Butley Estuaries SAC is not predicted.

e. **Changes in air quality:** The study area for the assessment of dust impacts during construction is based on the criteria detailed in the Institute of Air Quality Management (IAQM) guidance. The IAQM guidance states that ecological receptors within 50 m of potential dust sources, 50 m of the routes used by construction vehicles on the public highway and within 500 m of construction site access require assessment; beyond these distances, dust effects from construction activities can be expected to be negligible. Hence the Alde, Ore and Butley Estuaries SAC falls beyond the study area for the assessment of dust emissions and no further consideration of construction or decommissioning dust is necessary (see **section 7.4 b v**) (Doc Ref 5.10).

f. **Changes in air quality:** The modelling of the combustion scenarios as reported in **Environmental Statement** (**ES) Volume 2, Chapter 12:** air quality, predicts that for NOx (long-term) and NOx (short-term), the Process Contribution (PC) would be 0.2% and 7% of the Critical Level respectively and, therefore, **not significant**. For SO_2 (long-term), the PC would be 0% of the Critical Level and, therefore, **not significant**. From this, it can be concluded that the Critical Level would not be exceeded for the qualifying features of the Alde, Ore and Butley Estuaries SAC. In addition, the Critical Load for nutrient nitrogen deposition would not be exceeded, with the PC predicted to be 0.03% of the Critical Load. On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of these qualifying features due to changes in air quality during the operational phase (see **section 7.4 b v**) (Doc Ref 5.10).

g. **In-combination effects:** The screening process identified one other plan/project that could have an in-combination effect with the qualifying features of the SAC: Suffolk Shoreline management Plan (SMP7). Given the proposed management approaches outlined within the preliminary assessment of the SMP, none of them have the potential to cause an in-combination effect with the construction, commissioning, operational and decommissioning activities of the Sizewell C Project (see **section 7.4 e**) (Doc Ref 5.10). Therefore, it is predicted that an in-combination effect on coastal processes and water quality would not arise due to the Sizewell C Project and the outcomes of the Suffolk SMP.

HRA Integrity Matrix D1.2: Benacre to Easton Bavents Lagoons SAC

Name of European site and designation: Benacre to Easton Bavents Lagoons SAC									
EU Code: UK0013104									
Distance to NSIP: 14.6 km									
European site features	**Adverse effect on integrity**								
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environment			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1150 Coastal lagoons * Priority feature	x **a**	x **a**	x **a**		x **b**		x **c**	x **c**	x **c**

a. Alteration of coastal processes/sediment transport: The changes in tidal currents, waves and sediment transport would be confined to the local area around the sources of disturbance and there would be no change to coastal processes and sediment transport of the coastal lagoons qualifying features. Suspended sediment concentrations (SSCs) from dredging would reduce to background levels within four days after dredging ceases (see **section 7.3 and 7.5 b i**) (**Doc Ref 5.10**). It is, therefore, concluded that the construction, operation and decommissioning activities of the Sizewell C Project would not adversely affect the integrity of the Benacre to Easton Bavents Lagoons SAC from changes to coastal processes and sediment transport.

b. Water quality effects – marine environment: Marine and coastal habitats could be affected by changes in water quality during the operational phase due to discharge activities from the cooling water system, with respect to the thermal, chemical and moribund biota discharges. Hydrodynamic modelling has demonstrated that the extent of the Sizewell C thermal and chemical plumes do not intersect with the SAC (see **section 7.5 b ii**) (Doc Ref 5.10).

The waters off Sizewell C are well mixed vertically, facilitating reaeration at the surface, background dissolved oxygen levels are high, and the water exchange rate of the Greater Sizewell Bay is enough to limit the extent and duration of any oxygen reduction from the input loading of BOD from biomass discharged from the fish return system (i.e. dead fish). This is predicted to have a negligible effect on water quality (see **section 7.5 b ii**) (Doc Ref 5.10).

It is, therefore, concluded that the operation activities of the Sizewell C Project would not adversely affect the integrity of Benacre to Easton Bavents Lagoons SAC from changes to marine water quality.

c. **In-combination effects:** The screening process identified one other plan/project that could have an in-combination effect with the qualifying features of the SAC: Suffolk Shoreline management Plan (SMP7). Given the proposed management approaches outlined within the preliminary assessment of the SMP, none of them have the potential to cause an in-combination effect with the construction, commissioning, operational and decommissioning activities of the Sizewell C Project (see **section 7.5 d**) (Doc Ref 5.10). Therefore, it is predicted that an in-combination effect on water quality would not arise due to the Sizewell C Project and the outcomes of the Suffolk SMP.

HRA Integrity Matrix D1.3: Dew's Ponds SAC

Name of European site and designation: Dew's Ponds SAC						
EU Code: UK0030133						
Distance to NSIP: 11.2 km						
European site features	**Adverse effect on integrity**					
Effect	Alteration of local hydrology and hydrogeology			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1166 Great crested newt *Triturus cristatus*	x **a**	x **a**	x **a**			

a. Alteration of local hydrology and hydrogeology: During the screening stage it was identified that there was the potential for the Northern Park and Ride to alter the local hydrology and hydrogeology of the area on which Dew's Ponds SAC is dependent, which could affect the great crested newts qualifying feature. As the SAC is located within a different hydrological catchment to the park and ride, there is no hydrological connectivity of surface waters between the Northern Park and Ride and the SAC. Additionally, **no significant** effects on the groundwater of the two catchments are predicted due to the proposed park and ride (**ES Volume 3, Chapter 12**). Therefore, it can be concluded that an adverse effect on great crested newts would not arise from the construction, operation or decommissioning of the Northern Park and Ride due to potential changes in hydrology and hydrogeological conditions (see **section 7.6 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.4: Humber Estuary SAC

Name of European site and designation: Humber Estuary SAC												
EU Code: UK0030170												
Distance to NSIP: 162.9 km												
European site features	**Adverse effect on integrity**											
Effect	Water quality effects – marine environment			Disturbance effects on species populations			Physical interaction between species and project infrastructure			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1095 Sea lamprey *Petromyzon marinus*								x **f**				
1099 River lamprey *Lampetra fluviatilis*								x **f**				
1364 Grey seal *Halichoerus grypus*	x **a**	x **b**	x **a**	x **c**		x **c**	x **d**	x **e**	x **d**	x **g**	x **g**	x **g**

a. Water quality effects – marine environment: With respect to marine water quality, the largest area of effect on foraging grey seal is predicted to occur during operation (from the total residual oxidants (TRO) plume for both Sizewell B and C in-combination, affecting an area of 7.26 km^2). For assessing the potential effect of construction and decommissioning on marine water quality, as a precautionary approach, the number of grey seal that potentially could be present (and percentage of the reference population) within this area of effect has been estimated. The total number of foraging grey seal that could be present in the affected area is 0.3 individuals; this represents up to 0.003% of the reference population (or up to 0.005% of the estimated Humber Estuary SAC population) (see **section 9.4 a i**) (Doc Ref 5.10).

The number of foraging grey seal that could be present (and percentage of the reference population) in the area from which prey species could be impacted, as a result of any changes to water quality, has been estimated based on the maximum area of effect of 7.26 km^2. As the maximum predicted impact area for any increased suspended sediments and contaminant re-mobilisation is the same for foraging grey seal as it is for their prey, there would be no additional impacts on foraging grey seal as a result of the effects of any changes to water quality on prey species within the construction or decommissioning phases (see **section 9.4 a i**) (Doc Ref 5.10).

Therefore, no adverse effects on the integrity of the Humber Estuary SAC are predicted due to chemical discharge in relation to the conservation objectives for grey seal.

b. Water quality effects – marine environment: The discharge of the chemical plume during operation is not expected to have any **significant** effect on foraging grey seals and this, alongside the very small percentage of the reference population that could be exposed to the area of predicted effect in marine water quality, indicates there is no potential for an effect on foraging grey seals to arise over the operational lifetime of the Sizewell C Project (see **section 9.4 a ii**) (Doc Ref 5.10).

The potential effect of the changes to water quality on prey species for foraging grey seal would not extend beyond the maximum predicted effect areas described for grey seals themselves. Consequently, the approach taken to assessing the effect on the foraging grey seals is worst case and there would be no additional impact as a result of the effects on prey species (see **section 9.4 a ii**) (Doc Ref 5.10).

Assessment of the discharge of the thermal plume on grey seals showed that the number of foraging grey seal that could be present in the maximum predicted surface area for a 2°C MAC rise in temperature (an area of 224.6 km^2) has been estimated as 8.5 individuals, which represents up to 0.1% of the reference population (or 0.13% of the Humber Estuary SAC site population). Therefore, no adverse effects on the integrity of the Humber Estuary SAC are predicted due to the Sizewell C thermal discharge in relation to the conservation objectives for grey seal (see **section 9.4 a ii**) (Doc Ref 5.10).

The number of foraging grey seal that could be present (as percentage of the reference population) in the area of the thermal plume from which prey species could be displaced has been estimated. As the maximum predicted impact area for any changes in water temperature would be the same for foraging grey seal and their prey, there would be no additional effects on grey seal as a result of the effects of any changes in water temperature on prey species (see **section 9.4 a ii**) (Doc Ref 5.10).

It is, therefore, concluded that the operation activities of the Sizewell C Project would not adversely affect the grey seal qualifying feature of the SAC from changes to marine water quality.

c. **Disturbance effects on species populations:** During construction and decommissioning, grey seals (and their prey) could be affected by noise generated during impact piling, drilling and dredging activities and UXO clearance.

   The assessment for impact piling and drilling and dredging activities has been concluded that there is no adverse effect on grey seal due to the temporary disturbance and intermittent duration of underwater noise, along with the relatively low and infrequent number of grey seal in and around the Sizewell C main development site (see **section 9.4 b i**) (Doc Ref 5.10).

   The assessment scenario of UXO clearance used a hypothetical explosive charge mass of 500 lb. Mitigation would be implemented for any UXO clearance following the latest guidance and requirements, and the Marine Mammal Management Plan (MMMP) for any UXO clearance would reduce the risk of permanent threshold shift (PTS) to grey seal. Therefore, under these circumstances, no adverse effects on the integrity of the Humber Estuary SAC are predicted from any permanent auditory injury from any UXO clearance associated with the Sizewell C Project in relation to the conservation objectives for grey seal (see **section 9.4 b i**) (Doc Ref 5.10).

   Any underwater noise effects on prey species are likely to be intermittent, temporary and highly localised, with potential for recovery following cessation of the disturbance activity. Any permanent loss or changes of prey habitat would typically represent a small percentage of the potential habitat in the surrounding area. Consequently, no indirect adverse effect on the integrity of the Humber Estuary SAC is predicted from disturbance effects on prey species during the construction or decommissioning of the Sizewell C main development site in relation to the conservation objectives for foraging grey seal (see **section 9.4 b i**) (Doc Ref 5.10).

   Therefore, no adverse effects on the integrity of the Humber Estuary SAC are predicted due to noise generated during the construction and decommissioning of the Sizewell C Project in relation to the conservation objectives for grey seal.

d. **Physical interaction between species and project infrastructure:** The construction and decommissioning activities of the Sizewell C Project identified a potential increase in collision risk between grey seals and vessels. The assessment identified that, on the assumption that grey seal would be disturbed from the area as a result of underwater noise from construction and decommissioning activities and vessels, there should be no potential for increased collision risk within the main development site (see **section 9.4 c i**) (Doc Ref 5.10). Therefore, no direct adverse effect on the integrity of the Humber Estuary SAC is predicted from any increased vessel collision risk during construction or decommissioning of the Sizewell C main development site in relation to the conservation objectives for foraging grey seal.

e. Physical interaction between species and project infrastructure: The operational activities of the Sizewell C Project identified a potential increase in collision risk between grey seals and vessels and impingement of prey species.

For the increase in collision risk, it has been assumed that the potential effects would be the same as for construction (outlined above) (see **section 9.4 c ii**) (Doc Ref 5.10).

An assessment has been made of the number of grey seal that could be displaced by the loss of prey availability through impingement. This assessment is based on the precautionary assumption that all grey seal prey species would be lost within close proximity of the intake tunnels. An area of effect has been defined as the study area for the Sizewell C Project, which is the Greater Sizewell Bay; a total area of 4,120 ha (or 41.2 km^2). This is considered to be precautionary, as not all prey species within that area would be lost and the effect would be temporary, as grey seal would be able to move to a nearby area where prey species are available. Hence, all grey seal prey species are expected to be at risk of a negligible effect only, with less than 1% of the available prey populations being affected (see **section 9.4 c ii**) (Doc Ref 5.10).

f. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on lamprey. The assessment showed that impingement of lamprey consisted of five individuals for sea lamprey and 0.86% of the Humber run size for river lamprey. Lamprey is not predicted to be at risk from entrainment (see **section 10.3 b i**) (Doc Ref 5.10).

In light of the above, adverse effect on the integrity of the Humber Estuary SAC can be excluded due to impingement and entrainment of river and sea lamprey during the operation of Sizewell C.

g. In-combination effects: A number of plans/projects have been identified for having a potential in-combination effect with the grey seals qualifying feature of the Humber Estuary (see **Table 9.23 and Table 9.24**) (Doc Ref 5.10). In relation to the conservation objective for grey seal, there is no potential for adverse effects on the integrity of the Humber Estuary SAC to arise due to the Sizewell C Project either alone or in-combination with other plans or projects (see **Table 9.26**) (Doc Ref 5.10).

HRA Integrity Matrix D1.5: Minsmere to Walberswick Heaths and Marshes SAC

Name of European site and designation: Minsmere to Walberswick Heaths and Marshes SAC															
EU Code: UK0012809															
Distance to NSIP: Adjacent															
European site features	**Adverse effect on integrity**														
Effect	Alteration of coastal processes/ sediment transport			Water quality effects – marine environment			Changes in air quality			Disturbance due to increase in recreational pressure			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1210 Annual vegetation of drift lines	x **a**	x **a**	x **a**	x **b**	x **c**	x **b**	x **d**		x **d**	x **f**	x **g**	x **f**	x **h**	x **h**	x **h**
4030 European dry heaths							x **d**	x **e**	x **d**	x **f**	x **g**	x **f**	x **h**	x **h**	x **h**
1220 Perennial vegetation of stony banks	x **a**	x **a**	x **a**	x **b**	x **c**	x **b**	x **d**	x **e**	x **d**	x **f**	x **g**	x **f**	x **h**	x **h**	x **h**

a. Alteration of coastal processes/sediment transport: The changes in tidal currents, waves and sediment transport would be confined to the local area around the sources of disturbance and there would be no change to coastal processes and sediment transport of the 'annual vegetation of drift lines' and 'perennial vegetation of stony banks' qualifying features. Suspended sediment concentrations (SSCs) from dredging would reduce to background levels within four days after dredging ceases (see **section 7.3 and 7.7 c i**) (Doc Ref 5.10). It is, therefore, concluded that the construction, operation and decommissioning activities of the Sizewell C Project would not adversely affect the integrity of the Minsmere to Walberswick Heaths and Marshes SAC from changes to coastal processes and sediment transport.

b. Water quality effects – marine environment: During the construction and decommissioning phases, the installation/decommissioning of infrastructure in the marine environment and vessel traffic represent potential pathways for contamination. Contamination could result from resuspension of sediment-bound contaminants, accidental release of chemicals from vessels, and chemicals leaching from coatings on marine infrastructures. In addition, a number of discharges to the marine environment would occur during the construction phase via the combined discharge outfall, including site drainage, effluent from on-site treatment of sewage, dewatering activities, concrete-cleaning washes and wastewater from horizontal cooling water system tunnelling operations.

The assessment of each potential pathway of contamination has identified that these discharges would not have an adverse effect on the qualifying features of the SAC (see **section 7.7 c ii**) (Doc Ref 5.10).

c. Water quality effects – marine environment: Marine and coastal habitats could be affected by changes in water quality during the operational phase due to discharge activities from the cooling water system, with respect to the thermal, chemical and moribund biota discharges. Hydrodynamic modelling has demonstrated that the extent of the Sizewell C thermal and chemical plumes do not intersect with the qualifying features of the SAC as they are located at, or above, mean high water springs (see **section 7.7 c ii**) (Doc Ref 5.10).

The waters off Sizewell C are well mixed vertically, facilitating reaeration at the surface, background dissolved oxygen levels are high, and the water exchange rate of the Greater Sizewell Bay is enough to limit the extent and duration of any oxygen reduction from the input loading of BOD from biomass discharged from the fish return system (i.e. dead fish). This is predicted to have a negligible effect on water quality (see **section 7.7 c ii**) (Doc Ref 5.10).

It is, therefore, concluded that the operation phase of the Sizewell C Project would not adversely affect the integrity of the Minsmere to Walberswick Heaths and Marshes SAC from changes to marine water quality.

d. Changes in air quality: The air quality assessment (**ES Volume 2, Chapter 12**: air quality) predicts that the extent of any dust-related effect is likely to occur over a relatively small area, with deposition likely to occur close (10s of metres) from the point of origin. Dust generation would likely continue for the duration of the construction phase, but the impacts of dust are likely to be reversible. The primary mitigation measure proposed is the development of a dust management plan outlining a range of measures that would ensure dust generation is kept to a minimum (and within the threshold limits of 0.5 $g/m^2/day$). It is concluded that there would not be an adverse effect on the integrity of the 'annual vegetation of drift lines' and 'perennial vegetation of stony banks' qualifying features of the Minsmere to Walberswick Heaths and Marshes SAC due to air quality effects during the construction and decommissioning phases (see **section 7.7 c iii**) (Doc Ref 5.10).

e. **Changes in air quality:** Air quality effects during the operational phase are assessed in **section 7.7 b i** (for European dry heaths) and **section 7.7 c iii** (for perennial vegetation of stony banks) (Doc Ref 5.10). The predicted PC and PEC during operation are assessed in the context of the critical levels for air emissions and critical loads for nutrient nitrogen and acid deposition, in the context of background conditions.

   On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of these qualifying features due to changes in air quality during the operational phase.

f. **Disturbance due to increase in recreational pressure:** There is the potential for an increase in visitor numbers or changes in patterns of use of recreational areas to occur due to the construction/ decommissioning workers and works associated with the Sizewell C Project. Mitigation measures have been established to minimise the requirement for both construction workers and existing recreational users from Sizewell to access the SAC for recreation. The Rights of Way and Access Strategy for the EDF Energy Estate would be developed to minimise the displacement of people away from the Sizewell C area and to nearby European sites to minimise trampling of vegetation. In addition, the strategy outlines a monitoring programme for recreational displacement to identify local mitigation measures, to be agreed with local land managers, which could be introduced to further reduce recreational disturbance (see **section 7.7 b ii**) (Doc Ref 5.10).

   Therefore, it is concluded that an adverse effect would not arise from an increase in recreational pressure on the qualifying features of the Minsmere to Walberswick Heaths and Marshes SAC.

g. **Disturbance due to increase in recreational pressure:** The number of workers employed during normal operation is expected to be approximately 900, with an additional 1,000 during planned refuelling and maintenance shutdowns (every 18 months for each UK EPR™ unit) and would represent a substantial reduction in the number of workers which would be required at peak times during construction. Hence it can be concluded that the operation of Sizewell C would not have an adverse effect on European dry heaths due to recreational disturbance (see **section 7.7 b ii**) (Doc Ref 5.10).

h. **In-combination effects:** A number of plans/projects have been identified for having a potential in-combination effect with the grey seals qualifying feature of the Humber Estuary (see **Table 7.8**). In relation to the conservation objectives of the qualifying features of the SAC, there is no potential for adverse effects on the integrity of the SAC to arise due to the Sizewell C Project either alone or in-combination with other plans or projects (see **section 7.7 e**) (Doc Ref 5.10).

HRA Integrity Matrix D1.6: Orfordness-Shingle Street SAC

Name of European site and designation: Orfordness-Shingle Street SAC															
EU Code: UK0014780															
Distance to NSIP: 8.9 km															
European site features	**Adverse effect on integrity**														
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environment			Changes in air quality			Disturbance due to increased recreational pressure			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1150 Coastal lagoons **Priority feature*	x **a**	x **a**	x **a**	x **b**	x **c**	x **b**	x **e**	x **f**	x **e**				x **i**	x **i**	x **i**
1210 Annual vegetation of drift lines	x **a**	x **a**	x **a**	x **b**	x **d**	x **b**	x **e**		x **e**	x **h**	x **h**	x **h**	x **i**	x **i**	x **i**
1220 Perennial vegetation of stony banks	x **a**	x **a**	x **a**	x **b**	x **d**	x **b**	x **e**	x **g**	x **e**	x **h**	x **h**	x **h**	x **i**	x **i**	x **i**

a. Alteration of coastal processes/sediment transport: The changes in tidal currents, waves and sediment transport would be confined to the local area around the sources of disturbance and there would be no change to coastal processes and sediment transport of the qualifying features of the SAC. Suspended sediment concentrations (SSCs) from dredging would reduce to background levels within four days after dredging ceases (see **section 7.3 and 7.9 b i**) (Doc Ref 5.10). It is, therefore, concluded that the construction, operation and decommissioning activities of the Sizewell C Project would not adversely affect the integrity of the SAC from changes to coastal processes and sediment transport.

b. **Water quality effects – marine environment:** During the construction and decommissioning phases, the installation/decommissioning of infrastructure in the marine environment and vessel traffic represent potential pathways for contamination. In addition, a number of discharges to the marine environment would occur during the construction phase via the combined discharge outfall. The assessment has identified that these discharges would not have an adverse effect on the qualifying features of the SAC (see **section 7.9 b ii**) (Doc Ref 5.10).

c. **Water quality effects – marine environment:** Marine and coastal habitats could be affected by changes in water quality during the operational phase due to discharge activities from the cooling water system, with respect to the thermal, chemical and moribund biota discharges.

   Hydrodynamic modelling has demonstrated that there is the potential for the thermal plume to interact with the coastal lagoons feature of the SAC. Whilst there is a predicted overlap in the 2°C (98th percentile) EQS thermal contour line and the SAC, the extent of this is limited to within the tidal range, i.e. up to mean high water springs. As the lagoons sit behind the shingle bank, the seawater would percolate slowly through the shingle before reaching the lagoons themselves. The slow percolation of water through the lagoon would result in dissipation of any retained heat by the time it reaches the lagoons, thus reducing the percolating seawater temperature to below the EQS. Overtopping of the shingle bank with seawater during high tide would introduce elevated seawater temperatures for a short duration of time only, with seawater temperature well below the short-term 5°C benchmark. Consequently, an adverse effect on the water quality of the coastal lagoons of the SAC is not predicted (see **section 7.9 b ii**) (Doc Ref 5.10).

   The hydrodynamic modelling shows that the chemical plumes do not interact with the coastal lagoons qualifying feature of the SAC.

   The waters off Sizewell C are well mixed vertically, facilitating reaeration at the surface, background dissolved oxygen levels are high, and the water exchange rate of the Greater Sizewell Bay is enough to limit the extent and duration of any oxygen reduction from the input loading of BOD from biomass discharged from the fish return system (i.e. dead fish). This is predicted to have a negligible effect on water quality (see **section 7.9 b ii**) (Doc Ref 5.10).

d. **Water quality effects – marine environment:** Hydrodynamic modelling has demonstrated that the extent of the Sizewell C thermal and chemical plumes do not intersect with the SAC (see **section 7.9 c ii**) (Doc Ref 5.10). It is, therefore, concluded that the operational activities of the Sizewell C Project would not adversely affect the integrity of the SAC from changes to marine water quality.

e. **Changes in air quality:** The Orfordness to Shingle Street SAC falls beyond the study area for the assessment of dust emissions based on the IAQM guidance and no further consideration of construction dust in the context of this SAC is necessary (see **section 7.9 b iii and 7.9 c iii**) (Doc Ref 5.10).

f. **Changes in air quality:** The coastal lagoon qualifying feature is located more than 10 km from the source of the operational combustion activity and modelling of the combustion scenarios predicts that the Critical Levels for NOx (long-term), NOx (short-term) and SO_2 (long-term) would not be exceeded. In addition, the Critical Load for nutrient nitrogen deposition would not be exceeded. On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of the coastal lagoons of the Orfordness to Shingle Street SAC due to changes in air quality during the operational phase (see **section 7.9 b iii**) (Doc Ref 5.10).

g. **Changes in air quality:** Air quality effects during the operational phase are assessed in **section 7.9 c iii** (for perennial vegetation of stony banks) (Doc Ref 5.10). The predicted PC and PEC during operation are assessed in the context of the critical levels for air emissions and critical loads for nutrient nitrogen and acid deposition.

   On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of these qualifying features due to changes in air quality during the operational phase.

h. **Disturbance due to increase in recreational pressure:** During construction, operation and decommissioning, the key potential effect pathways experienced by the plant and habitats of the Orfordness to Shingle Street SAC would be associated with disturbance effects on habitats (comprising trampling and other effects due to displacement of recreational users). The main area where sensitive shingle vegetation is present is along Orfordness to Shingle Street spit. The main access point to the shingle spit is by boat from Orford, although it is possible to access the spit by walking from Aldeburgh, but it is envisaged that most people would access the town beach rather than undertake a longer return walk to access the shingle spit.

   For these reasons, assessment concluded that there would not be an adverse effect on the integrity of the 'annual vegetation of drift lines' and 'perennial vegetation of stony banks' of the Orfordness to Shingle Street SAC due to recreational disturbance effects during the construction, decommissioning and operational phases see **section 7.9 c iv**) (Doc Ref 5.10).

i. **In-combination effects:** The screening process identified two plans/projects that could have an in-combination effect with the qualifying features of the SAC: Suffolk Shoreline Management Plan (SMP7) and shingle recycling from Sudbourne Beach to Slaughden Sea Defences.

   The in-combination assessment of SMP7 with the Sizewell C Project identified that the proposed management approaches outlined within the preliminary assessment of the SMP do not have the potential to cause an in-combination effect with the construction, commissioning, operational and decommissioning activities of the Sizewell C Project (see **section 7.9 e**) (Doc Ref 5.10). Therefore, it is predicted that an in-combination effect on coastal processes and water quality would not arise due to the Sizewell C Project and the outcomes of the Suffolk Shoreline Management Plan.

With regard to proposed shingle recycling from Sudbourne Beach to Slaughden sea defences, the Environment Agency state in its 'Summary Document to inform Appropriate Assessment of shingle recycling' that the only potential for an impact is on the feature 'annual vegetation of drift lines' for the Orfordness to Shingle Street SAC. However, any decrease in vegetation cover via this operation is deemed **not significant** in comparison to changes to the drift line vegetation caused by storms and storm surges. There are, therefore, no predicted in-combination effects due to the proposed Sizewell C Project and shingle recycling operations at Sudbourne beach on the Orfordness to Shingle Street SAC (see **section 7.9 e**) (Doc Ref 5.10).

HRA Integrity Matrix D1.7: Southern North Sea SAC

Name of European site and designation: Southern North Sea SAC															
EU Code: UK0030395															
Distance to NSIP: Main Development Site – within and adjacent															
European site features	**Adverse effect on integrity**														
Effect	Water quality effects – marine environment			Direct habitat loss and direct / indirect habitat fragmentation			Disturbance effects on species populations			Physical interaction between species and project infrastructure			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1351 Harbour porpoise *Phocoena*	x **a**	x **b**	x **a**	x **c**	x **d**	x **c**	x **e**		x **e**	x **f**	x **g**	x f	x **h**	x **h**	x **h**

a. Water quality effects – marine environment: With respect to marine water quality, the largest area of effect on foraging harbour porpoise is predicted to occur during operation (from the total residual oxidants (TRO) plume for both Sizewell B and C in-combination, affecting an area of 7.26 km^2). For assessing the potential effect of construction and decommissioning on marine water quality, as a precautionary approach, the number of harbour porpoise that potentially could be present (and percentage of the reference population) within this area of effect has been estimated. This is 4.4 individuals (or 0.001% of the North Sea management unit reference population). The assessment calculated that displacement of harbour porpoise, therefore, would not exceed either the 20% threshold of effect at any one time or exceed the 10% seasonal component of the SAC on average over the season (see **section 9.5 a i**) (Doc Ref 5.10).

The number of foraging harbour porpoise that could be present (and percentage of the reference population) in the area from which prey species could be impacted, as a result of any changes to water quality, has been estimated based on the maximum area of effect of 7.26 km^2. As the maximum predicted impact area for any increased suspended sediments and contaminant re-mobilisation is the same for foraging harbour porpoise as it is for their prey, there would be no additional impacts on foraging harbour porpoise as a result of the effects of any changes to water quality on prey species within the construction or decommissioning phases (see **section 9.5 a i**) (Doc Ref 5.10).

Therefore, no adverse effects on the integrity of the Southern North Sea SAC are predicted due to the Sizewell C chemical discharge in relation to the conservation objectives for harbour porpoise.

b. Water quality effects – marine environment: The discharge of the chemical plume during operation is not expected to have any **significant** effect on foraging harbour porpoise. On a precautionary basis, the number of harbour porpoise that could be present within the maximum area of effect (of 7.26 km^2 for TRO effect area) has been estimated to be 4.4 individuals, or 0.001% of the North Sea MU reference population. The maximum area of effect equates to 0.06% of the Southern North Sea SAC winter area and, as a worst-case, the maximum seasonal average would be 0.06%. As above, displacement of harbour porpoise, therefore, would not exceed either the 20% threshold of effect at any one time or the 10% seasonal component of the SAC on average over the season (see **section 9.5 a ii**) (Doc Ref 5.10).

The potential effect of the changes to water quality on prey species for foraging harbour porpoise would not extend beyond the maximum predicted effect areas described for harbour porpoise themselves. Consequently, the approach taken to assessing the effect on the foraging harbour porpoise is worst case and there would be no additional impact as a result of the effects on prey species (see **section 9.5 a ii**) (Doc Ref 5.10).

Assessment of the discharge of the thermal plume on harbour porpoise is based on the number of harbour porpoise that could be present within the maximum area of effect (an area of 224.6 km^2 for the 2°C MAC area at the sea surface). This has been estimated to be 136.3 individuals, or 0.04% of the North Sea MU reference population. The maximum area of effect equates to 1.8% of the Southern North Sea SAC winter area. Similarly, as a worst case, it is assumed that changes to water quality could occur throughout the duration of the winter season, which would result in a seasonal average of 1.8% of the Southern North Sea SAC winter area. Displacement of harbour porpoise, therefore, would not exceed either the 20% threshold of effect at any one time nor the 10% seasonal component of the SAC on average over the season.

The thermal tolerance of the key prey species for harbour porpoise has been reviewed, including sprat, herring, whiting, and dover sole. As a worst-case approach, it can be assumed that all harbour porpoise prey species would be displaced from the area within the 2°C contour; but no fatalities of prey species are expected and prey would be available to marine mammals outside of the 2°C contour. On a precautionary basis, the number of harbour porpoise that could be present in the area of the thermal plume from which prey species could be displaced has been estimated. However, as the maximum predicted impact area for any changes in water temperature would be the same for marine mammal and their prey, there would be no additional effects on harbour porpoise as a result of the effects of any changes in water temperature on prey species (see **section 9.5 a ii**) (Doc Ref 5.10).

It is, therefore, concluded that the operation activities of the Sizewell C Project would not adversely affect the harbour porpoise qualifying feature of the SAC from changes to marine water quality.

c. **Direct habitat loss and direct / indirect habitat fragmentation**: The number of harbour porpoise that could be at risk of displacement as a result of a habitat change due to the dredging for the beach landing facility, is up to 0.006 individuals (or 0.000002% of the North Sea Management Unit reference population). The maximum area of the displacement effect for harbour porpoise as a result of temporary changes to habitat equates to 0.00007% of the winter area of the Southern North Sea SAC (12,697 km^2) and, therefore, would be below the spatial disturbance threshold of 20% and temporal displacement threshold of 10% of the seasonal component. Under these circumstances, no direct adverse effect on the integrity of the Southern North Sea SAC is predicted due to habitat loss associated with the Sizewell C main development site in relation to the conservation objectives for harbour porpoise (see **section 9.5 b i**) (Doc Ref 5.10).

d. **Direct habitat loss and direct / indirect habitat fragmentation**: During the operational period of the Sizewell C Project, the presence of the offshore infrastructure has the potential to cause the long-term displacement of harbour porpoise, through the long-term loss of habitat. This would affect a total area of 0.02 km^2. The number of harbour porpoise that could be at risk of displacement as a result of long-term habitat change due to the introduction of hard structures is up to 0.01 individuals (or 0.000004% of the North Sea Management Unit reference population). The maximum area of the displacement effect for harbour porpoise as a result of the introduction of hard substrate through the operational period equates to 0.0002% of the winter area of the Southern North Sea SAC and, therefore, is below the spatial disturbance threshold of 20% and the temporal displacement threshold of 10% of the seasonal component. Consequently, no direct adverse effect on the integrity of the Southern North Sea SAC is predicted due to habitat loss associated with the Sizewell C main development site in relation to the conservation objectives for harbour porpoise (see **section 9.5 b ii**) (Doc Ref 5.10).

e. **Disturbance effects on species populations:** During construction and decommissioning, harbour porpoise (and their prey) could be affected by noise generated during impact piling, drilling and dredging activities and UXO clearance.

   The assessment for impact piling and drilling and dredging activities has concluded that there is no adverse effect on harbour porpoise due to the temporary disturbance and intermittent duration of underwater noise (see section **9.5 c i**) (Doc Ref 5.10).

   The assessment scenario of UXO clearance used a hypothetical explosive charge mass of 500 lb. Mitigation would be implemented for any UXO clearance following the latest guidance and requirements, and the Marine Mammal Management Plan (MMMP) for any UXO clearance would reduce the risk of Permanent Threshold Shift (PTS) to harbour porpoise. Therefore, under these circumstances, no direct adverse effects on the integrity of the SAC are predicted from

any permanent auditory injury from any UXO clearance associated with the Sizewell C Project in relation to the conservation objectives for harbour porpoise (see **section 9.5 c i**) (Doc Ref 5.10).

Any underwater noise effects on prey species are likely to be intermittent, temporary and highly localised, with potential for recovery following cessation of the disturbance activity. Any permanent loss or changes of prey habitat would typically represent a small percentage of the potential habitat in the surrounding area. Consequently, no indirect adverse effect on the integrity of the Southern North Sea SAC is predicted from disturbance effects on prey species during the construction or decommissioning of the Sizewell C main development site in relation to the conservation objectives for foraging harbour porpoise (see **section 9.5 c i**) (Doc Ref 5.10).

Therefore, no adverse effects on the integrity of the SAC are predicted due to noise generated during the construction and decommissioning of the Sizewell C Project in relation to the conservation objectives for harbour porpoise.

f. Physical interaction between species and project infrastructure: The construction and decommissioning activities of the Sizewell C Project identified a potential increase in collision risk between harbour porpoise and vessels. The assessment identified that, on the assumption that harbour porpoise would be disturbed from the area as a result of underwater noise from construction and decommissioning activities and vessels, there should be no potential for increased collision risk within the main development site (see **section 9.5 d i**) (Doc Ref 5.10). Therefore, no direct adverse effect on the integrity of the SAC is predicted from any increased vessel collision risk during construction or decommissioning of the Sizewell C main development site in relation to the conservation objectives for foraging harbour porpoise.

g. Physical interaction between species and project infrastructure: The operational activities of the Sizewell C Project identified a potential increase in collision risk between harbour porpoise and vessels and impingement of prey species.

For the increase in collision risk, it has been assumed that the potential effects would be the same as for construction (outlined above) (see **section 9.5 d ii**) (Doc Ref 5.10).

An assessment has been made of the number of harbour porpoise that could be displaced by the loss of prey availability through impingement. This assessment is based on the precautionary assumption that all harbour porpoise prey species would be lost within close proximity of the intake tunnels. An area of effect has been defined as the study area for the Sizewell C Project, which is the Greater Sizewell Bay; a total area of 4,120 ha (or 41.2 km^2). This is considered to be precautionary, as not all prey species within that area would be lost and the effect would be temporary, as harbour porpoise would be able to move to a nearby area where prey species are available. Hence, all harbour porpoise prey

species are expected to be at risk of a negligible effect only, with less than 1% of the available prey populations being affected (see **section 9.5 d ii**) (Doc Ref 5.10).

h. In-combination effects: A number of plans/projects have been identified for having a potential in-combination effect with the harbour porpoise qualifying feature of the Southern North Sea SAC (see **Table 9.34** to **Table 9.37**) (Doc Ref 5.10). In relation to the conservation objective for harbour porpoise, there is no potential for adverse effects on the integrity of the SAC to arise due to the Sizewell C Project either alone or in-combination with other plans or projects (see **Table 9.38**) (Doc Ref 5.10).

HRA Integrity Matrix D1.8: The Wash and North Norfolk Coast SAC

Name of European site and designation: The Wash and North Norfolk Coast SAC												
EU Code: UK0017075												
Distance to NSIP: 88.2 km												
European site features	**Adverse effect on integrity**											
Effect	Water quality effects – marine environment			Disturbance effects on species populations			Physical interaction between species and project infrastructure			In-combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
1365 Harbour seal *Phoca vitulina*	x **a**	x **b**	x **a**	x **c**	x **c**	x **c**	x **d**	x **e**	x **d**	x **f**	x **f**	x **f**

a. Water quality effects – marine environment: With respect to marine water quality, the largest area of effect on foraging harbour seal is predicted to occur during operation (from the total residual oxidants (TRO) plume for both Sizewell B and C in-combination, affecting an area of 7.26 km^2). For assessing the potential effect of construction and decommissioning on marine water quality, as a precautionary approach, the number of harbour seal that potentially could be present (and percentage of the reference population) within this area of effect has been estimated. This is 0.3 individuals; up to 0.006% of the reference population (or up to 0.008% of the estimated Wash and North Norfolk Coast SAC population) (see **section 9.6 a i**) (Doc Ref 5.10).

The number of foraging harbour seals that could be present (and percentage of the reference population) in the area from which prey species could be impacted, as a result of any changes to water quality, has been estimated based on the maximum area of effect of 7.26 km^2. As the maximum predicted impact area for any increased suspended sediments and contaminant re-mobilisation is the same for foraging harbour seal as it is for their prey, there would be no additional impacts on foraging harbour seal as a result of the effects of any changes to water quality on prey species within the construction or decommissioning phases (see **section 9.6 a i**) (Doc Ref 5.10).

Therefore, no adverse effects on the integrity of the SAC are predicted due to the Sizewell C chemical discharge in relation to the conservation objectives for harbour seal.

b. **Water quality effects – marine environment:** The discharge of the chemical plume during operation is not expected to have any **significant** effect on foraging harbour seals and this, alongside the very small percentage of the reference population that could be exposed to the area of predicted effect in marine water quality, indicates there is no potential for an effect on foraging harbour seals to arise over the operational lifetime of the Sizewell C Project (see **section 9.6 a ii**) (Doc Ref 5.10).

   The potential effect of the changes to water quality on prey species for foraging harbour seals would not extend beyond the maximum predicted effect areas described for the harbour seals themselves. Consequently, the approach taken to assessing the effect on the foraging harbour seals is worst case and there would be no additional impact as a result of the effects on prey species (see **section 9.6 a ii**) (Doc Ref 5.10).

   Assessment of the discharge of the thermal plume on harbour seals showed that the number of foraging harbour seals that could be present in the maximum predicted surface area for a 2°C MAC rise in temperature (an area of 224.6 km^2) has been estimated as 8.8 individuals, which represents up to 0.18% of the reference population (or 0.24% of the Wash and North Norfolk Coast SAC population). Therefore, no direct adverse effects on the integrity of the SAC are predicted due to the Sizewell C thermal discharge in relation to the conservation objectives for harbour seal (see **section 9.6 a ii**) (Doc Ref 5.10).

   The number of foraging harbour seals that could be present (as percentage of the reference population) in the area of the thermal plume from which prey species could be displaced has been estimated. As the maximum predicted impact area for any changes in water temperature would be the same for foraging harbour seal and their prey, there would be no additional effects on harbour seal as a result of the effects of any changes in water temperature on prey species (see **section 9.6 a ii**) (Doc Ref 5.10).

   It is, therefore, concluded that the operation activities of the Sizewell C Project would not adversely affect the harbour seal qualifying feature of the SAC from changes to marine water quality.

c. **Disturbance effects on species populations:** During construction and decommissioning, harbour seals (and their prey) could be affected by noise generated during impact piling, drilling and dredging activities, and UXO clearance.

   The assessment for impact piling and drilling and dredging activities, it has been concluded that there is no adverse effect on harbour seal due to the temporary disturbance and intermittent duration of underwater noise, along with the relatively low and infrequent number of grey seal in and around the Sizewell C main development site (see section **9.6 b i**) (Doc Ref 5.10).

The assessment scenario of UXO clearance used a hypothetical explosive charge mass of 500 lb. Mitigation would be implemented for any UXO clearance following the latest guidance and requirements, and the Marine Mammal Management Plan (MMMP) for any UXO clearance would reduce the risk of permanent threshold shift (PTS) to harbour seal. Therefore, under these circumstances, no direct adverse effects on the integrity of the SAC are predicted from any permanent auditory injury from any UXO clearance associated with the Sizewell C Project in relation to the conservation objectives for harbour seal (see **section 9.6 b i**) (Doc Ref 5.10).

Any underwater noise effects on prey species are likely to be intermittent, temporary and highly localised, with potential for recovery following cessation of the disturbance activity. Any permanent loss or changes of prey habitat would typically represent a small percentage of the potential habitat in the surrounding area. Consequently, no indirect adverse effect on the integrity of the SAC is predicted from disturbance effects on prey species during the construction or decommissioning of the Sizewell C main development site in relation to the conservation objectives for foraging harbour seal (see **section 9.6 b i**) (Doc Ref 5.10).

Therefore, no adverse effects on the integrity of The Wash and North Norfolk Coast SAC are predicted due to noise generated during the construction and decommissioning of the Sizewell C Project in relation to the conservation objectives for harbour seal.

d. Physical interaction between species and project infrastructure: The construction and decommissioning activities of the Sizewell C Project identified a potential increase in collision risk between harbour seals and vessels. The assessment identified that, on the assumption that harbour seals would be disturbed from the area as a result of underwater noise from construction and decommissioning activities and vessels, there should be no potential for increased collision risk (see **section 9.6 c i**) (Doc Ref 5.10). Therefore, no direct adverse effect on the integrity of the SAC is predicted from any increased vessel collision risk during construction or decommissioning of the Sizewell C main development site in relation to the conservation objectives for foraging harbour seal.

e. Physical interaction between species and project infrastructure: The operational activities of the Sizewell C Project identified a potential increase in collision risk between harbour seals and vessels and impingement of prey species.

For the increase in collision risk, it has been assumed that the potential effects would be the same as for construction (outlined above) (see **section 9.6 c ii**) (Doc Ref 5.10).

An assessment has been made of the number of harbour seals that could be displaced by the loss of prey availability through impingement. This assessment is based on the precautionary assumption that all harbour seal prey species would be lost within close proximity of the intake tunnels. An area of effect has been defined as the study area for the

Sizewell C Project, which is the Greater Sizewell Bay; a total area of 4,120 ha (or 41.2 km^2). This is considered to be precautionary, as not all prey species within that area would be lost and the effect would be temporary, as harbour seals would be able to move to a nearby area where prey species are available. Hence, all harbour seal prey species are expected to be at risk of a negligible effect only, with less than 1% of the available prey populations being affected (see **section 9.6 c ii**) (Doc Ref 5.10).

f. In-combination effects: A number of plans/projects have been identified for having a potential in-combination effect with the harbour seal qualifying feature of the Humber Estuary (see **Table 9.46** to **Table 9.48**) (Doc Ref 5.10). In relation to the conservation objective for harbour seal, there is no potential for adverse effects on the integrity of The Wash and North Norfolk Coast SAC to arise due to the Sizewell C Project either alone or in-combination with other plans or projects (see **Table 9.49**) (Doc Ref 5.10).

HRA Integrity Matrix D1.9: Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI

Name of European site and designation: Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent SCI						
EU Code: BE2300006						
Distance to NSIP: 197 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. **Physical interaction between species and project infrastructure:** The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.10: Unterweser SCI

Name of European site and designation: Unterweser SCI						
EU Code: DE2316331						
Distance to NSIP: 479 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.11: Weser bei Bremerhaven SCI

Name of European site and designation: Weser bei Bremerhaven SCI						
EU Code: DE2417370						
Distance to NSIP: 483 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.12: Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI

Name of European site and designation: Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI						
EU Code: DE2516331						
Distance to NSIP: 475 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.13: Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI

Name of European site and designation: Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI						
EU Code: DE2323392						
Distance to NSIP: 509 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. **Physical interaction between species and project infrastructure:** The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.14: Unterelbe SCI

Name of European site and designation: Unterelbe SCI						
EU Code: DE2018331						
Distance to NSIP: 508 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.15: Mühlenberger Loch/Neßsand SCI

Name of European site and designation: Mühlenberger Loch/Neßsand SCI						
EU Code: DE2424302						
Distance to NSIP: 563 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.16: Rapfenschutzgebiet Hamburger Stromelbe SCI

Name of European site and designation: Rapfenschutzgebiet Hamburger Stromelbe SCI						
EU Code: DE2424303						
Distance to NSIP: 565 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.17: Hamburger Unterelbe SCI

Name of European site and designation: Hamburger Unterelbe SCI						
EU Code: DE2526305						
Distance to NSIP: 582 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

HRA Integrity Matrix D1.18: Elbe zwischen Geesthacht und Hamburg SCI

Name of European site and designation: Elbe zwischen Geesthacht und Hamburg SCI						
EU Code: DE2526332						
Distance to NSIP: 584 km						
European site features	**Adverse effect on integrity**					
Effect	Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
1103 Twaite shad *Alosa fallax*		x **a**				

a. Physical interaction between species and project infrastructure: The SAC was assessed for impingement and entrainment effects from the Sizewell C Project on twaite shad. The assessment showed that impingement of twaite shad consisted of 3,601 individuals (0.05% of the Spawning Stock Biomass (SSB), which was a combination of the ICES landings data and the North Sea population data). At 0.05% impingement of the SSB, it can be concluded that there would be no adverse effect on twaite shad and, therefore, no adverse effect on the integrity of the site. Twaite shad was not predicted to be at risk from entrainment (see **section 10.5 b i**) (Doc Ref 5.10).

Habitats Regulations Assessment

Appendix D2: Planning Inspectorate HRA Integrity Matrices for SPAs

STAGE 2: EFFECTS ON INTEGRITY

Likely significant effects have been identified for the following sites:

- Alde-Ore Estuary SPA
- Benacre to Easton Bavents SPA
- Deben Estuary SPA
- Minsmere to Walberswick SPA
- Outer Thames Estuary SPA
- Sandlings SPA
- Stour and Orwell Estuaries SPA

These sites have been subject to further assessment in order to establish if the NSIP could have an adverse effect on their integrity. Evidence for the conclusions reached on integrity is detailed within the footnotes to the matrices below.

Matrix Key

✓ **=** Adverse effect on integrity **cannot** be excluded
× **=** Adverse effect on integrity **can** be excluded

C = construction
O = operation
D = decommissioning

Where effects are not relevant to a particular feature the matrix cell has been formatted as follows:



HRA Integrity Matrix D2.1: Alde-Ore Estuary SPA

Name of European site and designation: Alde-Ore Estuary SPA

EU Code: UK9009112

Distance to NSIP: 6.5 km

European site features	**Adverse effect on integrity**																							
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine Environment			Water quality effects – terrestrial environment			Alteration of hydrology and local hydro-geology			Changes in air quality			Disturbance due to increase in recreational pressure			Physical interaction between species and project infrastructure			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Avocet** *Recurvirostra avosetta*													× **f**	× **g**	× **f**	× **h**	× **i**	× **h**				× **k**	× **k**	× **k**
Breeding **Marsh Harrier** *Circus aeruginosus*													× **f**	× **g**	× **f**	× **h**	× **i**	× **h**				× **k**	× **k**	× **k**
Breeding **Little Tern** *Sterna albifrons*	× **a**	× **a**	× **a**		× **b**		× **d**			× **e**	× **e**		× **f**	× **g**	× **f**	× **h**	× **i**	× **h**		× **j**		× **k**	× **k**	× **k**
Breeding **Sandwich Tern** *Sterna sandvicensis*	× **a**	× **a**	× **a**		× **b**		× **d**			× **e**	× **e**		× **f**	× **g**	× **f**	× **h**	× **i**	× **h**		× **j**		× **k**	× **k**	× **k**
Breeding **Lesser black-backed gull** *Larus fuscus*	× **a**	× **a**	× **a**		× **c**		× **d**			× **e**	× **e**		× **f**	× **g**	× **f**	× **h**	× **i**	× **h**		× **j**		× **k**	× **k**	× **k**
Over winter **Avocet**	× **a**	× **a**	× **a**				× **d**			× **e**	× **e**		× **f**	× **g**	× **f**	× **h**	× **i**	× **h**				× **k**	× **k**	× **k**
Over winter **Redshank**	× **a**	× **a**	× **a**				× **d**			× **e**	× **e**		× **f**	× **g**	× **f**	× **h**	× **i**	× **h**				× **k**	× **k**	× **k**

Tringa totanus																								
Over winter **Ruff** Philomachus pugnax	× **a**	× **a**	× **a**				× **d**			× **e**	× **e**		× **f**	× **g**	× **f**	× **h**	× **i**	× **h**				× **k**	× **k**	× **k**

a. Alteration of coastal processes/sediment transport: The Alde-Ore Estuary SPA is situated approximately 5 km south of the main development site. At this distance, no effects are predicted on the coastal processes and sediment transport as a result of the construction, operation or decommissioning and, therefore, no changes in the extent of the supporting habitats of the qualifying features for which Likely Significant Effect was identified on a precautionary basis. Consequently, no adverse effect on integrity is predicted (**section 8.3 b i, 8.3 c i, 8.3 d i, 8.3 g i, 8.3 h i** and **8.3 i i**) (**Doc Ref 5.10**).

b. Water quality effects – marine environment: For the period from April to August (which is relevant to Sandwich tern), the areas encompassed at surface by the existing 2°C and 3°C thermal plumes (for Sizewell B) extend to 18.6 km^2 and 10.5 km^2, respectively. With the incorporation of the Sizewell C thermal plumes, these areas are increased by to 51.3 km^2 for the 2°C uplift and 17.7 km^2 for the 3°C uplift. Sandwich terns have not bred at the Alde-Ore Estuary SPA for a number of years. However, should breeding birds recolonise the SPA, it is reasonable to assume that the main foraging area for the population would be defined by the mean maximum foraging range of this species. When these predicted effects are assessed in the context of the forging range for Sandwich tern, no adverse effect on the Alde-Ore Estuary SPA Sandwich tern population is predicted (**section 8.3 b ii**) (**Doc Ref 5.10**).

The chemical discharges will occur across a small part of the predicted foraging range of the Alde-Ore Estuary SPA breeding Sandwich tern population at concentrations that are considered to have the potential to affect the abundance of Sandwich tern prey. The total area affected by chemical discharges is predicted to encompass less than 0.2% of the predicted foraging range. Therefore, no adverse effect on integrity is predicted (**section 8.3 b ii**) (**Doc Ref 5.10**).

For little tern, the thermal plumes associated with the 2°C and 3°C temperature uplifts are considered for May to August (as the period over which it is present as a breeding species at the SPA). Over this period, the areas encompassed at the sea surface by the 98th percentiles for the existing 2°C and 3°C thermal plumes (for Sizewell B) extend to 16.7 km^2 and 9.4 km^2, respectively. Incorporating the Sizewell C thermal plumes together with the Sizewell B plumes increases these areas to 36.9 km^2 for the 2°C uplift and 15.3 km^2 for the 3°C uplift. When these predicted effects are assessed in the context of the forging range for little tern, no adverse effects on the Alde-Ore Estuary SPA little tern population are predicted (**section 8.3 c ii**) (**Doc Ref 5.10**).

There is no overlap of the predicted foraging range of the SPA breeding little tern population with the Sizewell C plumes

(for the defined thresholds) for Total Residual Oxidants (TRO), bromoform or hydrazine. Therefore, no adverse effects on the SPA little tern population are predicted as a consequence of chemical discharges during the operational period (**section 8.3 c ii**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** For the period from April to August (which is relevant to lesser black-backed gull), the areas encompassed at surface by the existing 2°C and 3°C thermal plumes (for Sizewell B) extend to 18.6 km^2 and 10.5 km^2, respectively. With the incorporation of the Sizewell C thermal plumes, these areas are increased by to 51.3 km^2 for the 2°C uplift and 17.7 km^2 for the 3°C uplift. Lesser black-backed gulls forage widely during the breeding period, with the mean maximum foraging range in marine environments estimated as 141 km. When these predicted effects are assessed in the context of the forging range for lesser black-backed gull, no adverse effects on the Alde-Ore Estuary SPA lesser black-backed gull population are predicted (**section 8.3 d ii**) (**Doc Ref 5.10**).

   The extents of the TRO, bromoform and hydrazine plumes at the sea surface within the predicted foraging range of the SPA lesser black-backed gull population represent less than 0.01% of this range. As such, no adverse effects on the SPA breeding lesser black-backed gull population are predicted as a consequence of chemical discharges during the operational period (**section 8.3 d ii**) (**Doc Ref 5.10**).

d. **Water quality effects – terrestrial environment:** Subject to the mitigation described in **section 7.4 b iii** (**Doc Ref 5.10**), the construction of the Two Village Bypass would not have an adverse effect on the water quality of the river. No adverse effects on the qualifying habitats of the Alde, Ore and Butley Estuaries SAC (estuaries, mudflats and sandflats, and Atlantic salt meadows) are therefore predicted. As these habitats also underpin the presence of SPA qualifying bird species, it is concluded that there would be no adverse effect on any SPA qualifying feature, including breeding Sandwich tern (**section 8.3 b iii, 8.3 c iii, 8.3 d iii, 8.3 g ii, 8.3 h ii** and **8.3 i ii**) (**Doc Ref 5.10**).

e. **Alteration of local hydrology and hydrogeology:** The proposed crossing over the River Alde could alter the local hydrology and hydrogeology of the river, which could have secondary impacts downstream on the habitats of the SPA qualifying features during construction and operation. The crossing has been designed to ensure that there would be no direct disturbance to the river and to preserve the natural integrity of the river banks, during both construction and operation. No adverse effects on hydrology and hydrogeology on the qualifying habits of the Alde, Ore and Butley Estuaries SAC (estuaries, mudflats and sandflats, and Atlantic salt meadows) are predicted during construction or operation. As these habitats underpin the presence of SPA qualifying bird species, it is concluded that there would be no adverse effect on any SPA qualifying feature during the construction or operational phase (**section 8.3 b iv, 8.3 c iv, 8.3 d iv, 8.3 g iii, 8.3 h iii** and **8.3 i iii**) (**Doc Ref 5.10**).

f. **Changes in air quality:** Changes in air quality would not have a direct effect upon SPA qualifying features but could cause effects via changes to vegetation (composition and structure) within the habitats upon which the qualifying features depend. During construction and decommissioning, changes in air quality could result from the generation of dust from the works and emissions from the campus Combined Heat and Power Plant (CHP), construction plant, other vehicles and generators for power equipment. The Alde-Ore Estuary SPA lies beyond the study area for the assessment of dust emissions (50 m of potential dust sources, 50 m of the routes used by construction vehicles on the public highway and within 500 m of the construction site access). Consequently, it is concluded that there would not be an adverse effect on the integrity of any qualifying feature of the Alde-Ore Estuary SPA due to air quality effects during the construction and decommissioning phases (**section 8.3 b v, 8.3 c v, 8.3 d v, 8.3 e i, 8.3 g iv, 8.3 h iv** and **8.3 i iv**) (**Doc Ref 5.10**).

g. **Changes in air quality:** For the Estuaries qualifying feature of the Alde, Ore and Butley Estuaries SAC, the modelling of the combustion scenarios predicts that the Critical Levels for NOx (long-term), NOx (short-term) and SO_2 (long-term) would not be exceeded. In addition, the Critical Load for nutrient nitrogen deposition would not be exceeded. Air Pollutant Information System notes that Estuaries are not sensitive to acidification and, therefore, Critical Loads are not defined for acid deposition for this qualifying feature. On this basis, it is concluded that there would not be an adverse effect on the integrity of this qualifying feature due to changes in air quality during the operational phase. For the mudflats and sandflats not covered by seawater at low tide qualifying feature of the Alde, Ore and Butley Estuaries SAC, Air Pollutant Information System does not define a nutrient nitrogen deposition Critical Load and – according to Air Pollutant Information System - this qualifying feature is not sensitive to acidification.

   On this basis, it is concluded that there would not be an adverse effect on the integrity of this qualifying feature due to changes in air quality during the operational phase. As these habitats also underpin the presence of SPA qualifying bird species, it is concluded that there would be no adverse effect on any SPA qualifying feature due to changes in air quality during the operational phase (**section 8.3 b v, 8.3 c v, 8.3 d v, 8.3 e i, 8.3 g iv, 8.3 h iv** and **8.3 i iv**) (**Doc Ref 5.10**).

h. **Disturbance due to an increase in recreational pressure:** The Alde-Ore Estuary SPA covers a large area with relatively few direct access points. Increases in predicted recreational visits to these access locations are predicted during the construction of Sizewell C, as a result of displacement of visitors from the Sizewell C area, and recreational use of this area by the construction workforce. The key estuarine habitats used by the SPA qualifying bird interests are remote from or inaccessible via the permissive footpath network; small predicted increases in visits to these would be unlikely to lead to any additional disturbance pressure that would have adverse ecological consequences. Access to coastal areas at Orfordness and Havergate Island is restricted and controlled by the National Trust and RSPB and no increase in

recreational disturbance is predicted to arise. Thus, while there could an increase in the number of visits to some locations around the SPA, the limited accessibility to habitats used by SPA qualifying bird species indicates that there would not be an adverse effect on site integrity due to increased recreation disturbance (**section 8.3 b vi**, **8.3 c vi**, **8.3. d vi**, **8.3 e ii**, **8.3 f ii**, **8.3 g v**, **8.3 h v** and **8.3 i v**) (**Doc Ref 5.10**).

i. **Disturbance due to an increase in recreational pressure:** There is the potential for any recreational response of people displaced by construction activity to be maintained through into the operational phase of Sizewell C. If this were to occur, displacement of recreational users from the Sizewell area to the access points for the Alde-Ore Estuary SPA could continue. The operational workforce would also be likely to make recreational use of surrounding areas, although this would be considerably smaller than the construction workforce. Any residual effects of visitor displacement from Sizewell C post-construction, and recreational use of the local area by operational workers, are predicted to be so small as to be undetectable in the context of the likely future drivers of trends in recreational use of the Suffolk Coast (population growth, initiatives to promote tourism and the increasing popularity of outdoor recreation) and the predicted numbers of annual visitor trips to the Suffolk Coast in the vicinity of the main development site. No adverse effect on integrity associated with increased recreational pressure is predicted on any SPA qualifying feature (**section 8.3 b vi**, **8.3 c vi**, **8.3. d vi**, **8.3. e ii**, **8.3. f ii**, **8.3 g v**, **8.3 h v** and **8.3 i v**) (**Doc Ref 5.10**).

j. **Physical interaction between species and project infrastructure:** During the operation of the Sizewell C Project, populations of the fish and invertebrate prey of SPA qualifying bird species which forage in marine environments (Sandwich tern, little tern and lesser black-backed gull) may be affected by impingement and entrainment within the cooling water intake, leading to potential indirect impacts on the SPA populations. Impingement and entrainment mortality is predicted to have a negligible effect on the local (ICES region) Spawning Stock Biomass (SSB) populations of key prey species for SPA qualifying species of the Alde-Ore Estuary. Effects are likely to be so small as to be undetectable in the context of year to year variation in populations due to other environmental factors. Impingement and entrainment of fish and invertebrate prey is not, therefore, predicted to result in depletion of prey resources for SPA qualifying bird species which forage in the marine environment. No adverse effect on integrity is predicted (**section 8.3 b vii, 8.3 c vii** and **8.3 d vii**) (**Doc Ref 5.10**).

k. **In-combination effects:** The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented separately for each effect pathway in **Table 8.4, Table 8.5** and **Table 8.6** (**section 8.3 k**) (**Doc Ref 5.10**). It is concluded that, with the adoption of the proposed mitigation measures (including those embedded into the design), the Sizewell C Project would not result in adverse effects on the integrity of the Alde-Ore Estuary SPA in-combination with other plans and projects (**section 8.3 k**) (**Doc Ref 5.10**).

HRA Integrity Matrix D2.2: Benacre to Easton Bavents SPA

Name of European site and designation: Benacre to Easton Bavents SPA															
EU Code: UK9009291															
Distance to Sizewell C MDS and/or Associated Development site: 15km															
European site features	**Adverse effect on integrity**														
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environment			Disturbance due to increase in recreational pressure			Physical interaction between species and project infrastructure			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Bittern** *Botaurus stellaris*							× **c**	× **c**	× **c**						
Breeding **Little Tern** *Sterna albifrons*	× **a**	× **a**	× **a**		× **b**		× **c**	× **c**	× **c**		× **d**		× **e**	× **e**	× **e**
Breeding **Marsh Harrier** *Circus aeruginosus*							× **c**	× **c**	× **c**						

a. Alteration of coastal processes/sediment transport: The Benacre to Easton Bavents SPA is situated approximately 15 km north-east of the main development site. At this distance, no effects are predicted on the coastal processes and sediment transport as a result of the construction, operation or decommissioning and, therefore, no changes in the extent of the coastal habitats used by breeding little tern are predicted. Consequently, there is no adverse effect on integrity is predicted (**section 8.5 c i**) (**Doc Ref 5.10**).

b. Water quality effects – marine environment: The Benacre to Easton Bavents SPA breeding little tern population could be subject to potential operational effects from thermal and chemical discharges which could affect the prey resource available to the population. However, there is no spatial overlap between the thermal plumes for the 2°C and

3°C uplifts or any of the chemical plumes with the predicted foraging range of the Benacre to Easton Bavents SPA breeding little tern population. Therefore, no adverse effect on the SPA little tern population is predicted (**section 8.5 c ii**) (**Doc Ref 5.10**).

c. **Disturbance due to increase in recreational pressure:** During the construction and decommissioning of the main development site, recreational users of the Sizewell C area may be displaced elsewhere, including to locations within and close to nearby European Sites; and the construction workforce may also use European Sites for recreation. Changes in visitor use may continue into the operational phase. The SPA is outside the recreation and access study area identified for Sizewell C within which it was considered that displaced visitors from the Sizewell C area might relocate. Based on this distance, and the results of the visitor surveys (where only 4% of respondents stated they would relocate outside the study area), it is considered that any increase in visitor pressure during the construction, operation or decommissioning of Sizewell C would be so small as to be undetectable. No adverse effect on integrity is predicted for any SPA qualifying interest feature (**section 8.5 b i, 8.5 c iii 8.5 d i**) (**Doc Ref 5.10**).

d. **Physical interaction between species and project infrastructure:** During the operation of Sizewell C, populations of the fish prey of little terns may be affected by impingement and entrainment within the cooling water intake, leading to potential indirect impacts on the SPA population. Impingement and entrainment mortality of herring and sprat is estimated at <1% of the relevant SSB and effects on these fish species are predicted to be so small as to be undetectable in the context of year to year variation in fish populations due to other environmental factors. Impingement and entrainment of fish and invertebrate prey is not, therefore, predicted to result in depletion of prey resources for little terns breeding in the Benacre to Easton Bavents SPA, and no adverse effect on integrity is predicted (**section 8.5 c iv**) (**Doc Ref 5.10**).

e. **In-combination effects:** The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented separately for each effect pathway in **Table 8.7** and **Table 8.8** (**section 8.5 fb**) (**Doc Ref 5.10**). It is concluded that, with the adoption of the proposed mitigation measures (including those embedded into the design), the Sizewell C Project would not result in adverse effects on the integrity of the Alde-Ore Estuary SPA in-combination with other plans and projects (**section 8.5 f**) (**Doc Ref 5.10**).

HRA Integrity Matrix D2.3: Deben Estuary SPA

Name of European site and designation: Deben Estuary SPA						
EU Code: UK9009261						
Distance to NSIP: 22.2 km						
European site features	**Adverse effect on integrity**					
Effect	Disturbance effects on species populations			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
Wintering **Avocet** *Recurvirostra avosetta*	× **a**	× **a**	× **a**	× **b**	× **b**	× **b**
Wintering **Dark-bellied Brent goose** *Branta bernicla bernicla*	× **a**	× **a**	× **a**	× **b**	× **b**	× **b**

a. Disturbance effects on species populations: The construction and decommissioning phases of the Freight Management Facility (expected to last for approximately 12 to 18 months during construction, with this assumed to be a worst-case for decommissioning) would be sources of noise and visual disturbance, but the distance of the site from the Deben Estuary SPA means that any effects of such disturbance on the SPA qualifying features are highly unlikely. The increase in vehicle movement is considered to be of little consequence in terms of disturbance to the SPA qualifying features when compared to existing vehicle movements of the A14 trunk road.

During the operational phase of the Freight Management Facility (expected to be 10 years), the estimated HGVs activity, within the context of existing vehicle movements on the A14 and in conjunction with the considerable distance of the site from the SPA, is also considered highly unlikely to result in any increase in disturbance effects on the qualifying interest features.

No adverse effect on integrity is predicted (**section 8.6 b i**) (**Doc Ref 5.10**).

b. In-combination effects: The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented in **Table 8.9** (**section 8.6 d**) (**Doc Ref 5.10**). It is concluded that the Sizewell C Project would not result in an adverse effect on the integrity of the Deben Estuary SPA in-combination with other plans and projects (**section 8.6 d**) (**Doc Ref 5.10**).

HRA Integrity Matrix D2.3: Minsmere-Walberswick SPA

Name of European site and designation: Minsmere-Walberswick SPA

EU Code: UK9009101

Distance to NSIP: Adjacent

European site features	**Adverse effect on integrity**																													
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environment			Water quality effects – terrestrial environment			Alteration of local hydrology and hydro geology			Changes in air quality			Direct habitat loss and fragmentation			Disturbance effects on species populations			Disturbance due to increase in recreational pressure			Physical interaction between species and project infrastructure			In-Combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Avocet** *Recurvirostra avosetta*							× **d**	× **e**	× **d**	× **f**	× **f**	× **f**	× **g**	× **g**	× **g**				× **m**	× **m**	× **m**	× **y**	× **y**	× **y**				× **aa**	× **aa**	× **a a**
Breeding **Bittern** *Botaurus stellaris*							× **d**	× **e**	× **d**	× **f**	× **f**	× **f**	× **g**	× **g**	× **g**				× **m**	× **m**	× **m**	× **y**	× **y**	× **y**				× **aa**	× **aa**	× **a a**
Breeding **Little Tern** *Sterna albifrons*	× **a**	× **a**	× **a**	× **b**	× **c**	× **b**	× **d**	× **e**	× **d**	× **f**	× **f**	× **f**	× **g**	× **g**	× **g**				× **n**	× **o**	× **n**	× **y**	× **y**	× **y**		× **z**		× **aa**	× **aa**	× **a a**
Breeding **Marsh Harrier** *Circus aeruginosus*							× **d**	× **e**	× **d**	× **f**	× **f**	× **f**	× **g**	× **g**	× **g**	× **h**	× **h**	× **h**	✓ **p**	× **q**	× **p**	× **y**	× **y**	× **y**				× **aa**	× **aa**	× **a a**
Breeding **Nightjar** *Caprimulgus europaeus*													× **g**	× **g**	× **g**	× **i**	× **i**	× **i**	× **r**	× **r**	× **r**	× **y**	× **y**	× **y**				× **aa**	× **aa**	× **a a**

Breeding **Shovelor** *Anas clypeata*							× d	× e	× d	× f	× f	× f	× g	× g	× g				× s	× s	× s	× y	× y	× y				× aa	× aa	× a a
Breeding **Teal** *Anas crecca*							× d	× e	× d	× f	× f	× f	× g	× g	× g				× t	× t	× t	× y	× y	× y				× aa	× aa	× a a
Breeding **Gadwall** *Anas strepera*							× d	× e	× d	× f	× f	× f	× g	× g	× g				× s	× s	× s	× y	× y	× y				× aa	× aa	× a a
Wintering **Gadwall** *Anas strepera*							× d	× e	× d	× f	× f	× f	× g	× g	× g	× j	× j	× j	× u	× u	× u	× y	× y	× y				× aa	× aa	× a a
Wintering **Hen Harrier** *Circus cyaneus*							× d	× e	× d	× f	× f	× f	× g	× g	× g	× k	× k	× k	× v	× v	× v	× y	× y	× y				× aa	× aa	× a a
Wintering **Shovelor** *Anas Clypeata*							× d	× e	× d	× f	× f	× f	× g	× g	× g	× l	× l	× l	× w	× w	× w	× y	× y	× y				× aa	× aa	× a a
Wintering **White Fronted Goose** *Anser albifrons albifrons*							× d	× e	× d	× f	× f	× f	× g	× g	× g				× x	× x	× x	× y	× y	× y				× aa	× aa	× a a

a. Alteration of coastal processes/sediment transport: Modelling results indicate that the construction of the main development site, including the construction discharge outfall, cooling water infrastructure, fish recovery and return system, beach landing facility (BLF) and flood defence and coastal protection measures would not significantly affect coastal processes. Any effects on sediment transport would be confined to coastline within 200 m of the BLF in each direction, with no significant changes outside this area. This also applies to the ongoing operational phase effects. Consequently, no changes are predicted in the extent of the supporting habitats of the qualifying interest features of the SPA and no adverse effect on integrity of the breeding little tern population as a result of alteration to coastal processes or sediment transport is predicted (**section 8.8 e i**) (**Doc Ref 5.10**).

b. Water quality effects – marine environment: Discharges with the potential to have effects on the prey availability of SPA qualifying features are restricted to increases in suspended sediment concentrations (SSC) and hydrazine (during commissioning). Based on the small extent of overlap of the little tern foraging ranges with the zone predicted to be affected by changes in water quality, combined with the temporary and short-term duration of such effects, no adverse effect on integrity is predicted (**section 8.8 e ii**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** For little tern, the thermal plumes associated with the 2°C and 3°C temperature uplifts are considered for May to August (as the period over which it is present as a breeding species at the SPA). Over this period, the areas encompassed at the sea surface by the 98th percentiles for the existing 2°C and 3°C thermal plumes (for Sizewell B) extend to 16.7 km^2 and 9.4 km^2, respectively. Incorporating the Sizewell C thermal plumes together with the Sizewell B plumes increases these areas to 36.9 km^2 for the 2°C uplift and 15.3 km^2 for the 3°C uplift.

   Numbers of breeding little terns at the Minsmere-Walberswick SPA have declined and, in recent years, breeding has been sporadic and has often involved relatively small numbers of pairs. It is reasonable to assume that the main foraging areas for each of the colony populations would be defined by the area within 3.9 km of the colony alongshore and 2.4 km seawards.

   Given the lack of any overlap of the predicted foraging ranges for the Minsmere-Walberswick SPA breeding little tern population with the Sizewell C thermal plumes for the 2°C and 3°C uplifts, no adverse effects on the SPA little tern population are predicted as a consequence of thermal discharges during the operational period (**section 8.8 e ii**) (**Doc Ref 5.10**).

   Over the course of the breeding period, the extent of overlap between the instantaneous 2°C thermal plume for Sizewell B with Sizewell C and the foraging ranges averages 18.4% for the Minsmere colony and 3.3% for the Dingle colony, with these percentages representing modest increases relative to the average overlaps with the existing 2°C plume associated with Sizewell B. It is considered that the 2°C uplift is likely to represent an overly precautionary threshold. The 3°C uplift indicates considerably less overlap with the little tern foraging ranges and smaller absolute increases relative to the existing, baseline, conditions.

   There is no overlap of the predicted foraging ranges of the SPA breeding little tern population with the Sizewell C plumes (for the defined thresholds) for TRO, bromoform or hydrazine

   In light of the above, no adverse effect on integrity is predicted as a consequence of thermal and chemical discharges during the operational period (**section 8.8 e ii**) (**Doc Ref 5.10**).

d. **Water quality effects – terrestrial environment:** There is potential for the construction and decommissioning phases to result in changes to water quality (surface water and groundwater) that could affect the freshwater and marshland habitats that support these qualifying interest features of the SPA. However, mitigation measures are embedded in the

design to manage surface water discharges and, therefore, it is concluded that there would not be an adverse effect on any SPA qualifying interest feature during the construction or decommissioning phases (**section 8.8 b i, 8.8 c i, 8.8 d i, 8.8 e iii, 8.8 f i, 8.8 g i, 8.8 h i, 8.8 j i, 8.8 k i, 8.8 l i** and **8.8 m i**) (**Doc Ref 5.10**).

e. **Water quality effects – terrestrial environment:** The drainage strategy for the construction phase would also apply during the operational phase. With this mitigation in place it is concluded that there would not be an adverse effect on integrity of any SPA qualifying feature during the operational phase (**section 8.8 b i, 8.8 c i, 8.8 d i, 8.8 e iii, 8.8 f i, 8.8 g i, 8.8 h i, 8.8 j i, 8.8 k i, 8.8 l i** and **8.8 m i**) (**Doc Ref 5.10**).

f. **Alteration of local hydrology and hydrogeology:** The construction, operation and decommissioning phases have the potential to result in changes to the hydrological conditions of the SPA which may, in turn, affect the extent of wetland habitats as well as the distribution and composition of associated plant species and communities on which the bird qualifying interest features depend. The Minsmere Sluice is the main control structure governing the flow and water level regimes of the Minsmere New Cut, Leiston Drain and Scott's Hall Drains. There is the theoretical possibility that if the flows within the Leiston Drain are increased as a result of construction to the south, this could cause excessive back flooding of the Scott's Hall Drain. This back flooding could then result in increased inundation of habitats within part of the SPA site, preventing control of water levels. Primary mitigation measures are embedded in the design to manage surface water discharges, flows and levels. Consequently, no adverse effect on integrity is predicted as a result of alteration of local hydrology and hydrogeology (**section 8.8 b ii, 8.8 c ii, 8.8 d ii, 8.8 e iv, 8.8 f ii, 8.8 g ii, 8.8 h ii, 8.8 j i, 8.8 k i, 8.8 l i** and **8.8 m i**) (**Doc Ref 5.10**).

g. **Changes in air quality:** During construction and decommissioning, changes in air quality could result from the generation of dust from construction works and emissions from the campus, construction plant, other vehicles and generators to power equipment. The air quality assessment predicts that the extent of any dust-related effect is likely to occur over a relatively small area, with deposition likely to occur close (10s of metres) from the point of origin. Dust generation would likely continue for the duration of the construction phase, but the impacts of dust are likely to be reversible. The primary mitigation measure proposed is the development of a dust management plan outlining a range of measures that would ensure dust generation is kept to a minimum (and within the threshold limits of 0.5 $g/m^2/day$).

   Transport-related emissions have the potential to affect habitats. However, the background levels of nutrient and acid deposition already exceed the Critical Load within the Ramsar site and given background rates of high chronic deposition, the PCs are unlikely to result in significant changes in species composition or habitat condition.

It is concluded that there would not be an adverse effect on supporting habitats for SPA qualifying interest features and, therefore, no adverse effect on the SPA (**section 8.8 b iii, 8.8 c iii, 8.8 d iii, 8.8 e v, 8.8 f iii, 8.8 g iii, 8.8 h iii, 8.8 i i, 8.8 j ii, 8.8 k ii, 8.8 l ii** and **8.8 m ii**) (**Doc Ref 5.10**).

Air quality effects on habitats within the SPA during the operational phase are assessed in **section 7.7 b i** and **section 7.7 c iii**. The predicted PC and PEC during operation are assessed in the context of the Critical Levels for air emissions and Critical Loads for nutrient nitrogen and acid deposition. On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of the qualifying interest features of the SPA due to changes in air quality during the operational phase (**section 8.8 b iii, 8.8 c iii, 8.8 d iii, 8.8 e v, 8.8 f iii, 8.8 g iii, 8.8 h iii, 8.8 i i, 8.8 j ii, 8.8 k ii, 8.8 l ii** and **8.8 m ii**) (**Doc Ref 5.10**).

h. Direct habitat loss and fragmentation: The construction phase would lead to the loss of 7.03 ha of the Sizewell Marshes SSSI. To mitigate for the loss of habitat within Sizewell Marshes SSSI (and provide alternative wetland habitat), primary mitigation measures to create like for like replacement reedbed and ditch habitat have been implemented at Aldhurst Farm. This habitat loss represents a small proportion of the available wetland foraging habitat for the SPA marsh harrier population and occurs within a wider area (the Sizewell Marshes) which is less heavily used by foraging marsh harriers than other areas of wetland habitat closer to the nesting area (e.g. the Minsmere South Levels). Consequently, it is concluded that no adverse effect on the integrity of the marsh harrier population is predicted (**section 8.8 d iv**) (**Doc Ref 5.10**).

i. Direct habitat loss and fragmentation: Baseline surveys provided no evidence of breeding nightjar within or close to the areas encompassed by the main development site. It is also unlikely that SPA birds will rely on suitable habitat near to the main development site for foraging because the main breeding sites within the SPA are over 1 km from the main development site. Therefore, no adverse effect on integrity of the SPA nightjar population is predicted (**section 8.8 i ii**) (**Doc Ref 5.10**).

j. Direct habitat loss and fragmentation: It is possible that the Minsmere-Walberswick SPA non-breeding gadwall population depends upon habitats in the Sizewell Marshes, so that there may be functional linkage with the Sizewell Marshes. Given this, it is possible that the loss of the 7.03 ha of wetland habitat within the Sizewell Marshes SSSI could affect the SPA non-breeding gadwall population.

Baseline data indicate that numbers of non-breeding gadwall on the Sizewell Marshes may vary between different winters but that numbers are relatively low compared to those occurring in other areas of suitable habitat within, and in close proximity to, the SPA. Distributional data also suggest that the areas of habitat which would be lost are not of

disproportionate importance to non-breeding gadwall relative to other parts of the Sizewell Marshes. Consequently, no adverse effect on the integrity of the Minsmere-Walberswick SPA non-breeding gadwall population is predicted (**section 8.8 k iii**) (**Doc Ref 5.10**).

k. **Direct habitat loss and fragmentation:** As with marsh harrier, wetland habitats may be important as foraging areas for the Minsmere-Walberswick SPA non-breeding hen harrier population. As for the marsh harrier, no adverse effect on the integrity of the Minsmere-Walberswick SPA hen harrier population is predicted as a consequence of habitat loss and fragmentation during construction, operation and decommissioning (**section 8.8 j iii**) (**Doc Ref 5.10**).

l. **Direct habitat loss and fragmentation:** It is possible that the Minsmere-Walberswick SPA non-breeding shoveler population depends upon habitats in the Sizewell Marshes, so that there may be functional linkage with the Sizewell Marshes. Given this, it is possible that the loss of the 7.03 ha of wetland habitat within the Sizewell Marshes SSSI could affect the SPA non-breeding shoveler population.

   Baseline data indicate that numbers of non-breeding shoveler on the Sizewell Marshes are relatively low compared to those occurring in other areas of suitable habitat within, and in close proximity to, the SPA. Distributional data also suggest that the areas of habitat which would be lost are unlikely to be heavily used by non-breeding shoveler, although records of shoveler were particularly scarce in the surveys providing distributional information. Consequently, no adverse effect on the integrity of the Minsmere-Walberswick SPA non-breeding shoveler population is predicted (see **section 8.8 l iii**) (**Doc Ref 5.10**).

m. **Disturbance effects on species populations:** Disturbance effects on the Minsmere-Walberswick SPA breeding avocet and bittern population may arise via visual and acoustic stimuli associated with the construction, operation and decommissioning of the Sizewell C Project. Such stimuli could affect this SPA population as a result of disturbance to nesting or feeding birds, resulting in a range of possible consequences with the potential to cause adverse effects. **Section 8.8 b iv** (**Doc Ref 5.10**) provides the in-depth explanation of the disturbance effects that may arise during the Sizewell C Project.

   Due to the distance of the SPA from the main development site, there is little potential for noise and visual disturbance from construction and decommissioning activities to affect avocet using habitats within the SPA itself. There is no evidence of avocet breeding in the Sizewell Marshes, whilst they have not been recorded breeding in the Minsmere South Levels since 2010.

Noise levels associated with the operation of the Sizewell C Project are unlikely to differ substantially from the existing baseline situation. This is also considered to be the case for visual disturbance, except in relation to artificial lighting; however, no part of the site would be subject to ambient light levels above 30 lux, and there would be no lighting at all between the Upper Abbey Bridleway and Goose Hill. Light spillage from these proposals would not affect the areas used by the SPA breeding avocet and bittern population.

The baseline survey data provide no evidence that bittern breed within either the Minsmere South Levels or Sizewell Marshes, and the overall usage of these areas by the SPA bittern population appears to be limited. Therefore, although there is potential for the effects of noise and visual disturbance to occur across parts of the Minsmere South Levels and (particularly) the Sizewell Marshes, this would have, at most, a small effect on the SPA bittern population.

Based on this, no adverse effect on the integrity of the breeding avocet and bittern population is predicted as a consequence of noise and visual disturbance (**sections 8.8 b iv** and **8.8 c iv**) (**Doc Ref 5.10**).

n. Disturbance effects on species populations: The Minsmere little tern colony is the closest to the main development site. This colony on the scrape is located 500 – 700 m north of the Minsmere New Cut, making it a little over 1.5 km from the main development site at its nearest point. As such, noise and visual disturbance from construction activities are unlikely to affect any nesting little terns when they are present at this colony, or indeed at any other historical or current colony locations within the SPA. The SPA little tern population could also be affected by noise and visual disturbance when away from the nesting colony and foraging in the marine environment. Such effects could occur as a result of direct disturbance to the birds themselves from increased vessel traffic or indirectly as a result of the effects of underwater noise on the fish prey species of little tern.

Section 8.8 e vi (**Doc Ref 5.10**) provides an in-depth assessment of noise and visual disturbance on little tern. The assessment concludes no adverse effects on the integrity of the SPA breeding little tern population as a consequence of noise and visual disturbance affecting birds when they are present at the breeding colony or in the marine environment.

o. Disturbance effects on species populations: As detailed for breeding avocet and bittern, noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The levels of underwater noise predicted to be generated with Sizewell C and Sizewell B operational, are not expected to differ markedly from current baseline levels resulting from the operation of Sizewell B alone. Therefore, no adverse effect on the integrity of on the SPA little tern population is predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 e vi**) (**Doc Ref 5.10**).

p. **Disturbance effects on species populations:** Disturbance effects on the Minsmere-Walberswick SPA breeding marsh harrier population may arise via visual and acoustic stimuli associated with the construction and decommissioning of the Sizewell C Project. Such stimuli could affect this SPA population as a result of disturbance to nesting or foraging birds, resulting in a range of possible consequences with the potential to cause adverse effects. **Section 8.8 d v** (**Doc Ref 5.10**) provides an in-depth assessment of the breeding marsh harrier ecology and effect from noise and visual disturbance.

   The assessment identified that an adverse effect on breeding marsh harrier cannot be excluded as a consequence of the construction activities of the Sizewell C Project through the displacement of birds from foraging habitats (**section 8.8 d v**) (**Doc Ref 5.10**). An adverse effect on integrity is not predicted to arise during the decommissioning phase (**Section 8.8 d v**) (**Doc Ref 5.10**).

q. **Disturbance effects on species populations:** As detailed for breeding avocet, noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The extent of artificial lighting associated with the operational period is described in **section 8.8 b** (**Doc Ref 5.10**). Based on this information, light spillage is not predicted to affect the nesting areas used by the SPA marsh harrier population, whilst the species does not hunt at night. Consequently, no adverse effect on the integrity of SPA marsh harrier population is predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 d v**) (**Doc Ref 5.10**).

r. **Disturbance effects on species populations:** The main breeding areas for nightjar within the Minsmere-Walberswick SPA are over 1 km from the main development site, where the predicted peak noise levels from construction activities are considerably below 64 dB L_{Amax}. It is assumed that this would also represent a worst-case for decommissioning. Therefore, no adverse effect on the integrity of SPA breeding nightjar population is predicted as a consequence of noise and visual disturbance from construction and decommissioning activities (**section 8.8 i iii**) (**Doc Ref 5.10**).

   Noise and visual disturbance during the operational phase is unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The extent of artificial lighting associated with the operational period is described in **section 8.8 b** and would not extend into any areas that are known to be used by nightjar for nesting (and which are also unlikely to be used by SPA birds for foraging due to their distance from the main nesting areas). Therefore, no adverse effects on the integrity of the SPA breeding nightjar population is predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 i iii**) (**Doc Ref 5.10**).

s. **Disturbance effects on species populations:** On the basis of the evidence relating to the effects of noise, visual and artificial lighting disturbance on these breeding waterbirds, it is considered unlikely that noise and visual disturbance from the construction of the Sizewell C Project would affect gadwall and shoveler, which breed within the Minsmere-Walberswick SPA. This is because the potential visual impact zone does not extend onto the SPA (other than in the south-eastern extremity, which does not include suitable habitat). However, these species also breed within the Minsmere South Levels and Sizewell Marshes, and the birds using these areas may be functionally linked to the SPA population. **Section 8.8 f iv** and **Section 8.8 g iv** (**Doc Ref 5.10**) describes the nature of this functional linkage and concludes any effects on SPA populations of these species would not be significant. In conclusion, no adverse effect on integrity of the SPA breeding gadwall and shoveler populations is predicted (**section 8.8 f iv** and **section 8.8 g iv**) (**Doc Ref 5.10**).

t. **Disturbance effects on species populations:** On the basis of the evidence relating to the effects of noise, visual and artificial lighting disturbance on this breeding waterbird, it is considered unlikely that noise and visual disturbance from the construction of Sizewell C would affect teal which are breeding within the Minsmere-Walberswick SPA. This is because the potential visual impact zone does not extend onto the SPA (other than in the south-eastern extremity, which does not include suitable habitat). Teal are also essentially absent as a breeding species from the Minsmere South Levels and Sizewell Marshes, with no breeding records from the former area since at least 2010 and one record of a single breeding pair (in 2013) since 2011 for the latter area. Consequently, no adverse effect on the integrity of the SPA breeding teal population is predicted as a consequence of noise and visual disturbance from construction and decommissioning activities (**section 8.8 h iv**) (**Doc Ref 5.10**).

   The extent of artificial lighting associated with the operational period is described in **section 8.8 b** (**Doc Ref 5.10**). Based on this information, light spillage is not predicted to affect areas that may be used by the SPA breeding teal population, particularly given their overall scarcity, and virtual absence from potentially functionally linked habitat outside the SPA. Therefore, no adverse effect on the integrity of the SPA teal population is predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 h iv**) (**Doc Ref 5.10**).

u. **Disturbance effects on species populations:** On the basis of the evidence relating to the effects of noise, visual and artificial lighting disturbance on this non-breeding waterbird, it is considered unlikely that noise and visual disturbance from the construction of the Sizewell C Project would affect wintering gadwall when present within the Minsmere-Walberswick SPA. However, both the Minsmere South Levels and Sizewell Marshes also provide suitable habitat for wintering gadwall and the SPA population may also depend upon these areas. The potential exists for effects to arise on the SPA non-breeding gadwall population as a result of noise and visual disturbance to SPA birds which may rely on habitats within the Minsmere South Levels and Sizewell Marshes. **Section 8.8 k iv** (**Doc Ref 5.10**) provides details of

the assessment of construction and decommissioning activities and disturbance effects on wintering gadwall. The assessment concludes no adverse effect on the integrity of the SPA non-breeding gadwall population are predicted as a consequence of noise and visual disturbance from construction and decommissioning activities.

Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. Light spillage is not predicted to affect areas of the Minsmere South Levels and Sizewell Marshes that may be used by the SPA non-breeding gadwall population. No adverse effects on the integrity of the SPA non-breeding gadwall population is predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 k iv**) (**Doc Ref 5.10**).

v. **Disturbance effects on species populations:** Non-breeding hen harriers using habitats within the Minsmere-Walberswick SPA are unlikely to be affected by noise and visual disturbance from construction activities, given that potential visual impact zones do not extend onto the SPA (other than in the south-eastern extremity, which does not include suitable hen harrier habitat). The Minsmere South Levels and Sizewell Marshes also provide suitable foraging habitat for hen harrier, whilst the species will sometimes hunt over agricultural habitats. However, non-breeding hen harriers have been scarce within, or absent from, the SPA in recent years, and baseline surveys provide little evidence for any substantial use of habitats in close proximity to the main development site, where potential effects of noise and visual disturbance could occur. Therefore, no adverse effect on the integrity of the SPA non-breeding hen harrier population are predicted as a consequence of noise and visual disturbance from construction and decommissioning activities.

   Noise and visual disturbance during the operation of Sizewell C is unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The extent of artificial lighting associated with the operational period would not extend into any areas that would be used as night-time roosts by hen harriers. Therefore, no adverse effect on the integrity of the SPA hen harrier population are predicted as a consequence of noise and visual disturbance from operational activities.

w. **Disturbance effects on species populations:** On the basis of the evidence relating to the effects of noise, visual and artificial lighting disturbance on this non-breeding waterbird, it is considered unlikely that noise and visual disturbance from the construction of the Sizewell C Project would affect wintering shoveler when present within the Minsmere-Walberswick SPA. However, both the Minsmere South Levels and Sizewell Marshes also provide suitable habitat for wintering shoveler and the SPA population may also depend upon these areas. The potential exists for effects to arise on the SPA wintering shoveler population as a result of noise and visual disturbance to SPA birds which may rely on habitats within the Minsmere South Levels and Sizewell Marshes. **Section 8.8 l iv** (**Doc Ref 5.10**) provides details of the

assessment of construction and decommissioning activities and disturbance effects on wintering shoveler. The assessment concludes no adverse effect on the integrity of the SPA wintering shoveler population is predicted as a consequence of noise and visual disturbance from construction and decommissioning activities.

Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. Light spillage is not predicted to affect areas of the Minsmere South Levels and Sizewell Marshes that may be used by the SPA wintering shoveler population. Therefore, no adverse effect on the integrity of the SPA wintering shoveler population is predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 l iv**) (**Doc Ref 5.10**).

x. **Disturbance effects on species populations:** On the basis of the evidence relating to the effects of noise, visual and artificial lighting disturbance on this non-breeding waterbird, it is considered unlikely that noise and visual disturbance from the construction of the Sizewell C Project would affect wintering white-fronted geese when present within the Minsmere-Walberswick SPA. The baseline survey data demonstrate that white-fronted geese make little diurnal use of the Minsmere South Levels and Sizewell Marshes, with the main daytime feeding area being at North Warren. However, birds are reported to often roost at night on the Minsmere-Walberswick SPA, and sometimes Minsmere South Levels, which are considerably closer to the main development site. **Section 8.8 m iii** (**Doc Ref 5.10**) provides further detail of the assessment on wintering white-fronted goose. The assessment concludes no adverse effect on the integrity of the SPA non-breeding white-fronted goose population is predicted as a consequence of noise and visual disturbance from construction and decommissioning activities.

   Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. As described above for breeding avocet, light spillage is not predicted to affect areas of the Minsmere South Levels and Sizewell Marshes that may be used by the SPA wintering white-fronted goose population. Therefore, no adverse effects on the SPA wintering white-fronted goose population are predicted as a consequence of noise and visual disturbance from operational activities (**section 8.8 m iii**) (**Doc Ref 5.10**).

y. **Disturbance due to increase in recreational pressure:** Increases in predicted recreational visits to locations which give access to the Minsmere-Walberswick SPA are predicted during the construction of the Sizewell C Project as a result of displacement of visitors from the Sizewell C area (estimated from visitor surveys), and recreational use of this area by the construction workforce (estimated based on the predicted profile and behaviour of the workforce). These increases may persist into the operational period, although it is noted that the contribution of the operational workforce to this would be less than during construction, because of the smaller size of the operational workforce.

The largest potential increase during construction (and by proxy, decommissioning) is predicted for the Minsmere-Eastbridge area in the southern part of the SPA. It is considered likely that a large proportion of those who said they would relocate to Minsmere, particularly if local to the Sizewell area, would relocate to sites on the periphery of the RSPB Minsmere Reserve (Minsmere Outer, access point O) rather than the main reserve itself, as such locations would provide access to the local footpath network without having to access the main reserve (where access is controlled and dogs are not allowed except for the visitor centre).

Given restrictions on access to areas of wetland habitat at Minsmere that support SPA wetland bird species (mainly within the RSPB reserve), the risk of any additional disturbance pressure being exerted on these populations in the Minsmere area is therefore considered to be highly unlikely.

At Walberswick, the predicted small number of additional visitors to the area, suggests that an increase in disturbance pressure on wetland birds and nightjar breeding in heathland habitats is unlikely to arise. Wetland areas are predominantly within areas managed as Nature Reserves by Natural England, RSPB and SWT, where access is restricted to paths and viewing facilities.

Management measures are currently in place to reduce the risk of recreational disturbance for breeding little terns using coastal shingle habitats throughout the SPA and are expected to continue.

Access points to Westleton Heath and other heathland areas within the Minsmere (southern) area of the SPA are highlighted as locations where displaced recreational users could potentially increase disturbance impacts on nightjar. In light of this, and the relatively high predicted increases in recreational use of this area, it is proposed that existing recreational management measures for heathland areas within this section of the SPA are enhanced as appropriate to minimise the potential for any increase in recreational disturbance pressure on breeding nightjar and other breeding birds of heathland habitats. This would form part of the Rights of Way and Access Strategy, identified to mitigate potential effects of increased recreational pressure during the construction (and by proxy decommissioning) and operational phases. Subject to this, and the continuation of existing management measures to protect nesting little terns, increase in recreational pressure is not predicted to have an adverse effect on the integrity of the Minsmere-Walberswick SPA during the construction and decommissioning phases (**section 8.8 b v, 8.8 c v, 8.8 d vi, 8.8 e vii, 8.8 f v, 8.8 g v, 8.8 h v, 8.8 i iv, 8.8 j v, 8.8 k v, 8.8 l v, 8.8 m iv**) (**Doc Ref 5.10**).

Assuming, as a worst case, that the changes in visitor use predicted during construction continue into the operational phase, then, subject to management measures as described above, no adverse effect on integrity is predicted during the operational phase.

z. **Physical interaction between species and project infrastructure:** During the operational phase, prey populations of little terns may be affected by impingement and entrainment within the cooling water intake, leading to potential indirect

effects on the SPA population. Based on modelling of predicted losses, impingement and entrainment of prey is not predicted to result in depletion of prey resources for little terns breeding at the Minsmere-Walberswick SPA, and an adverse effect on integrity is not predicted (**section 8.8 e viii**) (**Doc Ref 5.10**).

aa. In-combination effects: The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented in **Table 8.22, Table 8.23, Table 8.24** and **Table 8.25** (**Doc Ref 5.10**). It is concluded that the Sizewell C Project would not result in adverse effects on the integrity of the Minsmere-Walberswick SPA in-combination with other plans and projects (**section 8.8 o**) (**Doc Ref 5.10**).

HRA Integrity Matrix D2.4: Outer Thames Estuary SPA

Name of European site and designation: Outer Thames Estuary SPA												
EU Code: UK9020309												
Distance to NSIP: 0 km												
European site features	**Adverse effect on integrity**											
Effect	Water quality effects – marine environment			Disturbance effects on species populations			Physical interaction between species and project infrastructure			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Wintering / passage **Red-throated diver** *Gavia stellata*	× **a**	× **b**	× **a**	× **f**	× **g**	× **f**		× **k**		× **f**	× **f**	× **f**
Breeding **Little Tern** *Sterna albifrons*	× **c**	× **c**	× **c**	× **h**	× **h**	× **h**		× **l**		× **f**	× **f**	× **f**
Breeding **Common Tern** *Sterna hirundo*	× **d**	× **e**	× **d**	× **i**	× **j**	× **i**		× **m**		× **f**	× **f**	× **f**

a. Water quality effects – marine environment: Discharges with the potential to have effects on the prey availability of SPA qualifying features are restricted to increases in suspended sediment concentrations (SSC) and hydrazine (during commissioning). The areas predicted to be affected are relatively small, with resulting plumes relatively short-lived. This is particularly the case when these are considered relative to the extent of the foraging area available to non-breeding red-throated divers within the Outer Thames Estuary SPA. Given this, no adverse effect on the integrity of the non-breeding red-throated diver population is predicted (**section 8.10 d i**) (**Doc Ref 5.10**).

b. Water quality effects – marine environment: For red-throated diver, the thermal plumes associated with the 2°C and 3°C temperature uplifts are considered for September to March (as the period over which this species is present within the SPA). These show that for the combined effects of Sizewell B and Sizewell C, the 2°C uplift accounts for a peak of 62.0 km^2 (or 1.6%) of the SPA area at any one point in time, and an average of 11.4 km^2 (or 0.3%). These percentage overlaps with the SPA are considerably lower when considering the 3°C uplift.

The extents of the TRO and bromoform plumes (for the defined thresholds) at the sea surface for Sizewell C encompass areas of 3.4 km^2 and 0.52 km^2 of the SPA, representing 0.09% and 0.01% of the SPA, respectively. These compare to existing plume areas within the SPA from Sizewell B of 3.9 km^2 for TRO and 3.1 km^2 for bromoform, representing 0.10% and 0.08% of the SPA, respectively.

Based on the above, the thermal and chemical discharges from the Sizewell C Project would occur across a small part of the SPA only and be restricted to the northern parts of the SPA, where the densities of red-throated diver are considerably lower than in the more southern parts. No adverse effect on integrity of the SPA red-throated diver population is predicted (**section 8.10 d i**) (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** The potential marine water quality effects on the foraging habitats of little terns during construction, operation and decommissioning are assessed for each of the breeding colony SPAs as assessed for Alde-Ore Estuary SPA, Deben Estuary SPA and Minsmere-Walberswick SPA. No adverse effect on the integrity of the Outer Thames Estuary SPA little tern population is predicted (**section 8.10 b i**) (**Doc Ref 5.10**).

d. **Water quality effects – marine environment:** The predicted foraging ranges of common terns from the Orfordness and Minsmere colonies show negligible (1% or less in all cases) overlap with the maximum areas of the instantaneous plumes calculated for surface SSC above 100 mg/l for each of the different dredging activities. For hydrazine (at levels above acute PNEC concentrations), the peak instantaneous plume area encompasses less than 0.1% of the foraging range of each of the Minsmere and Orfordness colonies. Given the very small degree of overlap of the plumes from the construction (and decommissioning) related discharges with the predicted common tern foraging ranges, combined with the temporary and short-term duration of these plumes, no adverse effect on the Outer Thames Estuary SPA common tern population is predicted (**section 8.10 c i**) (**Doc Ref 5.10**).

e. **Water quality effects – marine environment:** For common tern, the thermal plumes associated with the 2°C and 3°C temperature uplifts are considered for May to August (as the period over which it is present as a breeding species at the colonies of interest). Over this period, the areas encompassed at the sea surface by the 98^{th} percentiles for the existing 2°C and 3°C thermal plumes (for Sizewell B) extend to 16.7 km^2 and 9.4 km^2, respectively (whilst the equivalent plumes for Sizewell C, when considered alone, extend across 9.0 km^2 and 2.5 km^2, respectively). Incorporating the Sizewell C thermal plumes together with the Sizewell B plumes increases these areas to 36.9 km^2 for the 2°C uplift and 15.3 km^2 for the 3°C uplift. **Section 8.10 c i** (**Doc Ref 5.10**) provides details on the assessment of the interactions between common tern and the thermal plume.

For each of the two colonies, the TRO plume for Sizewell C encompasses 0.8% of the foraging range, which is equivalent

to the percentage overlap with the existing Sizewell B TRO plume. The bromoform plume encompasses 0.1% of the predicted foraging range of each colony, compared to 0.6% for the existing Sizewell B bromoform plume, whilst the hydrazine plume for Sizewell C encompasses of 0.6% of each foraging range for the chronic PNEC values and 0.1% for the acute PNEC values. The chemical discharges from Sizewell C will affect only a small proportion of the available foraging range for common terns from the Orfordness and Minsmere colonies).

The assessment concludes no adverse effect on the Outer Thames Estuary SPA common tern population is predicted as a consequence of thermal and chemical discharges (**section 8.10 c i**) (**Doc Ref 5.10**).

f. Disturbance effects on species populations: Disturbance from the construction and decommissioning activities which would occur in the marine environment may affect the Outer Thames Estuary SPA population of non-breeding red-throated diver. This could be either directly via increased vessel traffic or indirectly via the effects of underwater noise on their fish prey species. In relation to vessel traffic during the construction period (and as assumed for decommissioning), most of the deliveries to the BLF would occur between 31st March and 31st October. Thus, the main period of increased vessel activity would have little overlap with the period of the year in which red-throated divers are present within the SPA, with April being the only month when the main period of BLF deliveries may coincide with a relatively high abundance of red-throated diver within the waters around Sizewell. In relation to indirect effects, the different potential sources of underwater noise disturbance during construction (and as assumed for decommissioning) and the extent of their effects on the fish prey of red-throated divers are detailed as for Minsmere-Walberswick SPA. Given the above, no adverse effect on the integrity of the Outer Thames Estuary SPA red-throated diver population is predicted as a consequence of noise and visual disturbance during construction and decommissioning (**section 8.10 d ii**) (**Doc Ref 5.10**).

g. Disturbance effects on species populations: Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The levels of underwater noise predicted to be generated with Sizewell C and Sizewell B operational, are not expected to differ markedly from current baseline levels. No adverse effect on the integrity of the SPA red-throated diver population is predicted (**section 8.10 d ii**) (**Doc Ref 5.10**).

h. Disturbance effects on species populations: Of the little tern breeding colonies which contribute to the Outer Thames Estuary SPA little tern population, only those in (or close to) the Minsmere-Walberswick SPA have the potential to be affected by noise and visual disturbance from the construction, operation and decommissioning of the main development site. Currently, these colonies comprise a small proportion of the overall little tern population for which the Outer Thames Estuary SPA provides supporting habitat. The assessment undertaken for the Minsmere-Walberswick SPA

little terns applies here; therefore, no adverse effect on the integrity of the Outer Thames Estuary SPA little tern population is predicted (**section 8.10 b ii**) (**Doc Ref 5.10**).

i. **Disturbance effects on species populations:** Disturbance from construction and decommissioning activities could affect birds foraging in the marine environment either directly via increased vessel traffic or indirectly via the effects of underwater noise on their fish prey species. Predicted effects would represent small changes relative to the existing situation (in terms of vessel traffic) or would produce effects which extend over relatively small parts of the common tern foraging ranges. Consequently, no adverse effect on the integrity of the Outer Thames Estuary SPA common tern population is predicted (**section 8.10 c ii**) (**Doc Ref 5.10**).

j. **Disturbance effects on species populations:** Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The levels of underwater noise predicted to be generated with Sizewell C and Sizewell B are not expected to differ markedly from current baseline levels resulting from the operation of Sizewell B alone. Therefore, no adverse effect on the integrity of the SPA common tern population is predicted (**section 8.10 c ii**) (**Doc Ref 5.10**).

k. **Physical interaction between species and project infrastructure:** Populations of the fish prey of red-throated divers may be affected by impingement and entrainment within the cooling water intake, leading to potential indirect impacts on the SPA population. **Section 8.10 d iii** (**Doc Ref 5.10**) provides a detailed explanation of the impingement and entrainment assessment of red-throated diver prey. The conclusions of the assessment are that the impingement and entrainment of fish by the cooling water system during the operation of Sizewell C is not predicted to result in the depletion of prey resources for red-throated divers in the Outer Thames Estuary SPA during the non-breeding season. Therefore, no adverse effect on the integrity of the SPA population is predicted as a consequence of physical interaction with project infrastructure (**section 8.10 d iii**) (**Doc Ref 5.10**).

l. **Physical interaction between species and project infrastructure:** The potential effects of impingement and entrainment of prey populations on the foraging habitats of little terns during operation are assessed for each of these breeding colony SPAs in the Minsmere-Walberswick SPA assessment. For each of these SPA populations, no adverse effect on integrity is predicted as a consequence of physical interaction with project infrastructure during operation. It follows, therefore, that no adverse effect on the integrity of the Outer Thames Estuary SPA little tern population is predicted (**section 8.10 b iii**) (**Doc Ref 5.10**).

m. **Physical interaction between species and project infrastructure:** During the operation of Sizewell C, populations of the fish prey of common terns may be affected by impingement and entrainment within the cooling water intake, leading

to potential indirect impacts on the SPA population. **Section 8.10 c iii** (**Doc Ref 5.10**) provides the detailed assessment of the impingement and entrainment of common tern fish prey. The assessment concludes that the impingement and entrainment of fish by the cooling water system during the operation of Sizewell C is not predicted to result in depletion of prey resources for common terns within the Outer Thames Estuary SPA. Therefore, no adverse effect on the integrity of the SPA population is predicted as a consequence of physical interaction with project infrastructure (**section 8.10 c iii**) (**Doc Ref 5.10**).

n. **In-combination effects:** The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented in **Table 8.29** to **Table 8.30** (**Doc Ref 5.10**). It is concluded that the Sizewell C Project would not result in adverse effects on the integrity of the Outer Thames Estuary SPA in-combination with other plans and projects (**section 8.10 f**) (**Doc Ref 5.10**).

HRA Integrity Matrix D2.5: Sandlings SPA

Name of European site and designation: Sandlings SPA															
EU Code: UK9020286															
Distance to NSIP: 1.6 km															
European site features	**Adverse effect on integrity**														
Effect	Changes in air quality			Direct habitat loss and fragmentation			Disturbance effects on species populations			Disturbance due to increase in recreational pressure			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Nightjar** *Caprimulgus europaeus*	× **a**	× **b**	× **a**	× **c**	× **c**	× **c**	× **d**	× **e**	× **d**	× **f**	× **g**	× **f**	× **h**	× **h**	× **h**
Breeding **Woodlark** *Lullula arborea*	× **a**	× **b**	× **a**	× **c**	× **c**	× **c**	× **d**	× **e**	× **d**	× **f**	× **g**	× **f**	× **h**	× **h**	× **h**

a. Changes in air quality: During construction, changes in air quality could result from the generation of dust from construction works. However, the Sandlings SPA falls beyond the study area for the assessment of dust emissions. With respect to construction phase traffic effects, no significant effect on habitats is predicted because background levels of nutrient and acid deposition already exceed the Critical Load. No adverse effect on the integrity of the Sandlings SPA is predicted (**section 8.11 b i** and **section 8.11 c i**) (**Doc Ref 5.10**).

b. Changes in air quality: Modelling of combustion scenarios indicates that only the daily NOx at the Sandlings SPA exceeded 1% of long-term impacts and 10% of short-term impacts. Although the PC exceeds 10% of the Critical Level for daily NOx at the Sandlings SPA, the PEC is predicted to be 40% of the Critical Level (i.e. the Critical Level would not be exceeded). Therefore, no adverse effect on the integrity of the Sandlings SPA is predicted (**section 8.11 b i** and **section 8.11 c i**) (**Doc Ref 5.10**).

c. **Direct habitat loss and fragmentation:** The baseline surveys provided no evidence of breeding nightjar or woodlark within or close to the areas encompassed by the main development site. Therefore, no adverse effect on the integrity of the nightjar and woodlark populations is predicted (**section 8.11 b ii** and **section 8.11 c ii**) (**Doc Ref 5.10**).

d. **Disturbance effects on species populations:** The bulk of the Sandlings SPA (and hence of the breeding nightjar and woodlark habitat within the SPA) is over 9 km from the main development site, and well beyond the distance at which effects of noise and visual disturbance associated with the construction of the main development site could occur. No adverse effect on the integrity of the SPA breeding nightjar and woodlark population is predicted (**section 8.11 b iii** and **section 8.11 c iii**) (**Doc Ref 5.10**).

e. **Disturbance effects on species populations:** Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. The artificial lighting associated with the operational period would not extend into any areas that are known to be used by breeding nightjar and woodlark. Therefore, no adverse effect on the integrity of the SPA breeding nightjar and woodlark population is predicted (**section 8.11 b iii** and **section 8.11 c iii**) (**Doc Ref 5.10**).

f. **Disturbance due to increase in recreational pressure:** During the construction and decommissioning of the main development site, recreational users of the Sizewell C area may be displaced elsewhere, including to locations within and close to nearby European sites, and the construction workforce may also use European sites for recreation. The SPA qualifying species, breeding nightjar and woodlark, are both susceptible to recreational disturbance of the open heathland habitats that they occupy. A study of the effects of recreational access on both species within the Sandlings SPA, found that densities were highest in areas with lowest visitor numbers, but there was no significant relationship between increasing visitor numbers and density. Based on a detailed review of access locations to the SPA, it was considered that at all but two locations, there is the capacity for the SPA to absorb increased visitor numbers without adverse effects on breeding populations of nightjar and woodlark. The exceptions were Aldringham Walks and North Warren, in the northern part of the SPA closest to the main development site. At these two locations it is proposed that existing access management arrangements are enhanced to minimise the potential for any increase in disturbance pressure. Subject to these measures, which would form part of the Rights of Way and Access Strategy for Sizewell C, no adverse effect on integrity are predicted on the breeding nightjar and woodlark populations of the SPA (**section 8.11 b iv** and **section 8.11 c iv**) (**Doc Ref 5.10**).

g. **Disturbance due to increase in recreational pressure:** If the changes in visitor use predicted during construction continue into the operational phase, then similar potential effects on breeding nightjar and woodlark would be predicted during this phase (although in this context it is noted that the size of the workforce would be less during operation than

construction). On a precautionary basis, it is considered that the proposed enhancement to existing arrangements to manage recreational access at Aldringham Walks and North Warren (as part of the Rights of Way and Access Strategy) should continue during the operational phase of Sizewell C. Subject to these measures, no adverse effect on the integrity of the breeding nightjar and woodlark populations of the SPA is predicted (**section 8.11 b iv** and **section 8.11 c iv**) (**Doc Ref 5.10**).

h. **In-combination effects:** The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented in **Table 8.32** and **Table 8.33** (**Doc Ref 5.10**). It is concluded that the Sizewell C Project would not result in adverse effects on the integrity of the Sandlings SPA in-combination with other plans and projects (**section 8.11 e**) (**Doc Ref 5.10**).

HRA Integrity Matrix D2.6: Stour and Orwell Estuaries SPA

Name of European site and designation: Stour and Orwell Estuaries SPA						
EU Code: UK9009121						
Distance to NSIP: 33.7 km						
European site features	**Adverse effect on integrity**					
Effect	Disturbance effects on species populations			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
Breeding **Avocet** *Recurvirostra avosetta*	× **a**	× **a**	× **a**			
Winter **Pintail** *Anas acuta*	× **a**	× **a**	× **a**			
Winter **Dark-bellied Brent goose** *Branta bernicla*	× **a**	× **a**	× **a**			
Winter **Dunlin** *Calidris alpina alpina*	× **a**	× **a**	× **a**			
Winter **Knot** *Calidris alpina alpina*	× **a**	× **a**	× **a**			
Winter **Black-tailed**	× **a**	× **a**	× **a**			

Godwit *Limosa limosa islandica*						
Winter **Grey Plover** *Pluvialis squatarola*	**×a**	**×a**	**×a**			
Winter **Redshank** *Tringa totanus*	**×a**	**×a**	**×a**			
Assemblage qualification: A wetland of international importance	**×a**	**×a**	**×a**			
Assemblage qualification: Waterbird assemblage	**×a**	**×a**	**×a**			

a. Disturbance effects on species populations: The construction and decommissioning of the Freight Management Facility site (expected to last for approximately 12 to 18 months during construction, with this assumed to be a worst-case for decommissioning) would be sources of noise and visual disturbance, but the distance of the site from the Stour and Orwell Estuaries SPA means that any effects of such disturbance on the SPA qualifying features are highly unlikely. The increase in vehicle movement is considered to be of little consequence in terms of disturbance to the SPA qualifying features when compared to existing vehicle movements of the A14 trunk road. During the operational phase of the Freight Management Facility (expected to be 10 years), the estimated HGV activity, within the context of existing vehicle movements on the A14 and in conjunction with the considerable distance from the SPA, is also considered highly unlikely to result in any increase in disturbance effects on the SPA qualifying features. Given this, no adverse effect on the integrity of the SPA is predicted as a consequence of noise and visual disturbance from construction, operation and decommissioning of the Freight Management Facility (**section 8.12 b i**) (**Doc Ref 5.10**).

Habitats Regulations Assessment

Appendix D3: Planning Inspectorate HRA Integrity Matrices for Ramsar sites

STAGE 2: EFFECTS ON INTEGRITY

Likely significant effects have been identified for the following sites:

- Alde-Ore Estuary Ramsar site.
- Deben Estuary Ramsar site.
- Minsmere-Walberswick Ramsar site.
- Stour and Orwell Estuaries Ramsar site.

These sites have been subject to further assessment in order to establish if the nationally significant infrastructure project (NSIP) could have an adverse effect on their integrity. Evidence for the conclusions reached on integrity is detailed within the footnotes to the matrices below.

Matrix Key

✓ **=** Adverse effect on integrity **cannot** be excluded
× **=** Adverse effect on integrity **can** be excluded

C = construction
O = operation
D = decommissioning

Where effects are not relevant to a particular feature the matrix cell has been formatted as follows:



HRA Integrity Matrix D3.1: Alde-Ore Estuary Ramsar Site

Name of European site and designation: Alde-Ore Estuary Ramsar site																								
EU Code: UK11002																								
Distance to NSIP: 6.5km																								
European site features	**Adverse effect on integrity**																							
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environment			Water quality effects – terrestrial environment			Alteration of local hydrology and hydro-geology			Changes in air quality			Disturbance due to increase in recreational pressure			Physical interaction between species and project infrastructure			In-Combination		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 2 Nationally-scarce plant species and British Red Data Book invertebrates	x **a**	x **a**	x **a**		x **b**		x **d**		x **d**	x **e**	x **e**	x **e**	x **f**	x **g**	x **f**	x **h**	x **h**	x **h**				x **l**	x **l**	x **l**
Ramsar criterion 3 The site supports a notable assemblage of breeding and wintering wetland birds	x **a**	x **a**	x **a**		x **c**		x **d**		x **d**	x **e**	x **e**	x **e**	x **f**	x **g**	x **f**	x **i**	x **j**	x **i**		x **k**		x **l**	x **l**	x **l**
Ramsar criterion 6 Species/ populations occurring at levels of international importance	x **a**	x **a**	x **a**		x **c**		x **d**		x **d**	x **e**	x **e**	x **e**	x **f**	x **g**	x **f**	x **i**	x **j**	x **i**		x **k**		x **l**	x **l**	x **l**

a. **Alteration of coastal processes/sediment transport:** The Alde-Ore Estuary Ramsar site is situated approximately 6.5 kilometres (km) south of the main development site. At this distance, no effects are predicted on the coastal processes and sediment transport as a result of the construction, operation or decommissioning and, therefore, no changes in the extent of the qualifying habitat criterion (Ramsar criterion 2) (**section 7.4 c i**) (**Doc Ref 5.10**).

   Although the Ramsar qualifying criteria are different from those of the Alde-Ore Estuary Special Protection Area (SPA), there is considerable overlap in the species and populations covered by each designation. The qualifying species and populations occurring at levels of international importance are breeding lesser black-backed gull and wintering populations of avocet and redshank (Ramsar criterion 6), each of which are also qualifying features of the SPA. In terms of the notable assemblage of breeding and wintering wetland birds (Ramsar criterion 3), the SPA qualifying features also encompass many of the bird species listed on the Ramsar Information Sheet for the site. Thus, for these species, the assessment above for each effect pathway in relation to the Alde-Ore Estuary SPA, and the conclusion of no adverse effect on integrity, is also considered to apply to the Ramsar site (**section 8.4 b**, with further supporting evidence in **section 8.3** for this effect pathway, with **section 8.3 d i, 8.3 g i** and **8.3 h i** being relevant to the species and populations occurring at levels of international importance in the Ramsar site) (**Doc Ref 5.10**).

b. **Water quality effects – marine environment:** Marine and coastal habitats could be affected by changes in water quality during the operational phase due to discharge activities from the cooling water system, with respect to the thermal, chemical and moribund biota discharges. Hydrodynamic modelling has demonstrated that the extent of the Sizewell C thermal and chemical plumes do not intersect with the Ramsar site (**section 7.4 b ii** and **section 7.4 c i**) (**Doc Ref 5.10**). The waters off Sizewell C are well mixed vertically, facilitating reaeration at the surface, background dissolved oxygen levels are high, and the water exchange rate of the Greater Sizewell Bay is enough to limit the extent and duration of any oxygen reduction from the input loading of biological oxygen demand (BOD) from biomass discharged from the fish return system (i.e. dead fish). This is predicted to have a negligible effect on water quality (**section 7.4 b ii** and **section 7.4 c i**) (**Doc Ref 5.10**). It is, therefore, concluded that the operational phase of the Sizewell C Project would not have an adverse effect on the integrity of Ramsar criterion 2 of the Alde-Ore Estuary Ramsar site due to changes in marine water quality.

c. **Water quality effects – marine environment:** Although the Ramsar qualifying criteria are different from those of the Alde-Ore Estuary SPA, there is considerable overlap in the species and populations covered by each designation. The qualifying species and populations occurring at levels of international importance are breeding lesser black-backed gull and wintering populations of avocet and redshank (Ramsar criterion 6), each of which are also qualifying features of the SPA. In terms of the notable assemblage of breeding and wintering wetland birds (Ramsar criterion 3), the SPA qualifying features also encompass many of the bird species listed on the Ramsar Information Sheet for the site.

Thus, for these species, the assessment above for each impact pathway in relation to the Alde-Ore Estuary SPA, and the conclusion of no adverse effect on integrity also applies to the Ramsar site. Due to no, or very small, overlap between predicted foraging ranges and modelled plumes for chemical discharges, no adverse effect is predicted on any Ramsar qualifying bird species under Ramsar criterion 3 and/or Ramsar criterion 6 which forage in the marine environment. (**section 8.4 b**) (**Doc Ref 5.10**). Further supporting evidence is provided in **section 8.3 d ii** (**Doc Ref 5.10**) for lesser black-backed gull, which forages in the marine environment. When the predicted effect is assessed in the context of the forging range for lesser black-backed gull, no adverse effects on the Alde-Ore Estuary Ramsar site population of lesser black-backed gull is predicted.

d. Water quality effects – terrestrial environment: During screening it was identified that the construction of the Two Village Bypass could have significant effect on the River Alde. The construction of the crossing would be carried out in line with the **Code of Construction Practice (CoCP)** (Doc Ref. 8.11). The **CoCP** would be informed by relevant environmental legislative requirements and comply with current standards, construction and operational experience and the commitments of the environmental impact assessment process; securing mitigation measures that are not secured by any other means. Excavated materials generally would not be stored in areas of high flood risk to avoid sediment loss during flooding. This mitigation would ensure that there is no significant impact on the water quality of the River Alde associated with the construction of the bridge (see **section 7.4 c i,** supported by **section 7.4 b iii**) (**Doc Ref 5.10**). It is, therefore, concluded that the construction activities of the Sizewell C Project would not adversely affect the integrity of the Alde-Ore Estuary Ramsar site from changes to terrestrial water quality.

e. Alteration of local hydrology and hydrogeology: During screening it was identified that the construction and operation of the Two Village Bypass could have significant effect on the River Alde. A buffer distance of at least 10 metres (m) would be maintained during construction and operation of the crossing from the toe of the bank of the River Alde and adjoining ditches, where feasible, to protect the integrity of the banks as well as the associated ecological features. The design of the crossing is such that there would be no direct disturbance to the river (**section 7.4 b iv, section 7.4 c i** and **section 8.4 b**) (**Doc Ref 5.10**). It is, therefore, concluded that the construction activities of the Sizewell C Project would not have an adverse effect on the integrity of the Alde-Ore Estuary Ramsar site through changes to local hydrology and hydrogeology.

f. Changes in air quality: The study area for the assessment of dust impacts during construction is based on the criteria detailed in the Institute of Air Quality Management (IAQM) guidance. The IAQM guidance states that ecological receptors within 50m of potential dust sources, 50m of the routes used by construction vehicles on the public highway and within 500m of construction site access require assessment; beyond these distances, dust effects from construction activities can be expected to be negligible. Hence the Alde-Ore Estuary Ramsar site falls beyond the study area for the assessment of dust emissions and no further consideration of construction or decommissioning dust is necessary (**section 7.4 b v** and **section 7.4 c i**) (**Doc Ref 5.10**).

g. **Changes in air quality:** The modelling of the combustion scenarios reported in **Chapter 12** of **Volume 2** of the **Environmental Statement (ES)** (Doc Ref. 6.3) predicts that for NO_x (long-term) and NO_x (short-term), the Process Contribution (PC) would be 0.2% and 7% of the Critical Level respectively and, therefore, not significant. For SO_2 (long-term), the PC would be 0% of the Critical Level and, therefore, not significant. From this, it can be concluded that the Critical Level would not be exceeded for the qualifying features of the Alde-Ore Estuary Ramsar site. In addition, the Critical Load for nutrient nitrogen deposition would not be exceeded, with the PC predicted to be 0.03% of the Critical Load. On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of these qualifying features due to changes in air quality during the operational phase (**section 7.4 b v, section 7.4 c i** and **section 8.4 b**) (**Doc Ref 5.10**).

h. **Disturbance due to increase in recreational pressure:** Under Ramsar criterion 2, the habitat that may be affected by an increase in recreational pressure is vegetated shingle which supports a highly specialised flora. During the construction, operation and decommissioning of Sizewell C, increases in the predicted number of recreational users to locations that give access to this habitat within the Ramsar site are small in relation to the number of estimated visits that already take place per year. it is concluded that an increase in recreational pressure on the Alde-Ore Estuary Ramsar site would not lead to an adverse effect on the integrity on the vegetated shingle of the Alde-Ore Estuary Ramsar site (**section 7.4 c ii**) (**Doc Ref 5.10**).

i. **Disturbance due to increase in recreational pressure:** The Alde-Ore Estuary Ramsar site covers a large area with relatively few direct access points. Increases in predicted recreational visits to these access locations are predicted during the construction of Sizewell C, as a result of displacement of visitors from the Sizewell C area, and recreational use of this area by the construction workforce. The key estuarine habitats used by the Ramsar bird interests are remote from or inaccessible via the permissive footpath network; small predicted increases in visits to these would be unlikely to lead to any additional disturbance pressure that would have adverse ecological consequences. Access to coastal areas at Orfordness and Havergate Island is restricted and controlled by the National Trust and Royal Society for the Protection of Birds (RSPB) and no increase in recreational disturbance is predicted to arise. Thus, while there could an increase in the number of visits to some locations around the Ramsar site, the limited accessibility to habitats used by Ramsar bird species indicates that there would not be an adverse effect on-site integrity due to increased recreation disturbance (**section 8.4 b,** with **section 8.3 d vi, 8.3 g v** and **8.3 h v** being relevant to the species and populations occurring at levels of international importance in the Ramsar site) (**Doc Ref 5.10**).

j. **Disturbance due to an increase in recreational pressure:** There is the potential for any recreational response of people displaced by construction activity to be maintained through into the operational phase of Sizewell C. If this were to occur, displacement of recreational users from the Sizewell area to the access points for the Alde-Ore Estuary Ramsar site could continue. The operational workforce would also be likely to make recreational use of surrounding areas, although this would

be considerably smaller than the construction workforce. Any residual effects of visitor displacement from Sizewell C post-construction, and recreational use of the local area by operational workers, are predicted to be so small as to be undetectable in the context of the likely future drivers of trends in recreational use of the Suffolk Coast (population growth, initiatives to promote tourism and the increasing popularity of outdoor recreation) and the predicted numbers of annual visitor trips to the Suffolk Coast in the vicinity of the main development site. No adverse effect on integrity associated with increased recreational pressure is predicted on any Ramsar qualifying feature (**section 8.4 b section 8.4 b,** with **section 8.3 d vi, 8.3 g v** and **8.3 h v** being relevant to the species and populations occurring at levels of international importance in the Ramsar site) (**Doc Ref 5.10**).

k. Physical interaction between species and project infrastructure: During the operation of the Sizewell C Project, populations of the fish and invertebrate prey of Ramsar qualifying bird species under Ramsar criterion 3 and/or Ramsar criterion 6 which forage in marine environments may be affected by impingement and entrainment within the cooling water intake, leading to potential indirect impacts on the Ramsar site populations. Impingement and entrainment mortality is predicted to have a negligible effect on the local (International Council for the Exploration of the Seas region) Spawning Stock Biomass (SSB) populations of key prey species for Ramsar qualifying species of the Alde-Ore Estuary. Effects are likely to be so small as to be undetectable in the context of year to year variation in populations due to other environmental factors. Impingement and entrainment of fish and invertebrate prey is not, therefore, predicted to result in depletion of prey resources for Ramsar qualifying bird species which forage in the marine environment. No adverse effect on integrity is predicted (**section 8.4 b**, with **section 8.3 d vii** being relevant to the breeding lesser black-backed gull population of the Ramsar site) (**Doc Ref 5.10**).

l. In-combination effects: The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects is presented separately for each effect pathway. It is concluded that, with the adoption of the proposed mitigation measures (including those embedded into the design), the Sizewell C Project would not result in adverse effects on the integrity of the Alde-Ore Estuary Ramsar site in-combination with other plans and projects (**section 8.4 c**) (**Doc Ref 5.10**).

HRA Integrity Matrix D3.2: Deben Estuary Ramsar Site

Name of European site and designation: Deben Estuary Ramsar site						
EU Code: UK11017						
Distance to NSIP: 22.2 km						
European site features	**Adverse effect on integrity**					
Effect	Disturbance effects on species populations			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 6 Species/ populations occurring at levels of international importance: Dark-bellied brent goose *Branta bernicla*	x **a**	x **a**	x **a**	x **b**	x **b**	x **b**

a. Disturbance effects on species populations: The construction and decommissioning of the freight management facility site (expected to last for approximately 12 to 18 months during construction, with this assumed to be a worst-case for decommissioning) would be sources of noise and visual disturbance, but the distance of the site from the Deben Estuary Ramsar site means that any effects of such disturbance on the Ramsar qualifying feature is highly unlikely. The increase in vehicle movement is considered to be of little consequence in terms of disturbance to the Ramsar qualifying feature when compared to existing vehicle movements of the A14 trunk road.

During the operational phase of the freight management facility (expected to be 10 years), the estimated heavy goods vehicle (HGV) activity, within the context of existing vehicle movements on the A14 and in conjunction with the considerable distance of the site from the Ramsar site, is also considered highly unlikely to result in any increase in

disturbance effects on the Ramsar qualifying feature. Given this, no adverse effect on the integrity of the Ramsar site is predicted as a consequence of noise and visual disturbance from construction, operation and decommissioning of the freight management facility (**section 8.7 b**) (**Doc Ref 5.10**).

b. In combination effects: The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects concluded that the Sizewell C Project would not result in an adverse effect on the integrity of the Deben Estuary Ramsar site in-combination with other plans and projects (**section 8.7 c**) (**Doc Ref 5.10**).

HRA Integrity Matrix D3.3: Minsmere-Walberswick Ramsar site

Name of European site and designation: Minsmere to Walberswick Ramsar site

EU Code: UK11044

Distance to NSIP: Adjacent

European site features	**Adverse effect on integrity**																													
Effect	Alteration of coastal processes / sediment transport			Water quality effects – marine environ-ment			Water quality effects – terrestrial environ-ment			Alteration of local hydrology and hydro-geology			Changes in air quality			Direct habitat loss and direct/ indirect habitat fragmen-tation			Disturb-ance effects on species populations			Disturb-ance due to increase in recreation-al pressure			Physical interaction between species and project infrastruc-ture			*In combina-tion effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 1 Mosaic of marine, freshwater, marshland and associated habitats	x **a**	x **a**	x **a**	x **b**	x **c**	x **b**	x **f**	x **g**	x **f**	x **h**	x **h**	x **h**	x **i**	x **i**	x **i**							x **m**	x **m**	x **m**				x **p**	x **p**	x **p**
Ramsar criterion 2 Supports nine nationally scarce plants and at least 26 red data book invertebrates	x **a**	x **a**	x **a**	x **b**		x **b**	x **f**	x **g**	x **f**	x **h**	x **h**	x **h**	x **i**	x **i**	x **i**							x **m**	x **m**	x **m**				x **p**	x **p**	x **p**
Ramsar	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	✓	x	x	x	x	x	x	x	x	x	x	x

criterion 2 An important assemblage of rare breeding birds associated with marshland and reedbeds	**a**	**a**	**a**	**d**	**e**	**d**	**f**	**g**	**f**	**h**	**h**	**h**	**i**	**i**	**i**	**j**	**j**	**j**	**k**	**l**	**k**	**n**	**n**	**n**	**o**	**o**	**o**	**p**	**p**	**p**

a. Alteration of coastal processes/sediment transport: Modelling results indicate that the construction of the main development site, including the construction discharge outfall, cooling water infrastructure, fish recovery and return system, beach landing facility (BLF) and flood defence and coastal protection measures would not significantly affect coastal processes. Any effects on sediment transport would be confined to coastline within 200m of the BLF in each direction, with no significant changes outside this area. This also applies to the ongoing operational phase effects. Consequently, no changes are predicted in the qualifying habitats under Ramsar criterion 1 or plant and invertebrate species under Ramsar criterion 2. Therefore, no adverse effect on the integrity of these criteria of the Minsmere-Walberswick Ramsar site is predicted (**section 7.8 b i**) (**Doc Ref 5.10**).

Although the Ramsar qualifying criteria are different from those of the Minsmere-Walberswick SPA, there is considerable overlap in the species and populations covered by each designation. The following species are included as part of the important assemblage of rare breeding birds associated with marshland and reedbeds: bittern, gadwall, teal, shoveler, marsh harrier, avocet and bearded tit. With the exception of bearded tit, all of these species populations are identified as qualifying features of the Minsmere-Walberswick SPA. In addition, other breeding species which may be associated with marshland and reedbeds will also contribute to the assemblage, e.g. little tern, black-headed gull and Mediterranean gull. Thus, for these species, the assessment above for each effect pathway in relation to the Alde-Ore Estuary SPA, and the conclusion of no adverse effect on integrity, is also considered to apply to the Ramsar site (**section 8.9 b**, with further supporting evidence in **section 8.3** for this effect pathway) (**Doc Ref 5.10**).

b. Water quality effects – marine environment: The assessment considered the potential for water quality effects due to construction phase discharges, during dredging and disposal activities (with construction considered as a worst-case proxy for decommissioning) and during cold-flush testing of various plant systems at commissioning. No adverse effect on integrity is predicted on the qualifying habitats under Ramsar criterion 1 or supporting habitats of the qualifying plant or invertebrate features under Ramsar criterion 2 (**section 7.8 b ii)** (**Doc Ref 5.10**).

c. **Water quality effects – marine environment:** Marine and coastal habitats could be affected by changes in water quality during the operational phase due to discharge activities from the cooling water system, with respect to the thermal, chemical and moribund biota discharges. The majority of the Ramsar habitats are located above mean high water spring and therefore the level of interaction with thermal and chemical discharge plumes would be small. Seawater is thought to enter the Minsmere coastal lagoon by slow diffusion through the dune system between the lagoon and the coast. Any heat retained in the water from the thermal plume would dissipate as the seawater percolates through the sediment and an adverse effect on water quality within the lagoon from the thermal plume is not predicted (**section 7.8 b ii**) (**Doc Ref 5.10**).

   The waters off Sizewell C are well mixed vertically, facilitating reaeration at the surface, background dissolved oxygen levels are high, and the water exchange rate of the Greater Sizewell Bay is enough to limit the extent and duration of any oxygen reduction from the input loading of BOD from biomass discharged from the fish return system (i.e. dead fish). This is predicted to have a negligible effect on water quality (**section 7.8 b ii**) (**Doc Ref 5.10**).

   It is, therefore, concluded that the operational phase of the Sizewell C Project would not adversely affect the integrity of the marine and coastal habitats of the Minsmere-Walberswick Ramsar site from changes to marine water quality.

d. **Water quality effects – marine environment:** Discharges with the potential to have effects on the prey availability of Ramsar bird qualifying features are restricted to increases in suspended sediment concentrations (SSC) and hydrazine (during commissioning). Based on the small extent of overlap of the foraging ranges with the zone predicted to be affected by changes in water quality, combined with the temporary and short-term duration of such effects, no adverse effect on integrity is predicted on the Ramsar criterion 2 assemblage of rare breeding birds as a consequence of construction (and decommissioning) related discharges (**section 8.9 b** and **section 8.8 b ii**) (**Doc Ref 5.10**).

e. **Water quality effects – marine environment:** Changes in marine water quality during operation, from thermal and chemical discharges from the cooling water system, could indirectly affect species of the Ramsar wetland bird assemblage which forage in marine environments via effects on prey. However, due to limited overlap between the predicted foraging ranges for these populations with the thermal plumes for the 2°C and 3°C uplifts and the chemical discharge plumes for total residual oxidants (TRO), bromoform or hydrazine, no adverse effect on the Ramsar criterion 2 assemblage of rare breeding birds is predicted as a consequence of operational phase discharges (**section 8.9 b** and **section 8.8 b ii**) (**Doc Ref 5.10**).

f. **Water quality effects – terrestrial environment:** There is potential for the construction and decommissioning phases to result in changes to water quality (surface water and groundwater) that could affect Ramsar criteria 1 and 2. For example, the range of plant species supported, and plant composition and distribution could be affected by a change in the

hydrological regime. However, mitigation measures such as the **Drainage Strategy** presented in **Appendix 2B** of **Volume 2** of the **ES** (**Doc Ref. 6.3**) are embedded in the design to manage surface water discharges and, therefore, it is concluded that there would not be an adverse effect on any Ramsar qualifying interests feature during the construction or decommissioning phases (**section 7.8 b iv, section 8.9 b)** (**Doc Ref 5.10**).

g. Water quality effects – terrestrial environment: The **Drainage Strategy** for the construction phase would also apply during the operational phase. With this mitigation in place it is concluded that there would not be an adverse effect on integrity of any Ramsar qualifying feature during the operational phase (**section 7.8 b iv, section 8.9 b)** (**Doc Ref 5.10**).

h. Alteration of local hydrology and hydrogeology: The construction, operation and decommissioning phases have the potential to result in changes to the hydrological conditions of the SPA which may, in turn, affect the extent of wetland habitats as well as the distribution and composition of associated plant species and communities on which the bird qualifying interest features depend. The Minsmere Sluice is the main control structure governing the flow and water level regimes of the Minsmere New Cut, Leiston Drain and Scott's Hall Drains. There is the theoretical possibility that if the flows within the Leiston Drain are increased as a result of construction to the south, this could cause excessive back flooding of the Scott's Hall Drain. This back flooding could then result in increased inundation of habitats within part of the SPA site, preventing control of water levels. Primary mitigation measures are embedded in the design to manage surface water discharges, flows and levels. Consequently, no adverse effect on integrity is predicted as a result of alteration of local hydrology and hydrogeology.

For groundwater, modelling predicts drawdown of less than 10 centimetres for a very localised part of the Ramsar site (0.03% by area), just to the north of the main platform. The modelling study predicts that the effect of drawdown of groundwater would be short-term and reversible and, therefore, it is unlikely that there would be any lasting effect on the habitats or species of the Ramsar site. In addition, the habitats present in this part of the Ramsar site are not considered sensitive to changes in groundwater level. No effect is predicted beyond the construction phase.

It is concluded that there would be no adverse effect on the integrity of Ramsar criteria 1 and 2 (habitats, invertebrates and birds) (**section 7.8 b iii** and **section 8.9 b**) (**Doc Ref 5.10**).

i. Changes in air quality: During construction and decommissioning, changes in air quality could result from the generation of dust from construction works and emissions from the campus, construction plant, other vehicles and generators to power equipment. The air quality assessment predicts that the extent of any dust-related effect is likely to occur over a relatively small area, with deposition likely to occur close (10s of metres) from the point of origin. Dust generation would likely continue for the duration of the construction phase, but the impacts of dust are likely to be reversible. The primary

mitigation measure proposed is the development of a dust management plan outlining a range of measures that would ensure dust generation is kept to a minimum (and within the threshold limits of 0.5 g/m^2/day).

Transport-related emissions have the potential to affect habitats. However, the background levels of nutrient and acid deposition already exceed the Critical Load within the Ramsar site and given background rates of high chronic deposition, the PCs are unlikely to result in significant changes in species composition or habitat condition. It is concluded that there would not be an adverse effect on the integrity of Ramsar criterion 1 and 2 (**section 7.8 b v** and **section 8.9 b**) (**Doc Ref 5.10**).

The predicted PC and PEC during operation are assessed in the context of the Critical Levels for air emissions and Critical Loads for nutrient nitrogen and acid deposition. On the basis of these predictions, it is concluded that there would not be an adverse effect on the integrity of the Ramsar criterion due to changes in air quality during the operational phase (**section 7.8 b v** and **section 8.9 b**) (**Doc Ref 5.10**).

j. Direct habitat loss and fragmentation: The construction phase would lead to the loss of 7.03 hectares of the Sizewell Marshes Site of Special Scientific Interest. Although outside the Ramsar site boundary, this area may be used by some bird species which form part of the assemblage of rare bird species associated with marshland and reedbed (Criterion 2). Distributional data for key bird species suggests that the areas of habitat which would be lost are not of disproportionate importance to rare breeding birds relative to other parts of the Sizewell Marshes. No adverse effect on the integrity of the assemblage of rare wetland bird species of the Minsmere-Walberswick Ramsar site is predicted as a consequence of habitat loss and fragmentation during construction, operation and decommissioning (**section 8.9 b**) (**Doc Ref 5.10**).

k. Disturbance effects on species populations: Noise disturbance during construction (and decommissioning) was assessed against modelled daytime noise levels that could arise during different phases of the construction period for Sizewell C. Likely noise thresholds at which a potentially adverse behavioural response could be initiated for wintering waterbirds were taken as 70 decibel (dB) L_{Amax}, with a value of 65dB L_{Amax} assumed for breeding waterbirds. These thresholds are based on an evidence base of observational and experimental work in respect of impulsive noise and the response of waterbirds to these noise sources and levels, reviewed in **section 8.8 b iv** (**Doc Ref 5.10**).

A potential visual impact zone of 300m, reducing to 150m where woodland or other habitat features are considered to provide sufficient cover to screen construction activities has been adopted. Effects of noise and visual disturbance were predicted to extend across only a small part (the south-eastern extremity) of the Minsmere-Walberswick Ramsar site. Noise and visual disturbance zones overlap more extensively with the Minsmere South Levels and Sizewell Marshes, which also provide potentially suitable habitat for the Ramsar criterion 2 bird assemblage (which is outside, but close to the Ramsar site) and may be functionally linked. The assessment considered the potential overlap between areas of suitable habitat and

noise and visual disturbance zones, within the Minsmere-Walberswick Ramsar site and the Minsmere South Levels and Sizewell Marshes. For species of the Ramsar criterion 2 assemblage foraging in the marine environment, the potential for direct disturbance from vessels etc, as well as indirect disturbance (underwater noise) via prey was also considered.

For all Ramsar assemblage bird species except marsh harrier, the assessment concludes no adverse effect on integrity of the Ramsar site population due to noise and visual disturbance during construction and decommissioning (**section 8.9 b** supported by evidence in **section 8.8**) (**Doc Ref 5.10**).

Disturbance effects on the breeding marsh harrier population may arise via visual and acoustic stimuli associated with the construction and decommissioning of the Sizewell C Project. Such stimuli could affect this population as a result of disturbance to nesting or foraging birds, resulting in a range of possible consequences with the potential to cause adverse effects. The assessment identified that an adverse effect on breeding marsh harrier cannot be excluded as a consequence of the construction activities of the Sizewell C Project through the displacement of birds from foraging habitats (**section 8.9 b**, supported by evidence in **section 8.8 d v**) (**Doc Ref 5.10**). An adverse effect on integrity is not predicted to arise during the decommissioning phase (**section 8.9c**) (**Doc Ref 5.10**).

l. **Disturbance effects on species populations:** Noise and visual disturbance during operation of the Sizewell C Project are unlikely to differ substantially from the existing situation, except in relation to artificial lighting. However, no adverse effect on the integrity of the Ramsar qualifying bird assemblage during the operational phase is predicted (**section 8.9 b** supported by evidence in **section 8.8**) (**Doc Ref 5.10**).

m. **Disturbance due to increase in recreational pressure:** There is the potential for an increase in visitor numbers or changes in patterns of use of recreational areas to occur due to the construction/ decommissioning workers and works associated with the Sizewell C Project. Mitigation measures have been established to minimise the requirement for both construction workers and existing recreational users from Sizewell to access the Ramsar site for recreation. The **Rights of Way and Access Strategy** for the EDF Energy Estate presented in **Appendix 15I** of **Volume 2** of the **ES** would be developed to minimise the displacement of people away from the Sizewell C area and to nearby European sites to minimise trampling of vegetation. In addition, the strategy outlines a monitoring programme for recreational displacement to identify local mitigation measures, to be agreed with local land managers, which could be introduced to further reduce recreational disturbance (**section 7.8 b vi**) (**Doc Ref 5.10**).

Therefore, it is concluded that an adverse effect would not arise from an increase in recreational pressure on the qualifying features of the Minsmere-Walberswick Ramsar site.

n. **Disturbance due to increase in recreational pressure:** Increases in predicted recreational visits to locations which give access to the Minsmere-Walberswick Ramsar site are predicted during the construction of the Sizewell C Project as a result of displacement of visitors from the Sizewell C area (estimated from visitor surveys), and recreational use of this area by the construction workforce (estimated based on the predicted profile and behaviour of the workforce). These increases may persist into the operational period, although it is noted that the contribution of the operational workforce to this would be less than during construction, because of the smaller size of the operational workforce.

   The largest potential increase during construction (and by proxy, decommissioning) is predicted for the Minsmere-Eastbridge area in the southern part of the Ramsar site. It is considered likely that a large proportion of those who said they would relocate to Minsmere, particularly if local to the Sizewell area, would relocate to sites on the periphery of the RSPB Minsmere Reserve (Minsmere Outer, access point O) rather than the main reserve itself, as such locations would provide access to the local footpath network without having to access the main reserve (where access is controlled and dogs are not allowed except for the visitor centre).

   Given restrictions on access to areas of wetland habitat at Minsmere that support Ramsar wetland bird species (mainly within the RSPB reserve), the risk of any additional disturbance pressure being exerted on these populations in the Minsmere area is therefore considered to be highly unlikely.

   At Walberswick, the predicted small number of additional visitors to the area, suggests that an increase in disturbance pressure on wetland birds is unlikely to arise. Wetland areas are predominantly within areas managed as nature reserves by Natural England, RSPB and Suffolk Wildlife Trust, where access is restricted to paths and viewing facilities.

   Management measures are currently in place to reduce the risk of recreational disturbance for breeding little terns using coastal shingle habitats throughout the Ramsar site and are expected to continue.

   Assuming, as a worst case, that the changes in visitor use predicted during construction continue into the operational phase, then, subject to the **Rights of Way and Access Strategy**, no adverse effect on integrity is predicted during the operational phase (**section 8.9 b** supported by evidence in **section 8.8 b v**) (**Doc Ref 5.10**).

o. **Physical interaction between species and project infrastructure:** During the operation of the Sizewell C Project, populations of the fish and invertebrate prey of Ramsar qualifying bird species which forage in marine environments may be affected by impingement and entrainment within the cooling water intake, leading to potential indirect impacts on the Ramsar bird population. Based on modelling of predicted losses, impingement and entrainment of prey is not predicted to result in depletion of prey resources for Ramsar bird species, and an adverse effect on integrity is not predicted (**section 8.9 b**) (**Doc Ref 5.10**).

p. In-combination effects: The assessment of potential for adverse effects on integrity as a result of in-combination effects with other plans and projects concludes that, with the adoption of the proposed mitigation measures (including those embedded into the design), the Sizewell C Project would not result in adverse in-combination effects on the integrity of the Minsmere-Walberswick Ramsar site (**section 8.9 d**) (**Doc Ref 5.10**).

HRA Integrity Matrix D3.4: Stour and Orwell Estuaries Ramsar Site

Name of European site and designation: Stour and Orwell Estuaries Ramsar Site						
EU Code: UK11067						
Distance to NSIP: 33.7km						
European site features	**Adverse effect on integrity**					
Effect	Disturbance effects on species populations			In-combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 5 Assemblages of international importance: waterfowl	x **a**	x **a**	x **a**			
Ramsar criterion 6 Species/ populations occurring at levels of international importance	x **a**	x **a**	x **a**			

a. Disturbance effects on species populations: The construction and decommissioning of the freight management facility site (expected to last for approximately 12 to 18 months during construction, with this assumed to be a worst-case for decommissioning) would be sources of noise and visual disturbance, but the distance of the site from the Stour and Orwell Estuaries Ramsar site means that any effects of such disturbance on the Ramsar qualifying features are highly unlikely. The increase in vehicle movement is considered to be of little consequence in terms of disturbance to the

Ramsar qualifying features when compared to existing vehicle movements of the A14 trunk road. During the operational phase of the freight management facility (expected to be 10 years), the estimated HGV activity, within the context of existing vehicle movements on the A14 and in conjunction with the considerable distance from the Ramsar site, is also considered highly unlikely to result in any increase in disturbance effects on the Ramsar qualifying features. Given this, no adverse effect on the integrity of the Ramsar site is predicted as a consequence of noise and visual disturbance from construction, operation and decommissioning of the freight management facility (**section 8.13 b**) (**Doc Ref 5.10**).

Appendix E: Recreational Disturbance Assessment

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None provided.

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Annexes

Annex A: Recreational Disturbance Evidence Base

1. Introduction and Objective of Assessment

1.1 Introduction

1.1.1. This report provides the evidence base for assessment of the potential impact of changes in the patterns of recreational activities during the construction and operation of the Sizewell C Project on designated interest features of European Sites (Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites).

1.1.2. The construction of SZC has the potential to lead to additional recreation use of European Sites due to:

- The potential displacement of existing users of informal outdoor recreational resources to European Sites, who wish to avoid the area around SZC due to the disturbance caused by construction activities including some linear access routes being temporarily closed or diverted; and
- people working on the construction of SZC who will be living or staying in the area, who may visit European Sites.

1.1.3. There may also be an effect of Sizewell C on recreational pressure on European sites during the operational phase:

- If any response by recreational users to construction continues into the operational phase; and
- due to potential recreational use of European sites by the operational workforce including temporary increases to the workforce by additional workers brought in during periods of planned outages

1.1.4. In particular, the focus of this assessment relates to potential increases in existing levels of disturbance on designated bird populations and trampling of sensitive habitat features that may arise through the displacement of existing recreational users in the Sizewell area and the influx of construction workers.

1.2 Study area

1.2.1. The study area for this assessment is based on the following three zones of potential influence around the Sizewell C Main Development Site as shown

on **Figure 001** and **Figure 002** (see Annex A for further details about the evidence base):

- Zone of Physical Change (defined by a 2 km buffer around the Main Development Site).

1.2.2. The potential effects on Public Rights of Way (PRoW), permissive paths and access are likely to occur within approximately 2 km of the Main Development Site defined as the Zone of Physical Change. This includes potential temporary PRoW closures and the location of diverted or newly created routes:

- Displacement Zone (defined by 8 km buffer around the Main Development Site).

1.2.3. Research and field-based questionnaires identified that the approximate median distance likely to be travelled by people to reach a location for recreational activities is 8 km. As such, this zone is judged to be the appropriate extent of the catchment area for visitors that have the potential to be displaced by changes to existing PRoW, permissive paths and access arrangements within the Main Development Site during the construction and operation of Sizewell C. The Displacement Zone captures a number of settlements which have been used to define the Buffer Zone (see below):

- Buffer Zone (defined by 8 km buffer around settlements within the Displacement Zone).

1.2.4. Potentially, a recreational user from a settlement who might have travelled up to 8 km towards Sizewell C to use a recreational resource may, as a result of displacement through changes to PRoW, permissive paths and access areas or perceptions, determine to travel to an alternative site up to 8 km away from Sizewell C.

1.2.5. The outer edge of the Buffer Zone defines the extent of the study area, which extends to between approximately 12 km and 17 km around the Sizewell C Main Development Site.

1.2.6. Whilst the study area has been rigorously tested and agreed, it was advised during consultee meetings in 2016 that there may be additional pressure at access points to the Benacre to Easton Bavents Lagoons SAC and Benacre to Easton Bavents SPA which lie outside the study area to the north. As such, Section 4 of this report examines the access arrangements to these sites.

1.3 Approach to assessment

1.3.1. To determine the potential effect that changed patterns of recreational use in the wider Sizewell area may have on the above interests, the following approach to assessment has been taken:

- review of the recreational use of the Sizewell and wider Suffolk Coast and Heaths area;
- identification of the likely changes in recreational use / pressure during construction and operation of Sizewell C;
- review and summary of the effects of recreational disturbance on relevant bird populations and potentially affected habitats;
- assessment of effects of changes in recreational pressure on relevant designated bird populations and habitats; and
- identification of potential measures to manage potentially adverse effects and monitoring of any measures that may be implemented to determine success.

1.4 European sites considered in this assessment

1.4.1. Based on the initial HRA Evidence Plan process and more recently the HRA Screening process for 'Likely Significant Effects (LSE)', the following European sites and their features were considered to be at risk of disturbance from potential increases in recreational pressure as a result of displacement of existing users and the presence of the workforce during construction:

- **Minsmere to Walberswick SPA and Ramsar** – breeding populations of avocet, little tern, bittern, shoveler, teal, marsh harrier, and nightjar. Wintering populations of shoveler, gadwall, white-fronted goose and hen harrier.
- **Minsmere to Walberswick Heaths and Marshes SAC** – coastal (annual vegetation of drift lines and perennial vegetation of stony banks) and heathland habitats.
- **Sandlings SPA** - breeding woodlark and nightjar populations.

- **Alde, Ore and Butley Estuaries SAC** – coastal habitat (estuaries, mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows).

- **Alde – Ore Estuary SPA and Ramsar** – breeding populations of avocet, lesser black-backed gull, marsh harrier, Sandwich tern and little tern. Wintering populations of avocet, ruff and redshank.

- **Orfordness SAC** – annual vegetation of drift lines and perennial vegetation of stony banks (vegetated shingle).

- **Benacre to Easton Bavents SPA** – breeding little tern, marsh harrier and bittern.

1.4.2. Subsequent to the production of the HRA Evidence Plan, the Sizewell C Visitor Surveys (described below) revealed that very few people indicated that they would potentially undertake recreational activity on Orfordness. In total, four people (0.78% of the survey sample) stated that they would consider Orford as an alternative location should they be displaced. Access to Orfordness is via boat / ferry from Orford and is managed by the National Trust. The numbers of people that can visit Orfordness is therefore effectively controlled. Once on the ness, visitors are restricted by the National Trust to specific areas in order to minimise disturbance to both shingle habitats and breeding / wintering bird populations.

1.4.3. Potentially, access to Orfordness can be gained via the beach at the southern end of Aldeburgh (Slaughden) where there is a large car park. This point was also made more recently during the consultation exercise for the Stage 1 LSE Screening assessment, where the Suffolk Wildlife Trust raised this as a potential concern. This would entail a long walk along the shingle bank / beach and access is dissuaded by the presence of a barrier to vehicles and signs stating that there is strictly no access (apart from sea anglers, who should keep to the beach) in order to prevent damage to the shingle vegetation.

1.4.4. Given these factors, the potential for the Sizewell C project to generate additional disturbance to habitat features of the Orfordness SAC is considered to be negligible. The Orfordness SAC has therefore been scoped out of further consideration in this assessment.

1.4.5. It should also be noted that potential disturbance of marine habitats used for foraging by the designated breeding populations of Sandwich tern, common tern and little tern (associated with several SPAs with connectivity to the

Development) will be covered through a separate assessment of Sizewell C project impacts on the Outer Thames Estuary SPA.

1.5 Overview of designated populations and habitats at potential risk

1.5.1. This section summarises baseline information on population trends and distribution of key bird species and habitats identified as potentially affected by changes in recreational disturbance. Further information is also available in Chapter 6 of the Shadow HRA Report (Doc Ref. 5.10), which is cross referenced below.

a) Breeding and wintering raptor and waterbird populations of the Minsmere to Walberswick SPA and Ramsar

1.5.2. This large composite coastal site contains a complex mosaic of habitats, notably areas of marsh with dykes, extensive reedbeds, mudflats, lagoons, shingle, woodland and areas of lowland heath. The reedbeds at Minsmere and Walberswick are of major importance for breeding bittern and marsh harrier.

1.5.3. The most recent estimate that has been found for the breeding bittern population of the SPA as a whole is 17.6 breeding pairs for the period 2011/12 – 2015/16 (Ref. 1.1); compared with 5 breeding pairs in 1991 at the time of classification. The species also occurs on the SPA overwinter.

1.5.4. For the Minsmere Reserve, RSPB data indicate an annual mean number of estimated pairs for the period 2011/12 - 2015/16 of 10.6 (RSPB *unpublished data*). During the period 2015 – 2019, the figure was 10.4, with 12 recorded between the period 2015 – 2017, and a subsequent decline in early 2018 (possibly due to cold weather) (RSPB, *unpublished data*). RSPB data for the period 2009-2013 suggest that all bittern nests / territories were located to the north of the Minsmere New Cut. RSPB counts between 2008/09 and 2013/14 recorded a maximum of four bittern on the Minsmere Reserve during winter months but this is presumably an underestimate of their actual wintering numbers, given they are not readily recorded in surveys at this time of year.

1.5.5. Other areas identified as strongholds for breeding bittern within the SPA are Hen Reedbed and Westwood Marshes (Ref. 1.1); and Dingle Marshes is also managed for breeding bitterns (Ref. 1.2). Wintering bittern (1-2 birds) may also make use of the reedbeds and wetland habitats within Sizewell Marshes, but there is little indication that the site supports breeding bittern (with a single breeding season record from 2011 to 2017 – Ref. 1.3).

1.5.6. Marsh harrier breed in the reedbeds at Minsmere, Walberswick and the Hen Valley (just to the north of the Blyth Estuary). Over the five year period 2014-2018, a mean of 16 breeding pairs was recorded within the SPA (excluding 2015 count as data was incomplete), with numbers varying between <9 – 31 pairs during the period 2004 -2018 (unpublished data from RSPB, SWT and Natural England, Shadow HRA Report (Doc Ref. 5.10), Table 6.6). The population at classification in 1991 was 15 females (Ref. 1.1)

1.5.7. Wintering hen harrier are present in small numbers throughout the SPA and typically make use of tall vegetation such as reedbed habitats for roosting, and open areas of grazing marsh, coastal wetlands and agricultural habitats for foraging.

1.5.8. Within the SPA most breeding avocet occur on the scrapes within the Minsmere RSPB Reserve; they are also present at Dingle Marshes and Tinkers Marshes within the Walberswick NNR. The most recent population estimate that has been found for the SPA population is 109 breeding pairs for the period 2011/12 to 2015/16, compared with 47 pairs at classification in 1991 (Ref. 1.1). Wintering avocet occur at Minsmere, Walberswick and the Blyth Estuary.

1.5.9. The majority of the SPA breeding populations of shoveler and gadwall (respectively 65 and 84 pairs, 2011/12 – 2015/16) are present at Minsmere, with 1-3 pairs of shoveler breeding annually at Dingle Marshes (Ref. 1.1). Currently, teal only breeds in small numbers (5-year mean peak count of one pair from 2011/12 – 2015/16; Ref. 1.1) at Minsmere and Dingle Marshes (having declined substantially from the SPA citation population of 73 pairs; Ref. 1.1).

1.5.10. SPA wintering populations of gadwall and shoveler are estimated at respectively 283 and 173 individuals for the period 2013/14 – 2016/17 (Shadow HRA Report (**Book 5, Report 5.10**), Table 6.5), well above the citation populations of 90 gadwall and 100 shoveler (Ref. 1.1). Within the SPA these species occur on the Minsmere RSPB reserve, the Walberswick NNR and the Blyth Estuary, and outside the SPA on the Minsmere South Levels and Sizewell Belts.

1.5.11. The most recent population estimate for White-fronted goose for the SPA is 16 individuals based on WeBS counts for 2012/13 – 2016/17 (Ref. 1.1). However, the wintering population is reported to roost nocturnally at Minsmere, arriving after dark and departing before dawn (RSPB *unpublished data),* so daytime counts may underestimate the importance of the site for this species.

1.5.12. The shingle beaches at Minsmere and Walberswick (Corporation Marshes and Dingle Marshes) occasionally support small numbers of breeding little tern, which feed substantially outside the SPA in adjacent marine waters. The 5-year mean peak count (2014 – 2018) in the SPA is 1.6 breeding pairs of little tern, primarily at Walberswick / Dingle (Ref. 1.1). There has been no successful breeding at the Minsmere colony since 2009 (when a single breeding pair was recorded - RSPB, unpublished data) until 2019, when 10 pairs bred on the scrape of the RSPB reserve (RSPB, *in litt*).

b) Coastal and heathland habitats of the Minsmere Heaths and Marshes SAC

1.5.13. This site is one of two representatives of annual vegetation of drift lines on the east coast of England. It occurs on a well-developed beach strandline of mixed sand and shingle and is the best and most extensive example of this restricted geographical type. This vegetation typically occurs around the high tide mark on the shingle ridge between Dunwich and Walberswick and also between Minsmere and Sizewell. Species include those typical of sandy shores, such as sea sandwort and shingle plants such as sea beet.

1.5.14. Lowland European dry heaths occupy an extensive area of the site, which is at the extreme easterly range of heath development in the UK. The heathland is predominantly NVC type H8 *Calluna vulgaris – Ulex gallii* heath, usually more characteristic of western parts of the UK. The main areas of heath vegetation are at Dunwich Heath, Westleton Heath, Westleton Walks and Walberswick. This heathland type is dominated by heather, western gorse and bell heather.

c) Breeding populations of nightjar and woodlark (Minsmere and Walberswick SPA and Sandlings SPA)

Populations of both nightjar and woodlark have increased in the UK in recent years (Ref. 1.4, Ref. 1.5). There have been however declines in the number of both species within the Suffolk Sandlings since the SPA was classified (Shadow HRA Report (**Book 5, Report 5.10**), Table 6.20; Ref. 1.6). For both species the major storm event in 1987, which felled most trees, resulted in unusually large areas of open habitat being made available in the large coniferous plantations at Rendlesham and Tunstall and bird numbers peaked at this time; subsequent population declines may reflect a decrease in the availability of such suitable habitat (Ref. 1.6).

1.5.15. Data on the abundance of breeding nightjar and woodlark are available from 2010 to 2018 for RSPB's North Warren and Aldringham Walks Reserve, the part of the Sandlings SPA closest to the Main Development Site. Over this period the number of nightjar territories on the Reserve increased from two

in 2010 to five in 2018 (with an average of 1.4 territories per year from 2010 to 2014 and of 2.6 from 2014 to 2018), whilst for woodlark they increased from three in 2010 to seven in 2018 (with an average of 4.6 territories per year from 2010 to 2014 and of 6.8 from 2014 to 2018) (*RSPB, unpublished data*).

1.5.16. The nightjar breeding population of the Minsmere-Walberswick SPA has declined by 45% since classification (Shadow HRA Report (**Book 5, Report 5.10**), Table 6.5). It is unclear what is driving the decline (Ref. 1.1). The main nesting areas for nightjar within the SPA are on the Minsmere RSPB reserve. Within Dunwich Forest, outside but adjacent to the SPA boundary, up to four pairs of nightjar occur within areas of open habitat managed by RSPB and SWT (*RSPB pers. comm.*). There are plans for Dunwich Forest to slowly revert to heath (Ref. 1.1).

d) Coastal habitats of the Alde, Ore and Butley Estuaries SAC

1.5.17. The estuary complex is made up of three rivers, the Alde, the Ore and Butley, and covers an area of 1,076 ha, 0.34% of the total area of estuaries in the UK (Ref. 1.7).

1.5.18. The upper Alde is relatively shallow and meanders through extensive intertidal mudflats, which stretch across 1.5 km between Iken marshes and Blackheath. Mixed salinity sandy mud dominates, with widespread bivalve communities. At the head of the Alde, the muddy substrate supports mainly estuarine communities dominated by polychaete worms. Subtidal sediments here are primarily muddy (Ref. 1.8). Saltmarsh is present along the length of the river channel and along the north shore at Blackheath and Little Japan. South of Aldeburgh, the River Alde becomes the River Ore. Here the channel narrows and deepens, creating stronger currents and narrower mudflats along the shores with subtidal sediments becoming mixed. Recent evidence has found aggregations of ross worm *Sabellaria spinulosa* on subtidal mixed sediment near Havergate Island (Ref. 1.8).

1.5.19. Butley Creek is smaller and contains extensive saltmarsh in the upper reaches and western shore of the river with reedbeds bordering the intertidal mudflats. It flows into the River Ore at Boyton Marshes. The River Ore splits to flow around Havergate Island, which is made up of important coastal lagoon and saltmarsh habitats (Ref. 1.9; Ref. 1.10).

1.5.20. At the time of designation, the area of mudflats and sandflats within the site was 6.25 km^2, which represented 0.2% of the UK's total extent of the feature (Ref. 1.7). A study carried out in 2014 showed the extent to have decreased to approximately 5.55 km^2 (Ref. 1.11).

1.5.21. The invertebrate communities of the mudflats and sandflats at the site are extremely diverse (Ref. 1.12). The bivalve Baltic tellin *Macoma balthica* and the polychaete fanworm *Manayunkia aestuarina* are especially abundant in the mudflats and sandflats of the Alde, where the mud shrimp *Corophium volutator* and mud snail *Peringia ulvae* are also frequently observed. Sandy substrates support high densities of blow lug worm *Arenicola marina* and the rare tentacled lagoon worm *Alkmaria romijni* has been found at Butley Creek, Sudbourne and near Stoney Ditch on Orford Ness. Fucoid seaweeds are also found scattered in narrow strips and on buried features throughout the flats.

1.5.22. The intertidal mixed sediment within the site is most prevalent on the banks of the Ore where it often occupies the full extent of intertidal area. Here the Alde, Butley and Ore systems meet, resulting in strong tidal scouring at all shore heights, restricting the settlement of finer sediments. Additional isolated patches of mixed sediment are also present along the lower shore of the Alde, where localised areas of tidal scour occur on otherwise sheltered banks, such as adjacent to Cobb Island.

1.5.23. Narrow fringes of saltmarsh occur along the length of the estuary with wider expanses at Shingle Street, Havergate Island, Stony Ditch, the upper reaches of the Butley river and in places by the Alde river. These are mostly dominated by sea purslane, *Halimione portulacoides* and sea lavender, *Limonium vulgare*, but a wide range of other saltmarsh species also occur including sea heath, *Frankenia laevis*, glasswort, *Salicornia pusilla* and small cord grass, *Spartina maritima*. Higher saltmarsh grading into neutral grassland, dominated by sea couch grass, *Elymus pungens*, occurs on Havergate Island and Orfordness and on the extensive system of clay embankments throughout the site.

e) Breeding and wintering bird populations of the Alde-Ore Estuary SPA and Ramsar

1.5.24. Within the SPA, recent nesting areas for avocet are at Havergate Island and Orfordness, including new habitat created within the former military airfield (Ref. 1.13; Ref. 1.14) and new intertidal habitat at Hazlewood Marshes SWT reserve (RSPB *unpublished*). The SPA population has declined since classification (Shadow HRA Report (**Book 5, Report 5.10**), Table 6.1). Breeding success has been poor since monitoring began in 1996 with few chicks surviving to fledge; attributed to predation by foxes and gulls (Ref. 1.15). Increases in lesser black-backed gull numbers at Havergate Island is likely to be linked to the decline of avocets at this site, and RSPB has created suitable breeding sites nearby (outside the SPA) at their Boyton and Hollesley Marshes Reserve (RSPB *unpublished*).

1.5.25. Historically, the primary breeding colony for lesser black-backed gulls in the SPA was on Lantern Marshes at Orfordness, whereas the main nesting areas are now on Havergate Island. The SPA breeding population has declined (Shadow HRA Report (**Book 5, Report 5.10**), Table 6.1), with contributory factors being predation by foxes and emigration of adults to other colonies after several consecutive years of breeding failure (Ref. 1.16).

1.5.26. The SPA is classified for breeding populations of little tern and Sandwich tern (Shadow HRA Report (**Book 5, Report 5.10**), Chapter 6), although it is no longer considered a regular breeding site for either species. For little tern, this has been attributed to a number of factors, including changes to the beach profile (and therefore habitat suitability), predation and disturbance. Declines in Sandwich terns may reflect movements of birds between breeding colonies in the wider region (Natural England, undated), perhaps in response to breeding failure.

1.5.27. Wintering populations of waterbirds which are qualifying features of the Alde-Ore Estuary SPA have generally increased since the time of classification (Shadow HRA Report (**Book 5, Report 5.10**), Table 6.1).

f) Bird populations of the Benacre to Easton Bavents SPA

1.5.28. Little terns regularly breed on the sand and shingle beaches at Benacre, Kessingland and Covehithe Broads, and the current five-year mean for the SPA (2014 – 2018) is 40 breeding pairs (Ref. 1.17). Little terns are generally active within the SPA between April and September.

1.5.29. Benacre to Easton Bavents SPA supports the third largest continuous stand of common reed in England and Wales, at Easton Marshes. The number of booming male bitterns has increased in the SPA since the site was designated, and an average of 4.4 breeding pairs was recorded between 2014 and 2018, up from two breeding pairs at the time of designation (Shadow HRA Report (**Book 5, Report 5.10**),Table 6.3; Ref. 1.17).

1.5.30. Breeding marsh harriers use Easton Marshes and surrounding grazing land for nesting and foraging.

2. Recreational Use of the Sizewell Area

2.1.1. Baseline information on recreational activity and users for the Suffolk coast and the Sizewell area and details of the recreational user surveys that have been undertaken for the SZC project are described in the Recreational Disturbance Evidence Base (Annex A).

2.1.2. The Recreational Disturbance Evidence Base includes:

- Background to the identification of the study area for recreational disturbance (summarised in Section 1.2 above).
- A desk-based review of existing visitor survey information produced since 2003 that is relevant to the Sizewell C Project.
- Methods, results and analysis/interpretation of visitor surveys carried out for the SZC project in 2014 and 2015. The 2014 surveys were carried out at seven access points in August and November 2014; and, at the request of RSPB, further surveys were undertaken at the Minsmere Reserve in August and November 2015.
- Visitor profiles for the study area, including the proportion of visitors accompanied by dogs.
- Analysis of existing access arrangements for European Sites within the Sizewell C study area and estimated annual visits to these access routes.
- Estimated additional recreational pressure on European sites during the construction of Sizewell C due to:
    - The displacement of recreational users from the vicinity of Sizewell C during construction, based on alternative locations identified by respondents to the 2014 visitor surveys; and
    - The likely recreational use of European sites by the construction workforce for Sizewell C (estimated at 7,900 workers on the mean development site at peak (2,016 'home-based' and 5,884 'non-home-based', plus 600 'home-based' workers at Associated Development Sites).
- The potential for additional recreational pressure on European Sites during the operation of Sizewell C due to:
    - Potential changes in the behaviour of recreational users during the 10-year construction period; and
    - the likely recreational use of European Sites by the permanent workforce for Sizewell C as well as temporary increases to this workforce during planned outages.

2.1.3. Estimated increases in visitor numbers to access locations for European Sites, based on 2014 visitor surveys, and predictions of the likely recreational

use of European Sites by construction workers, during the construction of Sizewell C, are summarised in Table 2.1. Two scenarios are shown. Predicted displacement from the visitor surveys is based on people's initial perceptions of the nature of the construction activities and its influence upon both their ability to continue to undertake their activities as well as the attractiveness of the surroundings in which to undertake their activities. Actual levels of displacement are likely to be lower once users have had a chance to experience the specific nature of the factors that they perceive could cause them potential disturbance Thus, even the displacement scenario that is considered more realistic may represent an over-estimate.

Table 2.1: Estimated additional visits to locations in the study area (two scenarios) as a result of displacement of existing users from the Sizewell area and the construction workforce.

Location and estimated number of annual visits	Access point(s) reference	% of survey visitors who gave as alternative location	Based on % of displaced visitors			Based on 500,000 visits to Sizewell area		
			Inc. visits / year	Inc. total visits / day	% inc. over existing visits	Inc. visits / year	Inc. total visits / day	% inc. over existing visits
Alde-Ore Estuary SPA								
Aldeburgh – 150,000	U,V,W	2.92%	9292	25.5	6.2	19,512	53.4	13
Butley – 10,000	DD	0.19%	19	0.05	0.2	950	2.6	9.5
Iken – 60,000	BB	0.58%	348	1.0	0.6	2900	7.9	4.8
Orford – 150,000	EE	0.78%	1170	3.2	0.8	3900	10.7	2.6
Sailors Path – 60,000	Y	0.39%	234	0.6	0.4	1950	5.3	3.2
Snape – 150,000	Z,AA	0.97%	1455	4.0	1.0	4850	13.3	3.2
Sandlings SPA								
Aldringham Walks – 60,000	S	0.58%	915	2.5	1.5	3467	9.5	5.8
North Warren – 60,000	X	0.58%	348	1.0	0.6	2900	7.9	4.8
Rendlesham – 150,000	FF	0.78%	1548	4.2	1.0	4278	11.7	2.9
Sandlings Walk – 150,000	R	0.58%	870	2.4	0.6	2900	7.9	1.9
Thorpeness – 60,000	T	3.89%	5168	14.2	8.6	22,284	61.1	37.1
Tunstall Forest – 150,000	CC	1.36%	2418	6.6	1.6	7178	19.7	4.8

Location and estimated number of annual visits	Access point(s) reference	% of survey visitors who gave as alternative location	Based on % of displaced visitors			Based on 500,000 visits to Sizewell area		
			Inc. visits / year	Inc. total visits / day	% inc. over existing visits	Inc. visits / year	Inc. total visits / day	% inc. over existing visits
Minsmere to Walberswick SPA / SAC								
Dunwich Heath – 175,394	Q	2.33%	4288	11.7	2.4	11839	32.4	6.7
Dunwich Beach – 150,000	L	3.11%	5043	13.8	3.3	15928	43.6	10.6
Eastbridge – 38,871	R	1.56%	606	1.7	1.6	7800	21.4	20.1
Minsmere Core – 120,000	P	0.74%	844	2.3	0.8	3776	10.3	3.6
Minsmere Outer – 30,000	Q	2.96%	1190	3.3	4.0	15,102	41.4	50.3
Sizewell Beach – 195,557		1.95%	3813	10.4	1.9	9750	26.7	5.0
Southwold – 150,000	G	1.75%	4325	11.8	2.9	10450	28.6	7.0
Walberswick – 150,000	C,D,E,F,H,I	1.17%	1944	5.3	1.3	6,039	16.5	4.0
Westleton – 60,000	M,N,O	1.36%	1005	2.8	1.7	6989	19.1	11.6
Westwood Marshes – 60,000	J	0.19%	114	0.3	0.2	950	2.6	1.6

Inc. = increase

1. With reference to Figures 001-010 in the Recreational Disturbance Evidence Base (Annex A).

2. . 'Realistic' approach: involves determining the percentage of survey respondents who said that they would be displaced to each named location and then calculating the number of additional visits that would be generated by multiplying the estimated number of annual visits at each of the locations by the percentage of displaced users (see Recreational Disturbance Evidence Base, Annex A).

3. More precautionary approach: the same basic method as (1), except that the calculated number of additional visits to each specified location has been taken as a percentage of an estimated 500,000 annual visits to the Sizewell survey area as a whole (based on extrapolation of the 4214 visitors observed over the survey period). (See Recreational Disturbance Evidence Base, Annex A).

3. Recreational Disturbance Effects on Ecological Interests

3.1 Introduction

3.1.1. In respect of the Sizewell C Project and the findings of the recreational use surveys, it is apparent that the greatest effect on recreational interests relates to the likely displacement of visitors from the Sizewell C area during the construction phase. The relocation of these people to other areas in which to undertake their recreational activity (primarily walking and dog-walking) has the potential to cause additional disturbance pressure to existing breeding and wintering bird populations and also some sensitive vegetation types. The focus of the review presented here therefore centres on the effects that disturbance linked to recreational walking and dog-walking may have on birds, in particular ground-nesting species and wintering waterbirds, and trampling effects to shingle vegetation.

3.2 Effects on bird species

3.2.1. Liley et al. (2015) (Ref. 3.1) provide an overview of the range of impacts on birds that may result from recreational disturbance, as listed below:

- redistribution (short-term or long-term avoidance) of birds in response to the presence of people;
- reduced intake-rate of food due to birds feeding in areas with poorer available food resources;
- increased energy expenditure as a result of birds reacting to disturbance by flying to different areas to feed and being flushed while feeding and roosting;
- physiological impacts, such as increased stress, which may also have consequences for energy expenditure; and
- direct mortality, such as predation from domestic dogs, predators exploiting disturbance events or nests being trampled.

3.2.2. Numerous studies have shown that walkers can induce anti-predator behavioural responses in birds, including increased vigilance and earlier flight initiation. Previous studies have also demonstrated a negative effect of human disturbance, in the form of dog walking, on the diversity and abundance of bird species in an area (Ref. 3.2). While it is acknowledged that studies demonstrating the consequences of disturbance on population

size, rather than effects on behaviour, are most useful for providing evidence of impacts on a species (Ref. 3.3), long-term studies of the effects of disturbance at the population level are currently lacking.

3.2.3. The response to disturbance can be considered as a trade-off between use of a certain resource and the perceived predation risk posed by humans (Ref. 3.4; Ref. 3.5). Above a certain threshold of disturbance, perceived threats outweigh potential benefits (Ref. 3.6). Behavioural responses to disturbance, for example flushing, can be seen as part of a continuum towards complete avoidance of certain areas.

3.2.4. Direct mortality resulting from disturbance has been shown in a few circumstances (e.g. Ref. 3.7) and many (but not all) studies have shown a reduction in breeding success where disturbance pressure is high (e.g. Ref. 3.8). Habitat that is suitable for breeding / wintering birds may also become unavailable as a result of disturbance and represents an effective form of habitat loss (Ref. 3.9).

a) Effects on birds of heathland and forests (woodlark and nightjar)

3.2.5. A number of studies have looked at the effects of recreational disturbance on ground nesting birds such as nightjar and woodlark. Much of this work is of direct relevance to assessing the potential effects of changes in recreational pressure on the designated nightjar and woodlark populations of the Sandlings SPA and Minsmere-Walberswick SPA and is reviewed and summarised in the following sections.

3.2.6. Langston et al. (2007) (Ref. 3.10) noted that UK populations of nightjar and woodlark had increased significantly in recent decades, coinciding with the availability of areas of clearfell in planted forests, often on former heathland habitats; clearance and restocking of areas damaged by storms in 1987 and 1990; and the restoration of heathland habitats. It was noted that further recovery of both species may be limited by restocking of planted forests and effects of recreational disturbance.

Settlement patterns of ground-nesting birds such as nightjar and woodlark may be restricted by high levels of human disturbance (Ref. 3.9), or the birds' productivity may be reduced (Ref. 3.8), or both.

i. Nightjar

3.2.7. Studies of nightjar on the Dorset heaths found significant negative effects of the amount of developed land, and the number of houses around heathland patches, on the density of nightjars, based on data from the 1992 national survey (Ref. 3.11).

3.2.8. Field studies on the Dorset Heaths in 2002 and 2003 found that nests which failed were closer to paths (the relationship was significant in 2002 but not 2003). Failed nightjar nests were also found to occur in areas of shorter vegetation and with significantly lower vegetation cover. The proximate cause of failure was most frequently egg predation, potentially when a female was flushed from a nest (Ref. 3.10). Nest cameras recorded 12 flushing events, all during the day. One event (cause of flushing not identified) led to egg predation by a carrion crow. The cause of flushing was identified for only two events, in both cases a dog, neither of which led to nest failure. It was observed that most off lead dogs remained on paths, with only a few ranging widely into the heathland vegetation (particularly in areas of short heather), although just one dog could disturb large areas (Ref. 3.10).

3.2.9. Dolman (2010) (Ref. 3.12) studied recreational disturbance and predation, and the potential for interaction between these two factors, on breeding nightjar and woodlark. The study site was Thetford Forest, part of the Breckland SPA in Norfolk and Suffolk. Visitor and predator surveys were conducted in the vicinity of nesting areas and wider areas; recording measures of human recreational activity (including dogs), and avian and mammal predators. Nightjar nests were monitored with digital infra-red nest cameras. The study was not designed to examine whether nightjar fail to occupy, or occur at lower density, in areas of suitable habitat experiencing higher levels of recreational disturbance. For nightjars that established territories and attempted to breed, there was no evidence that recreational activity affected nesting success. Nightjars nesting in patches with greater levels of recreational activity did not nest further from rides. Mean diurnal flush rates from nests were not related to proximity to the nearest ride. Of 14 nest predation events recorded most were nocturnal; where predators were identified most were mammals, in particular foxes and badgers.

3.2.10. A 10 year study of nightjar habitat use and breeding success in a woodland area in Nottinghamshire with open public access, compared a heavily disturbed and less-disturbed areas of equivalent habitat (Ref. 3.13). The study site was predominantly commercial pine plantation with a patchwork of deciduous trees, clear-fell, and fragmented lowland heath. Nightjars nested primarily in the clear-fell and heathland habitats. During the study period, visitor numbers ranged approximately from 200,000 to 400,000 annual visits. Nightjar density was found to be significantly lower in the heavily disturbed habitat but average breeding success per pair, in terms of production of eggs and fledglings, was not significantly different between the two areas across years. Thus, recreational disturbance may reduce settling densities and affect nest site selection of nightjars. It was suggested that female birds may be more susceptible to recreational disturbance than males.

3.2.11. A study at Sandlings in Suffolk, found that for areas of suitable breeding habitat, visitor intensity (people per hour within 100m) was significantly higher for 25x25m grid cells without records of nightjar compared to those with nightjar records (Ref. 3.14; the records referred to are described as individuals per hectare and it is not clear how these may relate to breeding territories); with a median visitor intensity of 14.5 for cells with nightjars and 17.3 for cells without. For data for one year only, grid cells of suitable habitat were divided into four categories of visitor intensity from low to high (<11, 11-18, 18-28 and 28-212 people per hour), and while nightjar density was highest in the lowest visitor number category, there was no significant difference in the proportion of nightjars occupying each category of visitor intensity (**Figure 3.1**).

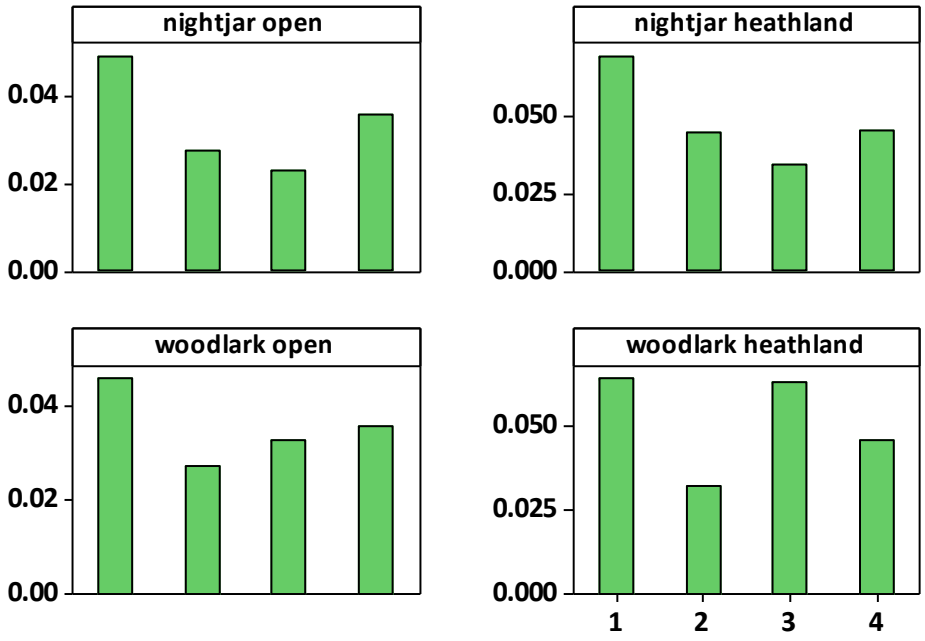
ii. Woodlark

3.2.12. A study of 16 heathland sites in Dorset with varying disturbance levels looked at population level effects of recreational disturbance on woodlark (Ref. 3.15). Breeding density in areas of suitable habitats was lower on sites with higher disturbance levels. On heathland sites with recreational access, areas with suitable habitat were less likely to be occupied by breeding birds at higher levels of disturbance, with the probability of occupancy reduced below 50% at about eight disturbance events per hour. Woodlark nest survival was however not affected by disturbance and productivity was actually found to be higher on more disturbed heaths due to strong density dependence (i.e. breeding output of woodlarks declines strongly with increasing nest density).

3.2.13. Based on the observed spatial distribution of breeding territories, nest productivity and data on recreational usage within their study area, modelling of the woodlark population under different access scenarios was undertaken (Ref. 3.15). The scenario modelling suggested that disturbance was already affecting the woodlark population, predicting a 13% increase in the breeding population if no access was allowed. Under existing access arrangements, a doubling of visitor numbers predicted a 15% reduction in population size; whereas a doubling of visitor numbers and redistribution of disturbance evenly across sites predicted a 40% decrease. This difference between scenarios was explained by considering under current access arrangements, the areas most affected were already unoccupied by woodlarks and the increase in disturbance on most other sites would be insufficient to cause abandonment of nest sites. Under the scenario where access to all sites was allowed and current disturbance levels were redistributed a 10% increase in population size was predicted. Thus the modelling indicates that impacts on the population depend on both the numbers of people present and their spatial distribution; and increases in breeding success at lower densities can at least partially balance the negative effects of disturbance.

3.2.14. Cruikshanks et al. (2010) (Ref. 3.14) studied the distribution and abundance of woodlark, nightjar, and Dartford warbler in the South Sandlings, Suffolk (Tunstall and Rendlesham Forests) in relation to visitor numbers. Using data from all years of the study, there was no significant difference in visitor intensity (people per hour within 100m) for 25x25m grid cells without and without records of woodlark (as above for nightjar, the records referred to are described as individuals per hectare and it is not clear how these may related to breeding territories). For data from one year only (2009), across both all open habitats and heathland patches there was a higher woodlark density in the areas with lower visitor numbers. However, as described above for nightjar, there was no clear relationship between the density of woodlark and increasing visitor numbers, and no significant difference in the proportion of woodlarks occupying each category of visitor intensity (**Plate 3.1**).

Plate 3.1: Bird density (nightjar, woodlark) in relation to visitor numbers in the South Sandlings



[Visitor intensity levels are: 1 - <11 / hr; 2 – 11-18 / hr; 3 - 18-28 hr and 4 – 28-212 / hr. Y – axis is density of birds per hectare. From Ref. 3.14.]

3.2.15. Dolman (2010) (Ref. 3.12) reports on a study into the effect of recreational disturbance on breeding woodlark and nest predation in the Breckland SPA. Analysis of data on the abundance and distribution of fox and carrion crow (the two main predators of woodlark eggs and fledglings) revealed that there was no relationship between levels of fox or crow activity, and levels of recreational activity, or proximity to car parks, or amount of urban settlement in surrounding buffers. It was therefore concluded that recreational activity

and development would be unlikely to increase the activity of these potential predator species.

3.2.16. Monitoring of nests by miniature digital nest cameras showed that woodlark were exposed to a wide range of nest predators, including fox, kestrel, adder, hedgehog and stoat. Of the 147 woodlark nests monitored, the median level of recreational activity (as predicted from models controlling for day of week, time of day) was 0.7 recreational events per hour, while the upper 25% of the monitored nests were in patches experiencing >2.2 events per hour, when averaged across the whole day including both peak and quiet times. Thus, most woodlark nests were in relatively quiet parts of the forest. Analysis of broods from 54 successful nests gave no evidence that recreational activity affected post-fledging survival.

3.2.17. Dolman (2010) (Ref. 3.12) concluded that there was no evidence that current levels of recreational activity within the Breckland SPA were having any detrimental impacts on the breeding success or productivity of woodlark that establish territories and attempt to breed. As for nightjar, the study was not designed to examine whether woodlark fail to occupy, or have lower abundance in, patches experiencing higher levels of recreational disturbance. It was, however, recognized, that if levels of recreational activity were to considerably increase beyond those encountered during the study, that detrimental effects on the breeding productivity of woodlark and/or nightjar could arise.

b) Recreational disturbance effects on breeding and wintering waterbirds

3.2.18. The effect of recreational activities that may cause disturbance to waterbirds has been studied extensively and has been highlighted as a significant threat to waterbird populations in some areas (Ref. 3.16).

3.2.19. To waterbirds, humans are perceived as predators (Beale & Monaghan 2004), and if a human action is perceived as threatening waterbirds may show anti-predator behaviour, including becoming more attentive, walking or swimming away, or taking flight (Ref. 3.17).

3.2.20. Interference with feeding and roosting activities in wintering waterbirds is the primary cause for concern with recreational disturbance since this may lead to long-term, adverse consequences. Repeated disturbance may result in birds taking flight thereby expending energy and depleting energy reserves that are required for successful migration and / or overwintering, particularly during periods of intense cold.

3.2.21. The responses of overwintering waterbirds to disturbance stimuli may vary greatly and the sensitivity of species varies with factors such as weather, age,

and habitat use (Ref. 3.18). Habituation may arise if disturbance events are relatively frequent, although again, some species exhibit a greater capacity for habituation than others (Ref. 3.19).

3.2.22. Because of the variability of response between species and in respect of the nature of the stimuli and conditions, quantifying the effects (observed or potential) of disturbance, particularly at the population level, is extremely difficult. Assessment of effects therefore has to largely rely on documented observations of the response of waterbirds to recreational stimuli and the application of these findings to specific situations.

3.2.23. Burton et al. (2002) Ref. 3.20) used data from the WeBS Low Tide Count Scheme and tested whether waterbird numbers were related to the presence of nearby footpaths. It was found that statistically redshank numbers were significantly lower if a footpath was close to a count section. There was also a temporal effect, with decreased numbers of redshank at these count zones during the weekend when compared to the weekday, when the footpaths are more likely to be used.

3.2.24. Bregnballe et al. (2009) (Ref. 3.21) conducted an experimental study to measure pedestrian disturbance to dabbling ducks. The study area comprised grazing marsh habitat bounded by footpaths from which walkers would be visible to birds. They found that with shoveler all birds within 150 m of the path took flight and abandoned this area, sometimes moving over 400 m from the path, and did not return within 1hr of the disturbance event. Wigeon flushed when up to 250 m from the pedestrian but gradually returned to within 150–250 m of the path, with post- disturbance numbers reaching 93% of pre-disturbance numbers 1hr after the disturbance. Teal within 150 m of pedestrian on a footpath took flight, usually flying over 250 m and did not return for 1hr after the disturbance event. It was also found that birds were statistically significantly less likely to forage 150-400 m from the footpath following a disturbance event.

3.2.25. Medeiros et al (2007) (3.22) found that breeding little terns using a beach in Portugal were significantly affected by human disturbance with 35.7% of nests destroyed by humans or dogs on a sandy beach environment. As part of this study they also introduced protective measures (signage, wardening etc.) and this significantly reduced the nest failure rate and the authors concluded that, along with predation, human disturbance was the key cause of nest failure in breeding little terns.

3.2.26. Observations of the little tern colony on the beach at Great Yarmouth shows that numbers fluctuate significantly from year to year. Rates of predation are high in some years and management measures have been introduced to reduce predation pressure. As the colony is located on a very well used

beach, pressure from recreational use is high and active management (through the use of electric fences, wardening and controlled access) is undertaken when the birds are present. Without this intervention it is considered highly unlikely that the site would support breeding little tern (Ref. 3.23).

3.2.27. Holme and Laursen (2009) (Ref. 3.24) report the findings of a controlled experimental study at a Danish Special Protection Area (SPA) reserve to document the effect of recreational disturbance (walkers) on breeding black-tailed godwit. Behavioural observations indicated that birds were highly sensitive to human disturbance and unlikely to habituate. Disturbance levels of seven walkers/day affected territory densities up to 500 m from routes taken by walkers, causing effective habitat loss to breeding Black-tailed Godwits. The authors conclude that the species' sensitivity to disturbance may help explain why it has disappeared from many of its former breeding areas across north-western Europe.

3.2.28. McLeod et al. (2013) (Ref. 3.25) reviewed and studied the flight response of a range of bird species to different transport types including cars and walkers. They found that although species varied in their response to different stimuli, it was confirmed that, where discrimination between stimuli occurs, vehicles tend to evoke shorter flight distance responses than humans on foot. These authors found that single and multiple walkers evoked the same flight distance response in five of the six bird species studied.

3.2.29. In a study of the recreation disturbance effects on wintering waterbirds on a gravel pit lake, 19% more waterbirds in total and over 50% higher numbers of pochard, mallard and goldeneye were recorded on the lake on Sundays compared to weekdays (Ref. 3.26). Their surveys also revealed that there was a significant change in waterbird community between weekday and Sunday, as well as between months over the winter. This work suggested that water-based recreation on nearby lakes on Sundays forced some species of waterbirds to adopt a 'weekend effect' strategy and take refuge in less disturbed areas during the daytime when recreational activities in the area reached a peak. Such a response by waterbirds to temporal changes in disturbance pressure is likely to occur elsewhere but may be limited by the availability of areas that are subject to low or no levels of disturbance that birds can utilize.

3.2.30. Mathers et al. (2000) (Ref. 3.27) report on a study of the distribution and abundance of wintering wigeon and pale-bellied brent geese on Strangford Lough. The study assessed the types of human activity on Strangford Lough and their likely differential effects on brent geese and wigeon. They found that wigeon reacted at greater distances from human activity, notably walkers (the commonest observed activity) than brent geese, were more likely to fly

greater distances and less likely to return to their former activity at this site. Human disturbance affected birds significantly because they were usually disturbed while feeding which is limited temporally by tidal patterns. The authors concluded that recreational disturbance could have contributed to the significant decline of wigeon in Strangford Lough, although it is probably not the only factor involved.

3.2.31. Banks and Bryant (2007) (Ref. 3.2) experimentally manipulated dog walking at 90 sites in woodland on the urban fringe of Sydney, Australia and monitored the responses of multispecies bird assemblages. The study showed that in woodland areas during dog walking there was a 35% reduction in bird diversity and 41% reduction in abundance, both in areas where dog walking is common and where dogs are prohibited. Humans walking alone was also found to lead to some disturbance, but this was recorded as typically being less than half that induced by dogs. Ground dwelling birds appeared most affected; 50% of the species recorded in control sites were absent from dog-walked sites. It should be noted that Banks and Bryant (2007) Ref. 3.2 found no net difference in bird diversity or abundance between areas with and without regular dog walking receiving the same treatment, suggesting that long-term impacts may be small.

3.3 Effects on habitats

3.3.1. During the HRA process, it was recognised that there is the potential for an increase in visitor numbers or change in patterns of use of local beaches due to both displacement of existing users and an influx of workers. Of particular concern was the additional pressure through trampling underfoot that this potential change / increase in use could have on existing coastal vegetation, notably shingle and drift line communities.

3.3.2. The reaction of vegetation to physical disturbance is the result of two factors: the susceptibility of the vegetation to the particular disturbance and the ability of the vegetation to regenerate. Physical disturbance may be caused by several human activities, with trampling often being considered as one of the main damaging effects particularly at coastal locations.

3.3.3. Studies of sand dune vegetation have shown that formation of trampled paths in grey dune and dune heath communities causes a reduction in the organic content of the soil, a rise in pH and a reduction in conductivity and carbonate content. Concomitantly, a considerable decrease in the cover of the vegetation, with no or only a few species left in the central, more trampled parts, takes place. In moderately trampled zones along paths a community of colonizers or early succession species normally found in grey dune habitats and blowouts can develop.

3.3.4. Some of the most susceptible communities on shingle structures are those with abundant lichens. These slow growing species are very sensitive, especially in dry weather, when they are particularly easy to damage. Even the passage of one person walking on an established vegetated shingle ridge can leave 'footprints', which may never be repaired. Compaction of the surface may also affect the seed bank making it more difficult for some species to germinate.

3.3.5. Light trampling of some shingle vegetation communities may increase floral diversity. However, under conditions of heavy trampling vegetation may be lost altogether and soil conditions altered such that recovery of vegetation may not occur without management intervention. Edwards (2005) (Ref. 3.28) found that along the shingle bar at Slapton Ley, Devon, that soil depth followed a general pattern of decreasing values from Strete Gate to Torcross, which in part controlled the vegetation communities. This change in soil structure was considered largely related to compaction through trampling due to greater numbers of visitors walking between Torcross and the main car park compared to the northern end of the site.

3.3.6. Because of the succulent nature of many shingle and drift-line pioneer plants they are particularly susceptible to trampling. However, other factors such as the frequency of storm conditions, mobility of shingle / beach structures, management for coastal defence purposes and longer-term sea-level rise may play an equally important or more important role in the health of these vegetation communities.

4. Assessment of Effects on Designated European Interests

4.1 Introduction

4.1.1. As discussed in the Recreational Disturbance Evidence Base (Annex A) there is significant recreational use of a large part of the Suffolk coast and a recognition (e.g. in Natural England's Supplementary Advice on Conservation Objectives and Site Improvement Plans for European Sites) that this recreational use is potentially already exerting pressure upon internationally designated nature conservation interests, notably breeding / wintering bird populations and, at some locations, coastal vegetation sensitive to trampling.

4.1.2. Consultation with existing recreational users at Sizewell indicates that during construction people may well decide to relocate to alternative sites from which to undertake their activities. In total, 40 sites were identified as alternative locations to which users would relocate (see Recreational

Disturbance Evidence Base (Annex A) thus suggesting that any recreational displacement during construction would be relatively diffuse. A number of these alternative sites are located adjacent to or with direct access into areas of habitat that form part of a designated European site. The estimated potential for an increase in recreational pressure at some of these sites as a result of an increase in visitor numbers through redistribution of existing users and the construction workforce at Sizewell C is shown in **Table 2.1**.

4.2 Analysis of ecological sensitivities at potential locations where an increase in recreational use may occur

4.2.1. In order to better determine the nature of any disturbance effect an analysis of the locations to which recreational users could be displaced (see **Table 2.1**) has been undertaken to identify the level of recreational access to each of the designated European sites through car parks, PRoW, open access land and other public access provision; and to identify the ecologically sensitive receptors at each location that have the potential to be affected by increased recreational pressure.

4.2.2. Given that most of the additional recreational visits during construction of Sizewell C are likely to be made by walkers (and walkers with dogs) and users would arrive at their recreational destination by car, particular focus is given to the use and facilities of car parks (formal and informal) at or near to the European sites being assessed. Locations with car parks have been analysed in order to determine the visitor facilities available, existing site management (including dog restrictions) of areas within likely reach by users and the ecological features that may be affected by a potential increase in recreational use.

4.2.3. Due to the large extent of some of the European Sites there may be multiple car park locations / access points that visitors can use to access a European Site. To some extent this may serve to create a more diffuse pattern of access, but this depends on factors such as size of car park, facilities, location of sensitive ecological receptors and existing patterns of recreational use.

4.2.4. As illustrated by the literature review in Chapter 3, there is no fixed correlation between the number of recreational visits and disturbance to interest features of European Sites. The effects will also depend upon the behaviour of visitors and the pattern of recreation usage. For example, a well-used site, with wide, clearly defined access tracks, in which visitors tend to behave in a similar manner (such as remaining on paths) could potentially have the capacity to absorb significant numbers of additional visits. In such situations, the existing ecological interests may be adapted and habituated to this pattern of recreational usage and significant increases in the number of recreational

visits would be necessary to cause additional disturbance effects. In contrast, at sites with limited recreational use, with poorly defined path networks and minimal management intervention, small increases in visitor numbers could have an ecological impact.

4.2.5. An analysis of alternative locations identified from the visitor survey report is presented and discussed in the Recreational Disturbance Evidence Base (Annex A). A summary of the analysis is presented here in **Table 4.1** and the locations referred to are shown in **Figures 001-010** of the Recreational Disturbance Evidence Base. The summary given provides a description of the facilities / attributes at each of the locations together with the ecological sensitivities (based on the designated interests of the European site accessible at that location) and the predicted increase in visits resulting from both displacement of existing users and the construction workforce. In relation to the potential for additional visitor activity to affect sensitive ecological receptors at each location, the analysis considers a number of factors namely:

- Proximity to a designated European Site / designated feature(s);
- Existing visitor profile and likely activities (e.g. walking, beach activities etc.);
- Accessibility, extent of visitor management measures and facilities in place at the location;
- Existing (estimated) numbers of visits and predicted increase in visits; and
- The sensitivity of ecological features to increased recreational disturbance pressure.

4.2.6. The estimated increase in annual visits provided in **Table 4.1** is based on the methodology presented in the Recreational Disturbance Evidence Base (Annex A), as summarised in **Table 2.1** (for both the realistic and the more precautionary visitor number scenarios). Where users mentioned a site or place, but did not provide a specific location to which they might relocate, the estimated increase in visits has been applied to all access locations at that site. As an example, five potential access locations are identified at Walberswick and potentially displaced users who gave Walberswick as an alternative location could use one or more of these access locations. Where multiple access locations are identified for an individual site the same estimated increase in visits has therefore been applied.

4.3 Implications for European sites

4.3.1. The alternative sites analysis presented in **Table 4.1** provides a basis for assessing the implications that displaced / additional recreational users may have on the designated features of the European sites screened into this preliminary assessment.

4.3.2. In undertaking the assessment, several assumptions have been made:

- The existing level of visitor / recreational pressure is may already be having or has had an impact on designated interests. Where appropriate, information relating to this aspect has been drawn from the information contained in the SIPs and SACOs, and also informed by visitor data to National Nature Reserves (Natural England) and National Trust properties;

- People displaced from locations as a result of the Sizewell C works will more than likely seek sites with similar recreational facilities / experiences. This is considered especially so for people who want to walk their dogs off-lead, who will seek out alternative locations where they know that restrictions are not in place (or potentially enforced).

Table 4.1: Summary of recreational facilities, activities and management at sites given as potential relocation options by users potentially displaced from the Sizewell area during construction of Sizewell C. Letters refer to locations on Figures 001-010 of the Recreational Disturbance Evidence Base (Annex A).

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
A. Kessingland	Two car parks with combined capacity of an estimated 45 spaces. Approximately 10 informal spaces at Beach Road car park and approximately 35 spaces at Church Road car park, managed by the Kessingland Parish Council. Information boards available on local area and AONB. A separate bylaw sign states dogs must be kept on a lead along the entire length of the promenade, and that from 1st May to 30th September dogs are banned from an area on the seashore and beach. Beach access is provided. Provision is made along the coast by way of the Suffolk Coastal Path which forms the eastern seaward boundary of the Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, and NNR. There do not appear to be any inward footpaths from the coast that	**Breeding little terns** Direct access to the beach along the seafront. The shingle beach at Kessingland is regularly used as a breeding site by little tern. **Coastal Lagoons** Direct access to the beach adjoining the coastal lagoons. Low sensitivity to pressures from trampling causing disturbance to surface and shallow sub-surface of the foreshore. Low sensitivity to litter.	Outside study area, so no value calculated. However, only 4% of respondents (in total) stated they would relocate to sites outside the study area (including, but not limited to, Kessingland).	Birds: Potential for effects on nesting little terns but, as this is an area which already experiences high visitor levels, management measures (e.g. fencing) would most likely be put in place if terns are present. **Coastal Lagoons:** Dog walking has no impact on the coastal lagoons of the site. Impacts from trampling are considered to be low due to the large magnitude of effect required to cause a shift or change in substratum surrounding the lagoons.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	provide entry to the Reserve and there is little evidence of local promotion. It is observed to be a popular local destination for dog walking along the promenade and beach.			
B. **Covehithe**	There are estimated to be 5 spaces outside the Covehithe Abbey and approximately 50 spaces along roadside verges on approach to the village from the east. Shorebird protection areas are established on the beach by post and wire fencing which will keep dogs, as well as people, out of nesting areas. Keep dogs out of the fenced off shorebird protection areas from March to September. One Natural England entry panel gives a general statement of "keep dogs on leads" but does not define any temporal or spatial limits to the latter. The joint Natural England and Benacre Estate information panel provided at the roadside where the public footpath to the reserve commences, states that dogs	**Breeding little terns:** Direct access to the beach adjoining Covehithe Broad. Covehithe Broad has been used as a breeding site by little tern. **Breeding wetland birds:** A public footpath from Covehithe runs adjacent to coastal marshland / lowland fens (Pottersbridge Marshes) that may support qualifying features of Benacre to Easton Bavents SPA, such as breeding marsh harriers. **Coastal Lagoons**	No respondents identified this as a site to relocate to.	**Birds:** Potential for effects on nesting little terns but, as this is an area which already experiences high visitor levels, management measures (e.g. fencing) would most likely be put in place if terns are present. The single public footpath which runs adjacent to Pottersbridge Marshes is likely to provide limited access only, with the only access across being at Potter's Bridge.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	need to be "under close control" rather than on a lead. Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, NNR can be directly accessed from the village via a public footpath and through observation, this is a well-used local route. Given that there is limited promotion of the reserve or its features both within the village and in the wider area, it is considered that this access point is utilised mostly by locals, or for short walks by those visiting the Abbey or the beach.	Direct access to the beach adjoining the coastal lagoons. Low sensitivity to pressures from trampling causing disturbance to surface and shallow sub-surface of the foreshore. Low sensitivity to litter.		**Coastal Lagoons:** Dog walking has no impact on the coastal lagoons of the site. Impacts from trampling are considered to be low due to the large magnitude of effect required to cause a shift or change in substratum surrounding the lagoons.
C. **Hen Reedbed**	Car parking capacity estimated to be 10 cars. The car park at Hen reedbed is most likely to be used to access the reedbed paths and viewing hide. It is possible to cross the A1095 and access the north shore of the Blyth Estuary, but a circular walk would be difficult to accomplish without extensive walking along A109.	**Minsmere-Walberswick SPA** **Breeding and wintering wetland birds** Access by footpaths to the Hen Reedbeds, leading to potential disturbance of qualifying features of the Minsmere-Walberswick SPA (including breeding marsh harriers, wintering hen harriers and breeding / wintering bitterns) in the vicinity of the footpaths.	1.3-4.0%	**Birds:** There is potential for increased disturbance effects, but access is limited to established paths around the edge of Hen Reedbeds, so reducing this risk. The open access onto the saltmarsh at the northern edge of the Blyth Estuary could

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Orientation panel states that "dogs on leads are allowed on the reserve". Direct access to viewing area over reedbed habitat. Habitat in vicinity of car park is reedbed and estuary to the south of the road. No direct access to Open Access Land and no direct rights of way access except by going across the A1095 where access to the north bank of the Blyth Estuary is possible, albeit subject to flooding at high tide.	**Breeding and wintering estuarine birds** Access via a footpath along the saltmarsh to the north of the Blyth Estuary. The open nature of the estuary may encourage people to let dogs off the lead. This has the potential to disturb qualifying features of Minsmere-Walberswick SPA using the intertidal habitats of the estuary in proximity to the path– (e.g. breeding / wintering avocet and wintering white-fronted geese).		facilitate increased disturbance to breeding and wintering waterbirds, particularly as there is no mention of dog permissions on signage.
D. Blythburgh	There are an estimated 10 car parking spaces to the north of the Village Hall at Blythburgh. Litter and recycling bins provided. Access can be taken eastwards into the Walberswick to Minsmere SPA. A public footpath heads north east towards Hen Reedbeds (Access point C); however, the legally recorded route crosses inter-tidal mudflats	**Breeding nightjar and woodlark** Direct access to the surrounding open access heathland. The open nature of the heath may encourage people to let dogs off the lead. This has the potential to disturb ground-nesting nightjar.	1.3-4.0%	**Birds:** There is potential for increased disturbance to heathland nesting birds and to breeding and wintering waterbirds. However, the car park is small and quite difficult to locate suggesting that it has a low

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	and marshes and disappears at high tide, and therefore this route seems unlikely to be accessible. Signage indicates some public footpaths are "not a through route due to natural erosion". A public footpath heads south east, through the Walberswick to Minsmere SPA to Tinkers Walks (Access point E). Access to the Walberswick to Minsmere SPA can be taken from the Bridge Sluice to the south east along the River Blyth. Signs giving potentially conflicting messages including 'keep dogs on leads' and 'keep dogs under close control'.	**Breeding and wintering water bird populations** Access via a footpath along the edge of the Blyth Estuary. The open nature of the edge of the estuary may encourage people to let dogs off the lead. This has the potential to disturb qualifying features of Minsmere-Walberswick SPA using the intertidal habitats of the estuary in proximity to the path (e.g. breeding / wintering avocet and wintering white-fronted goose).		capacity to accommodate additional recreational usage. As the car park is discrete and isolated recreational users are less likely to follow the lead of other users (for example with dogs on leads) and are more likely to make their own decisions potentially letting dogs off the lead. The conflicting signage for dog walkers will also lead to more confusion as to whether dogs should be kept on a lead. This may increase the possibility that disturbance to areas of habitat currently subject to limited disturbance may increase.
E. Walberswick Tinker's Walk Car Park	Lay-by is open to the public all year round and provides free parking for approximately 5 cars.	**Breeding nightjar** Direct access to the surrounding open access heathland. The open	1.3-4.0%	The car park is small and quite difficult to locate suggesting that it has a low capacity to

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Access to a number of local footpaths and bridleways which connect with open access land to the north and south. This site is likely to be used by local visitors and walkers exploring the Walberswick National Nature Reserve. The car park is managed by Natural England. Information board on the Walberswick National Nature Reserve with a request for visitors to follow the Countryside Code and in particular, to keep dogs on the lead. Specific information provided on the use of Open Access land at including a request to "keep dogs on a fixed, short lead from 1st March until 31st August and at all times near livestock" for conservation purposes.	nature of the heath and the edge of the estuary may encourage people to let dogs off the lead. This has the potential to disturb ground-nesting woodlark and nightjar on the heath, and breeding and wintering birds using the estuary. **Wintering estuarine bird populations** Access via a footpath along the edge of the Blyth Estuary. The open nature the edge of the estuary may encourage people to let dogs off the lead. This has the potential to disturb wintering birds using the intertidal habitats of the estuary in proximity to the path.		accommodate additional recreational usage. As the car park is discrete and isolated recreational users are less likely to follow the lead of other users (for example with dogs on leads) and are more likely to make their own decisions potentially letting dogs off the lead. This may increase the possibility that disturbance to areas of habitat currently subject to limited disturbance may increase.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
F. Walberswick Common	A number of small car parks with combined capacity of an estimated 20 spaces. Roadside laybys and lane ends. Car parks provide access along footpaths and bridleways to Open Access Land at Walberswick Common, part of the Walberswick to Minsmere SPA. The Walberswick SPA can be directly accessed from various small car parks and the Common itself is highly permeable. Observed as a popular location for local recreational activities including dog walking. It is possible to take a circular route north to the River Blyth and eastwards into Walberswick village or take the ferry to Southwold or take longer walks through the SPA to the south. Signage on the Open Access Lane and advising presence of adders. No indication of a warden presence. Open Access signage states that dogs need to be kept on a fixed short lead between 1 March and 31	**Breeding nightjar and woodlark** Direct and permeable access is possible to nearby heathland and lowland fens at Walberswick Common, which support ground-nesting nightjar, a qualifying feature of Minsmere-Walberswick SPA. The open nature of the heath may encourage people to roam or let dogs off the lead, which may cause potential disturbance. **Breeding and wintering waterbirds** A circular route follows a footpath along the edge of the Blyth Estuary. The open nature of the estuary may encourage people to let dogs off the lead. This has the potential to disturb species such as breeding / wintering avocet and wintering white-fronted geese using the intertidal habitats of the estuary in proximity to the path.	1.3-4.0%	**Birds:** There is potential for increased disturbance to heathland nesting birds and to breeding and wintering bird populations which use estuarine and/or wetland habitats. **European dry heaths** There is the potential for an increase in trampling effects and littering from visitors on the European dry heaths. Dog waste facilities along the marked paths are provided, decreasing the impact of dog waste on the heathland.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	July and at all times near livestock, although these restrictions do not apply on public rights of way nor for guide/hearing dogs. Warning signage for adders states to "keep dogs under close supervision".	**Breeding and wintering wetland birds** Limited access through Westwood Marshes via a single footpath, located on a causeway, which runs through areas that may be used by SPA qualifying species, such as breeding bittern, marsh harrier and wildfowl and wintering bittern, hen harrier and wildfowl. **European dry heaths** Direct access to heathland. The open nature of the heath may encourage people to let dogs off the lead and trampling effects.		
G. Southwold	Estimated 200 car park spaces in pay and display car park. The Suffolk Coastal Path can be accessed at the car park entrance. Access is provided to the	**Breeding and wintering wetland birds** Limited access to Westwood Marshes via a single footpath, located on a causeway, which runs	2.9-7.0%	**Birds:** There is potential for increased disturbance to nesting little terns, heathland nesting birds and species which use wetland

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Walberswick to Minsmere SPA by ferry across the River Blyth. approximately 700m north of the car park. From the ferry crossing it is possible to join the Sandlings Walk. A long-distance walk (4km) can also be undertaken following the River Blyth upstream to access point C Hen Reedbed. Footpaths in the vicinity are largely well defined and habitat comprises shingle beach with salt marshes along the coast and mudflats along the River Blyth. The edges of the river are exposed and there is frequent signage along its length advising of restrictions/safety practices. Owners are advised to keep dogs under control at all times and use a lead beyond the beach huts along Southwold Harbour road.	through areas of habitat used by Minsmere-Walberswick SPA qualifying species such as breeding bittern, marsh harrier and wildfowl and wintering bittern, hen harrier and wildfowl. **Breeding nightjar and woodlark** Access is possible to nearby heathland (e.g. Walberswick Common) which supports ground nesting woodlark and nightjar, qualifying features of the SPA; this entails a moderate length (3-4 km) walk. **Breeding little terns:** Direct access to the beach adjacent to Corporation and Dingle Marshes. These have been used as a breeding site by little tern.		habitats. However, the large majority of visitors are likely to access the beach sticking to access routes that are already well defined, rather than wandering off the path or accessing new areas. Dogs off the lead could cause a problem with ground nesting terns but this is an area that already experiences high levels of activity and if terns are present then management measures (e.g. temporary fencing) would be more than likely be in place. As the majority of users at this site are likely to be accessing the village and the beach, increased pressure on open heathland habitats resulting from greater visitor use of this site is considered unlikely to arise.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
		Shingle vegetation Direct access to the beach. The beach between Walberswick and Dunwich supports the SAC feature: annual vegetation of drift lines which is sensitive to the effects of trampling.		
H. **Walberswick village car parks**	Popular visitor destination; providing access to the beach, Walberswick National Nature Reserve and the adjoining marsh and heath landscapes. Limited on-road parking within the village. Two pay and display car parks at the eastern end of the village, combined capacity about 140 cars. Area popular for a range of activities including walking, swimming, fishing and dog walking. The AONB authority has erected information boards at each of the car parks which provide background information about the area and requests for visitors to use the path network in order to help protect the	**Breeding and wintering wetland birds** Limited access to Westwood Marshes (breeding bittern and marsh harrier, wintering birds) via single footpath, located on a causeway. **Breeding nightjar and woodlark** Access is possible to nearby heathland (e.g. Walberswick Common) which supports ground nesting nightjar; this entails a moderate (3-4km) walk.	1.3-4.0%	**Birds:** The large majority of visitors are likely to access the beach sticking to access routes that are already well defined, rather than wandering off the path or accessing new areas. Dogs off the lead could cause a problem with ground nesting terns but this is an area that already experiences high levels of activity and if terns are present then management measures (e.g. temporary fencing) would be more than likely be in place.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	sand dunes. Chestnut paling fencing to discourage access to the dunes. Leaflet available online states that due to ground nesting birds, dogs welcome but should be on a lead. At Ferry Road, signage requires dogs to be kept under close control. Informal signs encourage owners to keep dogs on lead at Ferry Road due to the accessibility of the river and sandy banks.	**Breeding little tern** Direct access to the beach. The shingle habitat at Corporation Marshes has been used as breeding site by little tern (although no breeding has been recorded since 2010). **Shingle vegetation** Direct access to the beach. between Walberswick and Dunwich supports the SAC feature: annual vegetation of drift lines which is sensitive to the effects of trampling.		The majority of users at this site are likely to be accessing the village and the beach, therefore increased pressure on open heathland habitats resulting from greater visitor use of this site is considered unlikely to arise.
I. **Walberswick Lodge Road Car Park**	Free car park managed by Natural England, most likely to be used by people who have a good knowledge of the local area. Gives access to Open Access Land and rights of way including the Sandlings Walk. The car park is fenced and visitors are encouraged to use the adjoining PRoWs leading to the reserve.	**Breeding and wintering wetland birds** Limited access to Westwood Marshes (breeding bittern and marsh harrier, wintering waterbirds) via single footpath, located on a causeway and screened by scrub vegetation for most of its length.	1.3-4.0%	**Birds:** This car park is small and quite difficult to locate. It has a low capacity to accommodate additional recreational usage. As the car park is discrete and isolated recreational users are

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	At some access points there is no information, but at the East Sheep Walks access point, Open Access signage states that dogs need to be kept on a fixed short lead between 1 March and 31 August and at all times near livestock, although this does not apply on public rights of way nor for guide/hearing dogs. Information board on the Walberswick National Nature Reserve and a basic level of information about the local environment. Visitors requested to follow the Countryside Code.	**Breeding nightjar and woodlark** Direct access to heathland (open access land) located to the west of the Walberswick reedbed that may support nightjar.		less likely to follow the lead of other users (for example with dogs on leads) and are more likely to make their own decisions potentially letting dogs off the lead. This may increase the possibility that disturbance to areas of habitat currently subject to limited disturbance may increase. Users are likely to remain on the well-defined paths. However, the potential for disturbance by dogs off lead to ground nesting nightjar remains.
J. Walberswick New Delight Car Park	Free car park open to the public throughout the year, up to 10 cars, managed by Natural England. Not signed but marked on maps and leaflets. Access to the adjoining open access land, and local footpaths and bridleways connecting to the	**Breeding and wintering wetland birds** Limited access to Westwood Marshes (breeding bittern and marsh harrier) via a single footpath, located on a causeway and	1.3-4.0%	The car park is small and quite difficult to locate suggesting that it has a low capacity to accommodate additional recreational usage.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Sandlings Walks long distance path, Dunwich Forest and the coast. Information board on Walberswick National Nature Reserve and a request for visitors to follow the Countryside Code and in particular, to keep dogs on the lead. The car park also contains specific information relating to the use of Open Access land at Tinker's Walk and includes a request to "keep dogs on a fixed, short lead from 1st March until 31st August and at all times near livestock" for conservation purposes.	screened by scrub vegetation for most of its length. **Breeding nightjar** Open access to the adjacent heathland may encourage people to let dogs off the lead. This has the potential to disturb ground-nesting nightjar. **Coastal vegetation and breeding little tern** Access is also possible to the coast, but this entails a lengthy (5-6 km) circular route.		As the car park is discrete and isolated recreational users are less likely to follow the lead of other users (for example with dogs on leads) and are more likely to make their own decisions potentially letting dogs off the lead. This may increase the possibility that disturbance to areas of habitat currently subject to limited disturbance may increase.
K. **Dunwich Forest**	Two main car parks and several small road edge car parks in close proximity with a combined capacity estimated to be approximately 100 cars. Open Access Land with a well-defined and extensive path network.	Dunwich Forest is not part of a designated European site. Several areas of open habitat have been created following forestry operations and are being managed by the RSPB and SWT under management	N/A	**Birds:** Open access within the forest may encourage people to let dogs off the lead which has the potential to disturb ground-nesting birds.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Signs and information boards provide information on the geography and history of the areas as well as the management strategy for the forest. Further information is available online including a walking map with trails highlighted. The forest is actively managed by an RSPB, SWT and FC partnership Dog walkers are welcome, with litter bins provided. Advice generally absent apart from at the start of the St Helena Trail where dogs should be kept "under control". The adjacent Living Landscape states "dogs are welcome but should be kept on a lead when near livestock.	agreements with the FC. These areas support breeding nightjar.		There is, however, an extensive well-defined path and ride network which would reduce the potential for people to access areas that may currently be subject to limited levels of disturbance. Given the size of the forest and existing facilities, it is considered that Dunwich forest has good capacity to absorb additional recreational usage.
L. Dunwich Village / Beach	Limited amount of on-road parking within the village of Dunwich and visitors are directed towards the main beach car park (capacity of about 150 cars) at the eastern end of the village.	**Breeding and wintering wetland birds** Dingle Marshes to the north-east of Dunwich beach are managed by the RSPB and SWT. The wetland	3.3-10.6%	**Birds:** The majority of visitors are likely to access the beach sticking to access routes that are already well defined, rather than

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Café, toilet facilities and information boards are located at the car park. Dunwich beach is popular for a range of activities including swimming, fishing and dog walking. The car park provides direct access to the Suffolk Coastal Path and the Dingle Marsh Nature Reserve. There are a number of information boards located within the beach car park which provide background information on the local area and a request to keep dogs on the lead. The beach and inland marshes are part of the Dingle Marshes Nature Reserve. Although there is no fencing deep water-filled ditches behind the beach prevent people from venturing inland. Refuse facilities are provided including rubbish bins and dog litter bins.	habitats support breeding waterbirds such as shoveler and avocet and provide foraging grounds for species such as marsh harrier and bittern. **Breeding little tern** The open nature of the beach encourages people to let their dogs off the lead. Shingle habitat at Dingle Marshes and Corporation marshes has in the past been used by nesting little tern. **Shingle vegetation** The beach between Dunwich and Walberswick is within the Minsmere to Walberswick SAC and supports annual vegetation of drift lines and further back, on the shingle, perennial vegetation of stony banks. This vegetation is sensitive to the effects of trampling and impacts on		wandering off the path or accessing relatively undisturbed areas. Increased footfall over areas supporting shingle vegetation is, however, possible. Dogs off the lead could cause a problem with ground nesting terns but this is an area that already experiences high levels of activity. Seasonal fences are erected on the shingle ridge to protect ground nesting birds and shingle vegetation.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
		its extent and presence in the vicinity of the car park are noted in the SIP.		
M. **North Westleton**	Car park estimated at 10 spaces. Access is available to Open Access Land (although there is no advisory signage) to the east. The Sandlings Walk can be accessed less than 1 km to the east. Access can be taken to Westleton Heath NNR (within the Minsmere-Walberswick SPA) and Dunwich Forest. There is no evident advice to dog owners although advice may have been present on now faded signs on public footpath fingerposts.	**Breeding nightjar** Open access to the adjacent heathland at Westleton Heath may encourage people to roam or let dogs off the lead. This has the potential to disturb ground-nesting nightjar. Access also to Dunwich Forest which is not part of a designated European site. Several areas of open habitat have been created following forestry operations and are being managed by the RSPB and SWT under management agreements with the FC. These areas support breeding nightjar.	1.7-11.6%	**Birds:** The car parks provide direct access to the open heath with a well-defined path network. The open nature of the heath may encourage people to let their dogs off the lead with the potential to disturb heathland ground nesting birds. However, users of the heath, including dog walkers, are considered unlikely to stray off the existing path network, thus limiting the potential for relatively undisturbed areas to be accessed. Signage highlighting the site sensitivities is in place.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
N. **Westleton Heath (three car parks)**	Car parks open to the public all year round and free to use, combined capacity estimated at 30-40 cars. Access to Westleton Heath (Open Access Land), Dunwich Village (5km walk), Dunwich Heath and the direction of the northern boundary of the RSPB Minsmere Reserve . The car parks at Westleton Heath are managed by Natural England and contain information boards relating to the Westleton Heath National Nature Reserve. Some Open Access signage advises that dogs should be kept on a fixed, short lead between 1st March and 31st August and at all times near livestock. Other Open Access signage states that the on lead restriction does not apply when using on public rights of way nor for guide/hearing dogs.	**Breeding nightjar** Open access to the adjacent heathland may encourage people to let dogs off the lead. This has the potential to disturb ground-nesting nightjar.	1.7-11.6%	**Birds** The car parks provide direct access to the open heath with a well-defined path network. The open nature of the heath may encourage people to let their dogs off the lead with the potential to disturb ground nesting birds. However, users of the heath, including dog walkers, are considered unlikely to stray off the existing path network, thus limiting the potential for relatively undisturbed areas to be accessed. Signage highlighting the site sensitivities is in place.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Natural England NNR signs ask for people to follow the Countryside Code and for dogs to be kept on leads without any dates or access types stated. Recreational users of the heath, including dog walkers, are unlikely to stray beyond the existing path network which is surrounded by dense and tussocky heather vegetation.			
O. **RSPB Minsmere Outer Periphery (car parks)**	Combined parking capacity of an estimated 195 parking spaces. Includes approximately 70 roadside spaces along Mill Road (from Westleton to Minsmere Visitor Centre entrance), approximately 75 roadside spaces along north-south unnamed road between Dunwich Road and Minsmere New Cut and approximately 50 spaces at an informal car park on east-west road between Sheepwash Lane and Minsmere New Cut. It is possible to access the wider RSPB Minsmere Reserve (extent shown on Figure 001) via public footpaths, a public bridleway (which is also part of the Sandlings Walk) and an unclassified county road.	Habitat in immediate vicinity of laybys is dense scrub and woodland. **Breeding and wintering wetland birds** From the informal car-parking areas it is possible to access the RSPB Minsmere Reserve, which supports qualifying features of Minsmere-Walberswick SPA including breeding avocet, bittern, marsh harrier and wildfowl, and wintering bittern and wildfowl. Once on the core part of	3.3-50.3%	**Birds:** There is potential for increased disturbance to a wide range of the SPA qualifying features. However, much of the visitor access from the outer periphery car parks is likely to be associated with the local footpath network around the periphery of the RSPB reserve, as opposed to the main reserve area. The main habitats for the breeding and wintering wetland bird interest are largely within

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Access to the beach at Minsmere is possible, but a circular walk would involve a relatively long route (6-9 km). Access to Westleton Heath and Dunwich Heath is also possible although this would involve a walk of 3-5 km. There are few signs providing information to dog owners. Online and in one location, the RSPB provide a map showing three nature trails on which dogs are not allowed (the core of the reserve) but welcomes dogs elsewhere as long as they are on a lead. At the boundary of the core reserve where Mill Road crosses the Sandlings Walk, signage for people continuing on the surfaced road states “no public right of way” with a no dogs symbol.	the reserve access is actively managed. Dogs are not permitted on the permissive paths and nature trails so limiting the potential for disturbance to breeding and wintering birds within the main Reserve (reedbeds and lagoons). Wetland habitats adjacent to the Minsmere New Cut and the footpath running from Eastbridge to the coast may be accessed from this location. The grazing marshes and wetlands either side of the footpath may be used by wintering and breeding waterbirds that form part of the designated SPA populations. **Breeding nightjar** Open areas of heathland and lightly wooded habitats to the north and north-east of the car park support		the main reserve area, where access is controlled and restricted, and where paths are screened. There is open access within nearby heathland areas and potential for increased disturbance to breeding nightjar, though it is considered people are likely to remain on permissive footpaths.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
		breeding nightjar. Permissive footpaths run through and adjacent to these areas.		
P. **RSPB Minsmere (main car park)**	Capacity 233 spaces for cars and 3 coaches, plus overflow capacity for over 100 additional cars. Visitor centre, café, public convenience, and three nature trails with hides. Lots of information provided about the reserve and its sensitive features. Water bowls for dogs provided Car park gives access to three nature trails. The reserve is managed using a network of paths and hides to manage visitor pressure. Formal signed paths from the Visitor Centre around the core of the reserve, via a series of bird hides; walkers with dogs are not permitted to use them (except assistance dogs), limiting the potential for disturbance. It is possible to access the wider RSPB Minsmere Reserve via two access roads that lead to the footpaths and a bridleway (which is also part of the Sandlings Walk). Access to the beach is possible via a short walk, and there is a 2km circular walk around	Habitat within the core of the reserve is wetland, reedbed and coast. Along the coast lies an area of bare shingle at the high tide mark with vegetated areas dominated by sand dune lying on top of underlying shingle. Outside the core of the reserve habitat comprises scrub woodland and fields supporting short sward acid grassland. **Breeding and wintering wetland birds** From the main car park, there is pedestrian access to the RSPB Reserve. The reedbeds and lagoons support qualifying features of Minsmere-Walberwsick SPA including breeding avocet, bittern, marsh harrier and wild fowl, and	0.8-3.6%	**Birds:** As detailed above, although there is potential for increased disturbance effects this is unlikely to arise due to the controlled and managed nature of visitor access to the main RSPB reserve area.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	The Scrape, on reserve paths and the Suffolk Coast Path, and opportunities for longer circular walks (6-9km) via either the EDF Energy Sizewell Estate or the RSPB reserve and Dunwich Heath. Access to Westleton Heath and Dunwich Heath is possible although this would involve a walk of approximately 3-5km. Signage indicates dogs are permitted in the visitor centre and café but not on the adjacent permissive nature trails in the core area of the reserve. Online information provides the same message - the online map shows three nature trails in the core of the reserve on which dogs are not allowed (except assistance dogs) but dogs are welcome dogs elsewhere as long as they are on a lead.	wintering bittern and wildfowl. Access within the reserve is actively managed. Dogs are not permitted on the permissive paths and nature trails, which are also often screened, so limiting the potential for disturbance to the qualifying features. Designated paths within the core reserve link up with a public bridleway from which there is open access to heathland and woodland to the west. Open access may encourage people to roam. This has the potential to disturb ground-nesting nightjar, a feature of the SPA.		
Q. **Dunwich Heath**	There is a large (estimated capacity 80-100 cars) pay and display car park at Dunwich Heath which is free to National Trust members.	**Breeding nightjar** Open access to the adjacent heathland may encourage people to let dogs off the lead. This has the	2.4-6.7%	**Birds:** The path network is clear and well defined.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	A tea room, gift shop and picnic area are located on site, as well as toilet facilities. The car park provides direct access to Dunwich heath and the nearby beach, and the Suffolk Coast Path. Visitors are able to undertake circular walks connecting to Eastbridge, Kenton Hills and Dunwich village. Dunwich Heath is carefully managed by the National Trust. Visitors are requested to stay on the marked paths during the bird nesting season. A "woof guide" indicates that dogs must be on leads during the bird breeding season on the heath and there is a "woof walk" where dogs are allowed off lead all year round. Dogs can be off lead all year around on the beach. It is possible to access the RSPB Minsmere Reserve via the beach. RSPB provide a map showing three nature trails on which dogs (except registered assistance dogs) are not allowed on the sections of path within the core of the reserve,	potential to disturb ground-nesting nightjar. Breeding and wintering wetland birds It is also possible for people to access the beach and go south to the RSPB Minsmere Reserve and the coast (see Minsmere, J). **Shingle vegetation** Dune and shingle vegetation is present fringing the shingle beach to the south of Dunwich Heath. This vegetation is sensitive to the effects of trampling.		There are several public rights of way within and encircling the site where the general right to walk a dog off lead still applies, including the main paths heading from Dunwich Heath car park towards Minsmere. Signage about the sensitivities of the site and the requirement to keep dogs on a lead is clear. As the cark park is large and well used, in sight of National Trust offices and staff, visitors are more likely to follow the behaviour of existing users (such as putting dogs on leads) rather than make their own decisions. However, the open nature of the heath may still encourage people to let dogs off the lead with the potential to disturb ground nesting birds.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Paths are well signposted and dog litter bins are provided. Mountain bikes and horses are not allowed on the heath.			An increase in use of the site could lead to further trampling of sensitive vegetated shingle habitat.
R. **Eels Foot Eastbridge**	Estimated combined capacity of 63 car parking spaces including about 50 at the Eels Foot Inn Car Park The Minsmere Sluice and coast can be accessed via a public footpath that runs adjacent to and south of the Minsmere New Cut. The Suffolk Coastal Path can be joined at the coast. The Sandlings Walk runs directly through Eastbridge Village. Given proximity to the coast via Minsmere New Cut and Sluice, the RSPB Reserve and access to the Sandlings Walk, combined with the facilities of the Eels Foot Inn, this access point is a popular destination for walking particularly with dog owners. There is no evidence of advice to dog owners.	Habitat in the vicinity of Eastbridge is primarily farmland, with small pockets of mixed woodland, and marshland and reedbeds to the north. Eels Foot Eastbridge is not part of a designated European site but can provide access to Minsmere-Walberswick SPA, notably Minsmere RSPB reserve, to the north via the Sandlings Walk. Also, the footpath between Eastbridge and the coast at Minsmere runs adjacent to the SPA boundary and RSPB Reserve for approximately 400m, whilst it also transects areas of lowland grazing marsh, including in	1.7-20.1%	**Birds:** There is potential for increased disturbance to designated SPA populations using wetland habitats, although the footpath from Eastbridge to the coast at Minsmere is already heavily used and, as such, disturbance effects immediately adjacent to the footpath are likely to be manifest under baseline conditions.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
		the Minsmere South Levels, which are important for wintering and breeding birds, some of which form part of the designated SPA populations.		
S. Aldringham Walks (off B1353 north of Thorpeness)	A small, informal free public car park managed by the RSPB. Provides access to a series of footpaths, Open Access Land and heath that forms part of Aldringham Walks (part of the Sandlings SPA) An information board gives background information on the local environment and includes a request for visitors to keep to the footpaths and keep dogs on the lead. A litter bin is provided but no dog bins. The car park is not marked on the map and is more likely to be used by those with local knowledge, rather than tourists.	**Breeding nightjar and woodlark** Extensive path network and access to woodland and open habitats. People likely to let dogs off the lead. This has the potential to disturb ground-nesting woodlark and nightjar.	1.5-5.8%	**Birds** This car park is small and has a low capacity to accommodate additional recreational usage. There is a well-defined path network. However, the discrete and informal nature of the car park and the open nature of parts of Aldringham Walks suggest that users may be encouraged to wander freely and to allow dogs off lead. This may lead to areas of habitat currently subject to limited disturbance being accessed, causing an overall increase in

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
				disturbance levels to ground nesting birds.
T. **Thorpeness Village**	There is a limited amount of on-road parking within the village of Thorpeness and visitors are directed towards the pay-and-display car park at the eastern end of the village. The car park provides direct access to the beachfront at Thorpeness which is popular for a range of activities including swimming, fishing and dog walking. It is also possible to walk to parts of Aldringham Walks and Sandlings SPA via two footpaths leading west from the village, and along the Suffolk Coast Path to the north. However, the majority of visitors to Thorpeness are likely to access the beach and facilities within the village rather than walk inland The Thorpeness beach and car park is managed by the Suffolk Coastal District Council.	**Breeding nightjar and woodlark** Heathland, woodland and scrub habitats at Aldringham Walks to the west of Thorpeness support ground nesting woodlark and nightjar, although this would entail a (4-5km circular) walk from this location.	8.6-37.1%	**Birds:** Thorpeness and the northern end of Aldeburgh are close to the Sandlings SPA, The majority of people are likely to access the beach rather than undertake a long circular walk to access parts of Aldringham Walks and North Warren. The potential risk of increased disturbance to SPA designated interests from additional usage of these sites is therefore considered to be low. It is considered that this well-used site has a moderate potential to accommodate additional recreational usage, although this could be

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Information boards in the car park provide background information about the area; including specific information on visitor rights and responsibilities with regard to open access land and dogs in the countryside. There are restrictions on dogs using parts of the beach (May to September). General waste and dog litter bins are provided for public use Although not located within an SPA, rope fencing has been used at Thorpeness to reduce disturbance to shingle vegetation. Thorpeness beach and village were identified by 3.9% of survey respondents (the highest percentage for any one site) as an alternative recreation location. The popularity of Thorpeness as an alternative site probably reflects the proximity of the location to Leiston, where many of the local users of the Sizewell area are likely to originate from, as well as the fact that a similar recreational experience to that of Sizewell Beach can be gained here.			constrained by car parking provision, especially during the summer months.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
U. Aldeburgh (lay-by to north of town)	Free parking for approximately 8 cars. There are no visitor facilities or signage and it is unclear who has responsibility for managing car parking. The lay-by provides direct access to the beach south of Thorpeness. It is also possible to do a circular walk to parts of Aldringham Walks and RSPB North Warren Nature Reserve (Sandlings SPA), although this would entail a lengthy (4-5km) route There is an information board at the entrance to the North Warren reserve but no advice for dog walkers	**Breeding nightjar and woodlark** It is possible to do a circular walk to North Warren Nature Reserve and parts of Aldringham Walks, where the heath and woodland and scrub habitat supports ground nesting woodlark and nightjar, although this would entail a relatively lengthy (4-5 km) circular route. **Wintering wetland birds (Minsmere to Walberswick SPA)** From the lay-by, the Suffolk Coastal Path cuts across the coastal floodplain and grassland to the west. This habitat is used by wintering wildfowl, including white fronted goose, which is an interest feature of the Minsmere to Walberswick SPA and therefore this site may be functionally linked to the SPA.	6.2-13%	This site has limited potential to accommodate additional recreation usage due to the low capacity of the lay by. Users of this car park are most likely to be accessing the beach rather than the heathland and wetland habitats of North Warren. If accessing the North Warren reserve, visitors are most likely to use the well-defined Suffolk Coastal Path, which is screened and fenced off from surrounding coastal grazing marsh, this reduces the potential for users to access the floodplain grassland and as a result disturbance is considered to be unlikely.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
V. Aldeburgh (car park north of village)	A large pay-and-display car park at the northern edge of the town with an estimated capacity at 250-300 cars. The car park provides direct access to the shingle beach north of Aldeburgh. Thorpe road car park is managed by the Suffolk Coastal District Council and forms part of the wider Suffolk Coast and Heaths AONB. An information board in the car park provides background information about the area; including information on wildlife, local reserves, facilities and access. Dogs are welcome but requested to be kept under close control to avoid disturbance to sensitive wildlife. General waste and dog litter bins are provided for public use. For the most part, visitors are free to walk anywhere on the beach; although a limited amount of rope fencing and accompanying interpretation signage is apparent at some points of the year to protect shingle beach vegetation. A popular site providing direct access to the beach. Aldeburgh was identified by 2.9% of survey respondents as a site to which they would relocate.	The beach does not form part of a designated European site.	6.2-13%	Whilst it is possible to access North Warren from this location, this involves a lengthy walk. The majority of people will simply access the beach (particularly dog walkers), The site has a high potential to accommodate additional recreation usage, limited only by existing car parking provision.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Easy access to the beach with the provision of significant car parking capacity (Thorpe Road) is considered to be a major draw for people, particularly those wishing to walk dogs off lead.			
W. Aldeburgh (car park south of village)	A large car park, in excess of 200 cars plus coaches, located at the southern edge of the town open to the public throughout the year. The car park is managed by Suffolk Coastal District Council and forms part of the wider Suffolk Coast and Heaths AONB. There are a further estimated 200 spaces along the coast southwards towards Martello Tower. Dogs are not permitted on the beach between 1 May and 30 September; this is clearly signposted.	**Wintering wetland birds** This area of car parking allows access to part of the Alde-Ore estuary SPA and in theory to the shingle spit extending southwards to Orfordness. The intertidal habitats of the Alde-Ore estuary at this location provide habitat for designated wintering waterbird populations.	6.2-13%	From this location, access is largely restricted to the beach at Aldeburgh and to permissive paths running around Aldeburgh Town Marsh. A large marina / boat mooring area is present at Slaughden, indicating that disturbance levels in the estuary at this location are already likely to be relatively high. The National Trust enforce access restrictions to Orfordness along the shingle spit, and only a short circular walk is possible along the banks of the Alde-Ore estuary.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	A public footpath runs along a short section (approximately 3-4km) of the banks of the Alde-Ore Estuary, before turning back inland to Aldeburgh. The National Trust manages Orfordness and has erected signage, fencing and vehicle barriers to prevent casual public access to the area. Public access is restricted to specific open days via a boat from Orford.			This location has potential to accommodate additional recreational pressure with only limited constraints placed on use by car parking.
X. **North Warren Nature Reserve**	There is a small free car park (eight cars) at North Warren. It provides access to the local right of way network which connects with an area of Open Access Land and heath. The car park is managed by the RSPB and contains information boards relating to the North Warren Nature Reserve and specific information on the use of Open Access Land. Dog litter bins are provided.	**Breeding nightjar and woodlark** Open access to the adjacent heathland may encourage people to let dogs off the lead. This has the potential to disturb ground-nesting woodlark and nightjar.	0.6-4.8%	**Birds:** This car park is small and has a low capacity to accommodate additional recreational usage. There are a few well defined paths, but the heath vegetation is quite short making it easy to wander freely across the site. The discrete nature of the car park means that users are not under scrutiny and are more

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
				likely to make their own decisions (such as letting the dog off the lead) rather than follow the example of other users or available guidance / restrictions. An increase in recreation usage could potentially lead to usage of areas of habitat not currently subject to high levels of disturbance, thus increasing overall disturbance pressure.
Y. **Alde-Ore Estuary SPA (Sailor's Path)**	A small free public car park (five cars) located on the Saxmundham Road east of Aldeburgh, not signposted although indicated on Ordnance survey maps. An information board and additional signage provides background information on the local environment and includes specific information relating to the Sailors path and the SWT Hazelwood Marshes reserve.	**Wintering wetland birds** This small car park allows access to the SWT Hazelwood Marshes reserve and a bird hide, part of the Alde Ore Estuary SPA and the wintering bird assemblage, in particular, that this part of the estuary supports. Following a coastal surge in 2014, Hazelwood marshes is now an area of intertidal mudflat and developing	0.4-3.2%	**Birds** The Sailor's Path skirts around the northern edge of Hazelwood Marshes and then runs approximately 200-400m inland of the estuary as far as Snape. It is highly unlikely, due to the presence of woodland and scrub vegetation and the topography of the area that walkers along the Sailor's Path would be visible to birds feeding

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	No specific advice on dogs on information panel or facilities provided. The Sailors' path leaflet available locally states: "Dogs are very welcome, but please keep them under close control at all times and on lead as advised".	saltmarsh as opposed to coastal floodplain grassland, thus, restricting access.		on the mudflats or roosting on the upper shore.
Z. **Snape Warren**	Estimated car park capacity of eight cars, not signposted or shown on Ordnance Survey maps. Direct access to Open Access Land and unsurfaced public rights of way. The car park at Snape Warren gives direct access to lowland heath (part of the Sandlings SPA). It also allows access to the Sailors' Path (east) following the Suffolk Coast Path linking Aldeburgh and Snape. Heading east for 4km via Black Heath Wood gives access to the SWT Hazelwood Marshes reserve, part of the Alde Ore Estuary SPA/SAC. The Sailors' Path is set back from the edge of the estuary and screened by woodland and other vegetation along most of its length. Heading west, the Suffolk Coast Path runs along the riverbank at the head of the	Habitat in the vicinity of the car park comprises an extensive area of heather dominated heath. **Sandlings SPA** There is direct access to open lowland heathland at Snape Warren, which supports qualifying features of Sandlings SPA, namely breeding woodlark and nightjar. **Breeding and wintering wetland species** Access along the northern edge of Hazlewood Marshes and the western edge of the Alde-Estuary,	1.0-3.2%	**Birds** There is potential for increased disturbance to heathland nesting birds (through open access onto the heaths) and to breeding and wintering birds using wetland and estuarine habitats. However, the car park is small and is likely to have low capacity to accommodate additional recreational use. The natural screening along much of the Sailor's Path will reduce risk of increased disturbance to the designated bird populations associated with Alde-Ore Estuary SPA.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	estuary to Snape Bridge. Snape Warren is relatively open in places, with dense heather. No information to dog owners on longstanding AONB general information panel; RSPB information panel states “Please keep to the footpaths and keep dogs on leads”. Recent National Trust signage about grazing requests that dogs are kept “on a short lead and under control around the sheep”.	near Iken, has the potential to disturb qualifying features of the Alde-Ore Estuary SPA using intertidal mudflats and saltmarsh in proximity to the paths, including breeding avocet and marsh harrier and wintering avocet, redshank, ruff and other waterbirds.		
AA **Snape Maltings**	The complex at Snape Maltings (a privately-owned estate that provides extensive visitor and parking facilities associated with a retail complex) includes a large free car park (80-100 cars) and about eight off-road spaces to the south. Located next to the Alde-Ore Estuary and provides access to the northern section of the estuary via the Suffolk Coastal Path (access points Z and Y) and a shorter circular walk along the north bank of the estuary and RSPB Snape Warren Reserve (part of the Sandlings SPA). To the south access is possible as far as the picnic site and the car park at Iken (access point BB).	**Wintering waterbirds** Wintering waterbirds use the intertidal mudflat and saltmarsh habitats of the upper part of the estuary.	1.0-3.2%	**Birds:** Access from this location to the banks of the Alde – Ore estuary is limited. The path from the car park at Snape Maltings is well defined and set back some distance from the Alde-Ore estuary with access available only as far as Iken Hall. This limited accessibility to the estuary and distance of users from habitats used by waterbirds would localise the potential for visitors to cause

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	There is limited signage relating to the Alde-Ore Estuary. Advice to dog owners restricted to a sign on one of the public footpath fingerposts stating, “Keep dogs under close control”.			disturbance to wintering waders and wildfowl to a small section of the estuary. It is also possible to access Snape Warren (part of the Sandlings SPA) from Snape Maltings but this requires a 1 km section of road walking.
BB **Iken Picnic Site**	The grassy car park at Iken has capacity for approximately 100 cars, with picnic facilities (tables). It is signposted and shown on Ordnance Survey Maps; closed between dusk and 9am. Direct access to rights of way extending along the southern edge of the Alde Ore Estuary to west and east. OS map shows public footpath extending across the estuary to the north; however, it appears this path will become waterlogged and impassable. It is also possible to access heather dominated heath at Blaxhall Common (part of Tunstall Forest) but this	**Wintering waterbirds** Wintering waterbirds use the intertidal mudflat and saltmarsh habitats of the upper part of the estuary.	0.6-4.8%	Access from this location to the banks of the Alde – Ore estuary is limited. This and the distance of users from habitats used by waterbirds would localise the potential for visitors to cause disturbance to wintering waders and wildfowl to a small section of the estuary.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	would involve a circular walk of approximately 4km and walking along minor roads. No advice to dog owners.			
CC **Tunstall Forest**	Capacity estimated 200 cars at car parks and off-road parking spaces. Direct access to Open Access Land , consisting of blocks of commercial coniferous plantation with areas of heathland and acid grassland. The forest is managed by the Forestry Commission. A popular destination with well-developed path networks including the Sandlings Walk and Suffolk Coast Path. There are walking trails, a mountain bike trail, picnic sites, interpretive signage, BMX bike park at Sudbourne Woods. Information online says dogs are welcome. Signage erected by Blaxhall Parish Council and the Suffolk Wildlife Trust states dogs should be on a short, fixed	**Breeding nightjar and woodlark** Breeding populations of nightjar and woodlark. The birds use areas within the plantations that have recently been felled or planted, as well as areas managed as open ground.	1.6-4.8%	**Birds:** A popular recreational resource supporting large numbers of visitors, including dog walkers, walkers and cyclists. Analysis of the spatial intensity of visitor use and nightjar and woodlark breeding territories at Tunstall (and Rendlesham, access point FF below) shows that recreation pressure may have influenced the distribution of nightjar breeding territories but appears to have had no significant influence on woodlark (Ref. 3.14). A small increase in overall annual visitor numbers would be

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	lead between 1 March and 31 July and at all times near livestock. Open access signage states that the latter restrictions do not apply on public rights of way. Signs in other locations state to keep dogs under close control and flick dog poo off paths with a stick.			unlikely to change the existing intensity of use to such a degree that further change to the distribution or density of breeding territories of both species would be expected.
DD. Butley	Two car parking access points on the west side of the estuary. One at RSPB Boyton Marshes nature reserve where there are approximately 10 spaces. A second near Chapel St Andrew at the western end of a footpath signposted to Butley Ferry where there are a further 10 spaces. Footpaths lead from both car parks to the Suffolk Coast Path which runs along the western edge of the Alde-Ore and Butley Estuaries SAC and the Alde-Ore Estuary SPA/Ramsar from south of the Butley Ferry. People visit Boyton Marshes to view wildlife on the nature reserve (outside the European Site) and also walk along the Suffolk Coast Path on the edge of the European Site. The car park near Chapel St Andrew offers walks to the Suffolk Coast Path and south to	The access points are not within a designated European site. **Breeding and wintering estuarine birds** Access via the Suffolk Coast path, which runs adjacent to the Butley and the Ore and alongside saltmarsh and intertidal mud habitats, may lead to increased disturbance to qualifying features of the Alde-Ore Estuary SPA, including breeding / wintering avocet and wintering redshank, ruff and other waterfowl. There is no foot access to Havergate Island or direct access to Orford	0.2-9.5%	**Birds:** There is some potential for increased disturbance to breeding and wintering waterbirds associated with the Alde-Ore Estuary SPA from the increased access to the Suffolk Coastal Path.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Boyton Marshes and beyond, or north to Chillesford. A public footpath and cycle route leads from the car park to Butley Ferry which is only open in the summer on weekends and bank holidays; it crosses the Butley River where paths and roads lead to Orford. At the entrance to Boyton Marshes nature reserve a temporary notice has been erected asking dog owners to keep pets under close control as they pass the flooded area due to the proximity of nesting avocets, and a permanent sign asks dog walkers to clean up dog faeces. At Chapel St Andrew signs ask owners to keep dogs on leads at all times, although no reason is given nor is the extent of the restriction clear.	Ness from Boyton or Chapel St Andrew, so breeding Sandwich terns, little terns and lesser black-backed gull are unlikely to be affected by any increase in the use of these car parking sites.		
EE. **Orford**	The main pay and display car park has an estimated capacity of almost 200 cars. There are other spaces within the town and at the quay, and at Orford Castle (managed by English Heritage).	**Breeding and wintering estuarine birds** There is a public footpath which runs from Orford adjacent to the Ore and alongside a narrow section of saltmarsh and intertidal mud habitat	0.8-2.6%	As there is constrained and limited access to the protected sites from Orford, the potential impact on the site from an increase in visitors is considered to be minimal.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Access into the Alde-Ore and Butley Estuaries SAC, the Alde-Ore Estuary SPA/Ramsar and the Orfordness-Shingle Street SAC is restricted to boat trips along the River Ore, ferry crossings at certain times of year from Orford, footpaths along the northern bank of the River Ore, and public footpaths with promoted cycle route connecting to Butley Ferry which crosses the Butley River to the west (operating at certain times of the year). Access opportunities into the European Sites are therefore constrained. Footpaths run along the bank of the River Ore to the north and south of Orford. A road and footpaths route connects to Butley Ferry to the west as described at access point DD. Access to Orfordness is restricted to ferry crossings described above. A sign on the edge of the quay says no dogs on the beach between 1st May and 30th September, although the spatial extent of the restriction was unclear. Online information indicates that dogs (apart from assistance dogs) are not allowed on the ferry to	on the west bank of the river. Access may disturb qualifying features of the Alde-Ore Estuary SPA, including breeding / wintering avocet and wintering redshank, ruff and other waterfowl. **Coastal Lagoons** Limited access to the coastal lagoons except for along public footpaths with promoted cycle route to the ferry. Coastal lagoons have Low sensitivity to pressures from trampling causing disturbance to surface and shallow sub-surface of the foreshore. Low sensitivity to litter. **Annual vegetation of drift lines and Perennial vegetation of stony banks** Likewise, for the lagoons, there is limited access to the qualifying		The majority of visitors to the area are there primarily for the ferry and sightseeing on river trips. This minimises direct access to sensitive habitat.

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Orfordness, although this is not stated on National Trust signage on the quay.	feature from Butley. The qualifying feature is not sensitive to litter. The feature is sensitive to trampling effects, although these are limited due to the constrained access to the SAC.		
FF **Rendlesham forest (incl. Sutton Heath)**	Capacity estimated 450 cars at car parks and off-road parking spaces. Some are shown on Ordnance Survey maps. The main car park in the centre of Rendlesham Forest and a smaller car park on the approach to it are pay and display, other car parking areas are free, including at Sutton Heath. Direct access to a variety of routes across the forested and heathland areas. Primary access is taken along well-worn paths and rides with a variety of circular routes available. The Sandlings Walk passes through the site. Visitor facilities include walking trails, cycling trails, orienteering trails, a bike park, bike hire, horse riding, play areas, picnic areas, BBQs, a mobile café. There is also a public convenience and information centre.	**Breeding nightjar and woodlark** Breeding populations of nightjar and woodlark. The birds use areas within the plantations that have recently been felled or planted, as well as areas managed as open ground.	1-2.9%	**Birds:** A popular recreational resource supporting large numbers of visitors, including dog walkers, walkers and cyclists. Analysis of the spatial intensity of visitor use and nightjar and woodlark breeding territories at Tunstall (and Rendlesham, access point FF below) shows that recreation pressure may have influenced the distribution of nightjar breeding territories but appears to have had no significant influence on woodlark (Ref. 3.14). A small increase in overall annual visitor numbers would be

Site	Summary of Facilities / Attributes	Ecological sensitivities	Estimated increase in Visitor Numbers (realistic and upper range estimates)	Potential effect of increase in recreational disturbance pressure
	Across the range of car parks and other access points, a variety of signs and panels give different messages including: “Keep your dog on a lead from March 1st to July 31st”; “Keep dogs on lead”; “Keep dogs under close control”; “ Dogs on lead please”; “No messing about. Please bag it and bin it”. In the main car park in the centre of Rendlesham Forest, signage requested: “Please keep your dog on a lead in play areas and the car park area. Do not allow them to foul these areas. Dogs should be under control on Forestry Commission land at all times. Please take note of ‘no go’ areas for dogs where applicable”. Signage also indicates areas where sled dogs are trained, requesting that other visitors “keep your dog under control and allow sled dog teams to pass safely”.			unlikely to change the existing intensity of use to such a degree that further change to the distribution or density of breeding territories of both species would be expected.

4.4 Minsmere to Walberswick SPA and Ramsar

4.4.1. This large designated site can be split into two distinct areas separated by Dunwich Forest. Immediately north of Sizewell is an area which includes the RSPB Minsmere Reserve, Dunwich Heath, Westleton Heath and Walberswick NNR.

a) Minsmere

4.4.2. Minsmere / Eastbridge was given as a potential displacement location by a significant number of visitors in the Sizewell area (**Table 2.1**), although it is unclear precisely where respondents to the survey would relocate to in the Minsmere / Eastbridge area. However, it is considered likely that a significant proportion of those who said that they would be displaced to Minsmere, particularly if local to the Sizewell area, would relocate to sites on the periphery of the RSPB Reserve (e.g. the informal car parks, access points O on **Figure 001**, north of Eastbridge), rather than the main reserve itself, as such locations would provide access to the local footpath network without having to access the main Reserve. While dogs are allowed at the RSPB Minsmere visitor centre they are not permitted within the main Reserve and local dog walkers would therefore be more likely to use the peripheral footpath network. The RSPB 2015 visitor survey suggested that 27% of visitors to the main reserve could seek alternative sites to visit during construction of SZC.

4.4.3. The majority of the wetland bird (wintering and breeding) SPA interest in this area is present within the main RSPB Reserve. Access here is controlled and restricted to a well-defined set of screened paths and hides in order to minimise potential disturbance pressure to breeding and wintering birds and other ecological interests. The permissive footpath network does not readily provide access to areas of habitat, in or surrounding the Reserve, which support wetland breeding / wintering bird interests. The possible exception is the footpath running from Eastbridge to the coast (access point R, **Figure 005**).

4.4.4. The walk from Eastbridge to the coast is a popular route as it forms part of a circular walk via the coast and Dunwich Heath. Based on the survey results it is estimated that total visits via the footpath route to Eastbridge could increase by 1.6-20.1% (**Table 2.1**). For most of its length, the footpath between Eastbridge and the coast at Minsmere runs 200-400 m south of the Minsmere New Cut which forms the southern boundary to the SPA and the RSPB Reserve. At Minsmere Sluice, the footpath runs adjacent to the Reserve and SPA boundary for approximately 400 m. Direct disturbance to birds within the SPA and Reserve from users of this footpath is unlikely to arise due to the distance from the path. Although largely located outside of

the SPA and the RSPB Reserve, the footpath does run through areas of lowland grazing marsh (e.g. Minsmere South Levels) that are used by wintering and breeding birds, some of which form part of the designated SPA populations. Displacement of visitors from Sizewell to Eastbridge would be unlikely to result in any change in the behaviour of users and activities would effectively be confined to the footpath and the coastal frontage, thus no change in the spatial distribution of visitors is predicted. An increase in the intensity of use could possibly lead to an increase in disturbance pressure immediately adjacent to the route of the footpath. However, given the existing popularity of the path with walkers (an estimate of nearly 40,000 visits per year, **Table 2.1**), disturbance effects are likely to already be manifest and reflected in the frequency and intensity of use of habitats by birds along the route. In this context, the estimated additional level of use is considered unlikely to result in any significant change in the existing behaviour of birds and their use of habitats along the route.

4.4.5. It is also noted that the beach frontage at Minsmere Sluice is well frequented and the adjacent areas of shingle habitat have not been used as a breeding location by little tern for some years. The potential for an increase in recreational use of this section of coast due to the SZC development is highly unlikely to alter this situation.

b) Dunwich

4.4.6. Dunwich Heath, owned and managed by the National Trust, is a popular site that attracts large numbers of visitors throughout the year. The 2014 Sizewell user survey results indicate that Dunwich heath would be one of the preferred locations during construction of Sizewell C to which people would relocate. Of the people who are likely to be displaced to Dunwich Heath, a minority are dog walkers. The management strategies that are currently in operation ensure that the site is well placed to accommodate extra visitors.

4.4.7. As with Minsmere, the existing popularity of Dunwich Heath would suggest that any increase in recreational usage would be unlikely to alter existing patterns of habitat usage by breeding / wintering birds (assuming that management measures currently employed to manage visitors remain in force). Certainly, with regard to ground nesting species such as nightjar that use the heathland habitat, the available evidence indicates that population level impacts would be unlikely to arise with a limited increase in visitor numbers. Only in situations where currently undisturbed or areas of habitat subject to limited disturbance come under increased pressure through the redistribution of people within an area is there the potential for additional significant impact on populations to arise (e.g. Ref. 3.15). This would be considered unlikely to arise given both the high level of recreational use at

Dunwich Heath and the continued implementation of management measures that are already in place.

4.4.8. A significant proportion of the users surveyed indicated that Dunwich village and beach would be a favoured site should they wish to relocate during the construction works. The coast at Dunwich is a popular location with a large car park and visitor facilities (café, toilets) at the beach and a pub in the village itself. Walks along the beach can be undertaken northwards to Walberswick (see section on Walberswick below) or southwards to Minsmere, with a return via Dunwich Heath and the cliff. The beach frontage at the car park and running south towards Dunwich Cliffs is outside the SPA and additional visitor use of this section of beach would therefore be highly unlikely to lead to any increase in disturbance pressure on designated SPA interests. To the north of the car park, the extensive shingle ridge system is backed by the brackish and freshwater wetland habitats of Dingle Marshes (RSPB / Suffolk Wildlife Trust Reserve). Little tern sometimes nest on areas of shingle here and the wetland habitats provide foraging and breeding grounds for marsh harrier, bittern, avocet and shoveler, and support good numbers of waterbirds during the winter months. There is a circular walk around the perimeter of the reserve, but deep ditches and fences essentially prevent access to the majority of the area, thus restricting the potential for effects of disturbance on the designated interests in this area. Given the very limited access to habitats supporting designated SPA interests, a small increase in the number of visitors to the area would be considered unlikely to lead to an increase in recreational disturbance pressure to breeding and wintering birds.

4.4.9. Little tern has recently been the subject of EU LIFE programmes and Lottery funding (RSPB Little Tern Recovery Project / Suffolk Little Tern Project / Touching the Tide) in Suffolk and management measures (e.g. fencing, provision of nest sites) have been implemented at Dingle Marshes and other locations in Suffolk to enhance and maintain the breeding population. As long as appropriate management measures remain in place, it is considered unlikely that a small increase in visitor numbers would alter the existing situation.

c) Westleton

4.4.10. Westleton Heath is less well known than Minsmere and Dunwich. This area of open access heathland can be accessed from four small car parks (Access points M and N, **Figure 005**). Estimated increases in annual visits to this site, based on the visitor survey, are 1.7-11.6% (**Table 2.1**).

4.4.11. It is likely that walkers tend to use the well-defined path network on Westleton Heath and that existing breeding nightjar territories are defined by

disturbance effects associated with this existing pattern of use (Ref. 3.10). Additional use of this path network by a small number of people would therefore be unlikely to alter this pattern of habitat use. It is possible, however, that further use of the area by dog walkers, with dogs off-lead, could increase disturbance levels away from the footpaths, suggesting that there is a risk that disturbance to ground-nesting birds in such areas could arise. The data from the 2014 Sizewell visitor survey suggests that local dog-walkers would be unlikely to venture this far from Sizewell and the likelihood of additional disturbance associated with dog walking above that already occurring is therefore considered to be low. However, it is proposed that existing recreational management measures at Westleton Heath are enhanced to minimise the potential for any increase in disturbance pressure on designated interests resulting from Sizewell C. Such measures may also serve to reduce existing levels of recreational disturbance.

d) Walberswick

4.4.12. To the north of Dunwich Forest, lies a second distinct area within the Minsmere to Walberswick SPA. This comprises Walberswick National Nature Reserve, including Westwood Marshes and Walberswick Common. This area is accessed by larger car parks located at Walberswick and Dunwich village, and a series of smaller car parks surrounding the NNR (**Figure 004**, **Table 4.1**) Displaced visitors who stated 'Walberswick' or 'Westwood Marshes' could, therefore, travel to a number of locations with car parking within or near the northern part of the Minsmere to Walberswick European Site.

4.4.13. From the visitor surveys and including of potential additional visits by construction staff, there would be an estimated annual increase of 1.3-4% in the number of visits to Walberswick (**Table 2.1**) as an alternative location to Sizewell Beach. While survey respondents did not provide specific locations within the Walberswick area to which they might relocate, it is considered that the village and the beach front would be the most likely destination, suggesting that the number of additional annual visits to other locations on the periphery of the village and the NNR would be limited.

4.4.14. Walberswick village and beach is a popular site, with visitor facilities and a well-developed path network (e.g. Suffolk Coast Path) along the beach and through the marshes (Walberswick NNR) to the south. Disturbance pressure on ecological interests will already be present and use of habitat by breeding and wintering birds reflective of this situation. Given this, and the small estimated increase in the number of visitors that may result from the SZC project, an increase in disturbance effects arising in the vicinity of this location is considered to be unlikely.

4.4.15. Small numbers of little tern may occasionally nest on the shingle at the southern end of Corporation Marshes, south of Walberswick Village. The comments given above in respect of the management of breeding little tern and disturbance pressure at Dingle Marshes also apply at this location.

4.4.16. The small car parks around the periphery of the Walberswick NNR provide access to areas of habitat (heathland and wetland) that, due to smaller numbers of visitors, are in relative terms, less likely to be subject to existing recreational disturbance pressure than the immediate coastal frontage. Breeding and wintering birds that use these habitats could therefore be at greater risk of increased visitor numbers and related disturbance due to relatively limited exposure to recreational activities under baseline conditions. However, these areas are managed as nature reserves by Natural England and RSPB/SWT. Access to sensitive areas used by breeding and wintering waterbirds is managed through networks of footpaths and viewing hides, promoted by signage, audio trails and a site leaflet, as well as barriers such as deep-water ditches. The size and location of these small car parks also effectively limits the numbers of people that can access the wider area (i.e. they have limited capacity to support significantly greater usage). In addition, as stated above, the majority of additional visits to the Walberswick area would, in all likelihood, be made to the beach rather than to other locations. Thus the risk of an adverse effect arising from increased visits to the Walberswick NNR via these limited access car parks is considered unlikely.

e) Dunwich Forest

4.4.17. Dunwich Forest (a large area of planted conifers) is located inland of the coast between Minsmere and Walberswick. It is adjacent to but not included within the European designation. It is included here for the sake of completeness. Within the forest, areas of open habitat have been created and are being managed by the RSPB and SWT under management agreements with the FC. These areas support breeding nightjar populations that are considered to be functionally linked to the SPA.

4.4.18. The forest is open access and well served by several large car parks. Dunwich Forest was identified as an alternative location for recreation by a relatively small number of people (4) interviewed as part of the Sizewell visitor survey. This may reflect the fact that it is a woodland site with different recreational characteristics to the open beach at Sizewell, and which would not provide a similar recreational experience. It is also possible that the forest is not a well-known location for recreational use by visitors and possibly locals. However, given the size of the area and existing visitor management measures (**Table 4.1**), and the small number of people who identified this as an alternative location, it is considered that the construction of Sizewell C is

unlikely to result in any adverse increase in disturbance pressure to designated European interests.

f) Overview of disturbance effects on the SPA

4.4.19. Based on the Sizewell visitor survey data, the largest increase in potential use due to Sizewell C is predicted for the Minsmere-Eastbridge area. Construction workers are considered more likely to visit the settlements and beaches at Dunwich and Walberswick / Southwold rather than the Minsmere area. Given restrictions on access to areas of habitat at Minsmere that support SPA wetland species (breeding and wintering) and also existing patterns of visitor use and management regimes, particularly in relation to dog walking, the risk of any additional disturbance pressure being exerted on these SPA populations in the Minsmere area is therefore considered to be highly unlikely.

4.4.20. Ground-nesting birds in heathland / woodland habitats (e.g. the SPA qualifying species nightjar) and coastal shingle (little tern) are susceptible to an increase in disturbance pressure, particularly in areas that are currently exposed to limited recreational use.

4.4.21. Although the susceptibility of the bird populations at Walberswick is considered to be high, the predicted small number of additional visitors to the area combined with the likely predominance of the beach as the preferred location for recreational activity, suggests that an increase in disturbance pressure on wetland (reedbed and grazing marsh) breeding and wintering birds and the nightjar populations of heathland habitats is unlikely to arise.

4.4.22. Little tern is a well monitored species and if breeding attempts are made within (or outwith) the SPA, management measures are currently in place to increase the potential for successful breeding. Subject to the continuation of these measures, it is considered unlikely that a small increase in visitor numbers, likely to be focused on existing well used locations such as Walberswick beach / Dunwich village, would result in an adverse effect.

4.4.23. Access points that provide access to Westleton Heath and other heathland areas within the Minsmere (southern) area of the SPA are highlighted as locations where additional users could potentially increase disturbance impacts on nightjar. In light of this, and the relatively high predicted increases in recreational use of this area, it is proposed that existing recreational management measures for heathland areas within this section of the SPA are enhanced as appropriate to minimise the potential for any increase in recreational disturbance pressure on breeding nightjar and other breeding birds of heathland habitats.

4.5 Minsmere to Walberswick Heaths and Marshes SAC

4.5.1. The HRA Evidence Plan process identified that the potential for greater visitor numbers to the coast could lead to an increase in damage to sensitive vegetation on shingle shorelines, chiefly through trampling. There is a body of evidence (see Section 3.2) that demonstrates that human trampling can adversely affect existing vegetation communities, alter soil conditions and affect recovery – these effects are recognised in the Site Improvement Plan for the Minsmere to Walberswick Heaths and Marshes SAC as trampling is noted as already causing damage to vegetated shingle communities at some intensively visited locations.

a) Walberswick-Dunwich

4.5.2. Access to the beach frontage within the northern part of the SAC can be gained from Walberswick village or from Dunwich village. The car park at Dunwich beach provides direct access to the beachfront and allows visitors to undertake the popular walk along the shingle ridge to Walberswick village. The shingle ridge between Dunwich and Walberswick supports annual vegetation of drift lines and to the rear of this, particularly towards Dunwich, some areas of more vegetated shingle (perennial vegetation of stony banks) is present.

4.5.3. Both the car parks at Walberswick village and Dunwich village are heavily used and there are existing well-defined paths leading from the car parks along and to the rear of the shingle ridge. Given the existing high level of usage and the fact that additional visitors to the car parks would either access the beach directly (for dog walking) or be highly likely to use the existing path network (i.e. follow existing behaviours), further trampling of sensitive shingle vegetation away from existing impacted areas would not be anticipated. This is particularly so given the relatively small predicted increases in overall annual visits to these locations.

b) Dunwich-Minsmere

4.5.4. Access to the beach frontage within the southern part of the SAC (Minsmere-Sizewell) is either through the main Minsmere RSPB Reserve, via the public footpath from Eastbridge, Dunwich Heath and Dunwich village to the north or Sizewell to the south. It is considered unlikely that visitors displaced from Sizewell, particularly dog walkers, would access the beach via the main RSPB Minsmere reserve as payment is required and dogs are not allowed in the main Reserve itself. The route from Eastbridge is relatively long (6km round-trip) with available parking located to the north of the village (or possibly at the Eels Foot Inn). The length of the route suggests that it would

be unlikely to be favoured by local dog walkers requiring access to a beach to let dogs off the lead.

4.5.5. Similarly, the route from the car park at Dunwich village would entail a 6km round-trip. The National Trust car park at Dunwich Heath provides a more direct and shorter access route to the Minsmere frontage, but payment for the car park is required, which may be unappealing to local and frequent users of the existing facilities at Sizewell Beach.

4.5.6. There is already an extensive and well used path network at the back of and within the narrow fringing dune system to the south of Dunwich Heath and the majority of users would be expected to gain access to the beach via this path network. It is considered that it would take a substantial increase in the number of people visiting the beach to cause any increase in the level of damage to the vegetation communities above that which is already occurring.

c) Overview of trampling effects on the SAC

4.5.7. The coastal frontage / beach at Dunwich and Walberswick is already subject to intense visitor use. The SIP for the Minsmere-Walberswick SAC (Ref. 4.1) recognises that there is existing damage to the shingle vegetation at locations where visitor access is greatest, notably the car parks at Walberswick village and Dunwich village.

4.5.8. Additional visitors to these locations resulting from the SZC project would be expected to follow similar behaviours to existing visitors and use the defined path network / beach. Further incursion by people into areas supporting sensitive vegetated shingle habitat would not be expected and additional loss of vegetation as a result of trampling is therefore considered to be unlikely to arise.

4.6 Sandlings SPA

4.6.1. This is a large SPA comprising a number of discrete areas of heathland, acid grassland and coniferous plantations. Within the 8km displacement buffer zone the SPA component area comprises Aldringham Walks, to the south of Sizewell, and North Warren Nature Reserve located to the west of Thorpeness and north of Aldeburgh. Both of these sites are located away from the immediate coast and are more discrete than the sites at Minsmere and Dunwich. As a result, they have fewer visitor facilities and are accessed via a series of smaller and informal car parks.

4.6.2. The large areas of coniferous plantation and heathland at Tunstall / Blaxhall and Rendlesham / Sutton lie outside the 8 km displacement buffer zone but are within or on the 12 - 17 km study area zone. Both Tunstall Forest and

Rendlesham Forest were given as potential alternative locations for recreational activity by respondents to the Sizewell visitor surveys.

4.6.3. Overall, relatively small numbers of visitors (see **Table 2.1**) identified locations within and adjacent to the Sandlings SPA as alternative locations if displaced from the Sizewell area during construction. This may reflect the different experience that these sites would offer to that of Sizewell Beach and / or a potential lack of knowledge of the sites. The relatively small size and informal nature of some of the car parking facilities suggests that, unless developed, these sites would be unlikely to provide significantly increased capacity for additional recreational use.

4.6.4. The Sandlings SPA is designated for its breeding populations of nightjar and woodlark which use areas of clearfell and heathland within the forested and open habitats of the SPA. As discussed in Section 3, breeding populations of both species are known to be susceptible to recreational disturbance pressure, and SPA populations may already be affected by existing levels of visitor. Studies indicate the spatial distribution of recreational disturbance influences the distribution of nesting territories for both species, and that additional pressure on areas that are currently subject to no or limited disturbance is likely to be more detrimental to existing populations than an increase in visitor numbers within areas already subject to disturbance pressure. For woodlark occupying heathland sites in Dorset, there was also evidence that the probably of occupancy of a given area was influenced by the number of disturbance events per hour (Ref. 3.15), so that for this species at least, increase in use of already disturbed areas might have adverse effects on population size.

4.6.5. Ensuring that any additional use is therefore limited, as far as possible, to the existing path network and in compliance with any open access restrictions is therefore considered important for both SPA species.

4.6.6. Analysis of the locations at which visitors are likely to gain access to parts of the Sandlings SPA indicates that the potential susceptibilities to increased visitor usage would vary between locations. The largest predicted increase is at Thorpeness where the majority of visitors are expected to access the beach rather than SPA habitats, and which has extensive facilities and the potential to absorb significant numbers of additional visitors without impacting on the designated interests of the SPA (**Table 2.2** and **Table 4.1**).

4.6.7. Other access locations in the area, such as those for Aldringham Walks and North Warren, which provide direct access to the heathland and forest habitats of the SPA, are more discrete with limited parking capacity. Although because of the nature of the habitat, both sites are more sensitive to potential increases in recreational pressure, the size and location of the small car

parks effectively limits the number of people that can access the wider area at any one time (i.e. they have limited capacity to support significantly greater usage). However, given the discrete nature of these locations, recreational users may be less likely to follow the lead of other users (for example with dogs on leads) and may be more inclined to let dogs off leads and / or undertake activities off defined paths. Data from the November visitor survey shows that such behaviour is already established at Aldringham Walks, where 85% of dogs were observed to be off-lead.

4.6.8. It is apparent from the survey data and the presence of a number of access points for Aldringham Walks that the area is already subject to a significant level of visitor use and access. The location is well used by dog-walkers and the large majority of dogs are off-lead. At worst, a 5.8% increase in visitor use of Aldringham Walks is predicted.

4.6.9. Existing visitor management measures that could reduce overall disturbance pressure on ecological interests at Aldringham Walks are limited, being confined to the provision of information at the car park for the RSPB reserve.

4.6.10. The heathland and acid grassland habitats of the North Warren RSPB reserve forms the southern section of Aldringham Walks-North Warren block of the Sandlings SPA (see **Figure 002**). The RSPB Reserve also encompasses grazing marsh, reedbed and coastal habitats and is substantially larger than the component habitat area designated as part of the Sandlings SPA. The Sizewell Visitor Survey data suggests that, as a result of displacement, there could be at worst a 5.8% increase in annual visits (see **Table 2.2** and **Table 4.1**).

4.6.11. The relatively few well defined paths and open nature of the heath / grassland vegetation promotes access by both people and dogs and relatively undisturbed habitat for both nightjar and woodlark may therefore already be limited at this site. The predicted increase in visitor usage for North Warren is considered to be relatively small and, while it would contribute to the overall level of existing disturbance pressure, the ecological response is unlikely to be different to that which is already manifest. This conclusion should also be viewed in the context of the active promotion of visitor access and use of the North Warren site.

a) Overview of disturbance effects on the SPA

4.6.12. Populations of ground-nesting birds in heathland / open woodland habitats are considered to be susceptible to an increase in disturbance pressure, particularly in areas that are currently exposed to no or limited recreational use. The nightjar breeding population of the Sandlings SPA has declined since classification from 109 breeding males in 1992 (as cited at classification

in 2001) to 81 at the latest available count in 2004 (Ref. 1.6). Table 6.20). The SACOs for the SPA (Ref. 1.6) specify a target to restore the size of the breeding nightjar population to a level consistently above 109 males, while avoiding deterioration from the current level as indicated by the latest mean count or equivalent. It is also stated that the population size at classification may have been enhanced by the extensive area of open habitat created following a gale in 1987 that felled most trees, and a more realistic target is being modelled. More recent data are available from the RSPB North Warren and Aldringham Walks Reserve overlapping with the SPA area closest to Sizewell C, which indicate an increase from two territories in 2010 to five in 2018 (**Section 6.3, Shadow HRA Report** (**Book 5, Report 5.10**)).

4.6.13. While woodlark may be sensitive to disturbance, there is no evidence from the Sandlings to indicate that the intensity of recreational use is having an adverse effect upon the distribution of birds and the capacity of the habitat to support the designated population. In respect of the forests and heaths of the south Sandlings (which probably have higher visitor numbers than sites such as Aldringham Walks), Cruickshanks et al. (2010) (Ref. 3.14) suggest that it is possible that the distribution of people is such that there is "space for both people and birds". However, the level at which recreational pressure may elicit a change in distribution is not known.

4.6.14. The analysis presented above suggests that some access locations (Thorpeness especially) have the potential to absorb significant levels of additional visitors without affecting the designated nightjar and woodlark populations of the Sandlings SPA. Two locations, Aldringham Walks and North Warren, are identified where additional visitor usage caused by the Sizewell C project could have the potential to increase disturbance pressure on ground nesting nightjar and woodlark populations. However, given the present high levels of disturbance at these sites, the small potential increase suggests that disturbance effects would be minimal.

4.6.15. The overall conclusion given the extensive and spatially disparate nature of the habitat comprising the SPA is that an adverse effect from Sizewell C at the level of designated SPA populations is considered to be unlikely. However, it is proposed that existing access management arrangements at Aldringham Walks, and potentially North Warren, are enhanced to minimise the potential for any increase in disturbance pressure on designated interests resulting from Sizewell C. Such measures may also serve to reduce existing levels of recreational disturbance at these locations.

4.7 The Alde-Ore Estuary SPA, SAC and Ramsar

4.7.1. This large estuarine / coastal site extends along the River Alde from Orford to Aldeburgh and then inland to Snape. For much of its length, the River Alde

acts as a physical barrier preventing direct access to the open coast. The main centre for recreational access (and in closest proximity to Sizewell) is to the north of the estuary at Aldeburgh, while Orford acts as a secondary centre of activity adjacent to the estuary. There are also a series of car parks located along the Suffolk Coastal Path at Snape Maltings, Iken and the Sailor's Path (**Figures 007-009**, **Table 4.1**).

4.7.2. Aldeburgh (Access Points V and W, **Figures 007-009**, **Table 4.1)** is a popular and well-established visitor destination. It is considered that the majority of additional visits undertaken by people displaced from Sizewell, to Aldeburgh, would involve activities undertaken on the immediate beach frontage around the town, rather than the estuarine habitats and landscape of the Alde-Ore Estuary. It is considered likely that the majority of respondents were referring to the large car park and shingle beach to the north of the town, rather than the car park at the southern end. Aldeburgh may also be one of the main locations that construction workers visit at weekends given both the attraction of the beach and the facilities available in the town. The car park at the southern end of Aldeburgh (which is further from Sizewell and more difficult to reach) provides access to the shingle beach at Slaughden and it is possible to drive and park along the track as far as just to the south of the Martello Tower. Users are most likely to be accessing the beach rather than the estuary, which here is largely occupied by the marina. The car park also provides access to walks around Aldeburgh Marshes to the west. This is an expansive area with a well-used and defined path network.

4.7.3. It is also considered unlikely that people using the car park to the south of the town would be inclined to attempt to walk down the shingle spit towards Orfordness, given the distance and restrictions put in place by the National Trust.

4.7.4. Existing disturbance pressure to wintering and breeding waterbirds around the estuary will be focused on those locations where access can be easily gained (i.e. there is car parking) and where footpaths run close to the estuary shoreline.

4.7.5. A small increase (1-3.2%) in visitor numbers is predicted for Snape Maltings and Iken (0.6-4.8%) (respectively Access Points AA and BB, **Figure 007**, **Table 4.1)**, the majority of which are likely to be dog walkers. Access to the estuary frontage from both Snape Maltings and Iken is restricted and users are confined to the public rights of ways that run along the estuary to just beyond Iken Hall. For much of its length the footpath running to Iken Cliff is screened from the estuary by vegetation (scrub, trees and woodland) and / or separated from the mudflats by relatively large expanses of saltmarsh. Disturbance of birds using the intertidal area is therefore unlikely to arise.

4.7.6. Access to Orfordness via Orford (Access Point EE, **Figure 008**, **Table 4.1**) is controlled by the National Trust and effectively limited to the capacity of the available boat sailings. Displacement of users to Orford (and then to Orfordness) is therefore not considered to represent an additional potential disturbance pressure on the ecological interests of Orfordness. Similarly, access to Havergate Island is controlled by RSPB.

4.7.7. While increased visitor use at Butley (Access Points DD, **Figure 008**, **Table 4.1**) could lead to increased disturbance to saltmarsh and intertidal mudflats in the Butley and the Ore estuaries, via the Suffolk Coastal Path, this location has the lowest estimated number of annual visits and was identified as a potential alternative location by the smallest percentage of survey respondents (**Table 2.1**).

a) Overview of disturbance effects on the SPA

4.7.8. The Site Improvement Plan for the Alde-Ore Estuaries (Ref. 4.2) highlights that disturbance pressure is a concern at sensitive locations, notably Orfordness and Shingle Street. There is no specific mention in the SIP of disturbance pressure linked to use of the existing rights of way around the Alde estuary. Shingle Street was given as a potential alternative location by just a single user interviewed for the Sizewell Visitor Survey. This site is located outside of the main displacement zone (i.e. 8 km) and given the response rate was not taken further as part of the assessment.

4.7.9. The Alde-Ore Estuary is a large SPA/SAC with relatively few direct access points. The key intertidal habitats used by the designated wintering bird assemblages are remote from or inaccessible via the permissive footpath network. The access locations at Snape Maltings, Iken and Sailor's Path provide limited direct access to the estuary and the habitats that support the wintering SPA populations. A small increase in the number of visits at these locations would be unlikely to lead to any additional disturbance pressure that would have adverse ecological consequences. Increased visitor use in, and around, Aldeburgh would be unlikely to impinge directly upon the estuary, with the focus of any additional activity likely to be the main beach frontage. Access is restricted to a large part of the site (Orfordness, Havergate Island) and is controlled by the National Trust / RSPB. The potential for an increase in disturbance pressure to this controlled area is therefore not predicted to arise.

4.7.10. Overall, it is therefore considered that while there could an increase in the number of visits to some locations around the Alde-Ore Estuary, the limited accessibility to habitats used by breeding and wintering waterbirds indicates that the potential for an increase in disturbance to waterbird populations to arise is unlikely.

4.8 Benacre to Easton Bavents SPA

4.8.1. Although this SPA is within 15 km of Sizewell C (at the closest point), the only access point to the SPA which was identified as a location to which displaced recreational users would relocate to was considerably further from Sizewell C and outside the study area (Kessingland, Access Point A, **Figure 003**, **Table 4.1**). Given that only 4% of the people surveyed considered they would relocate to (any) sites beyond 16 km of Sizewell, the potential for increase in recreational disturbance at this SPA is very low.

4.8.2. The car parks at Kessingland provide direct access to the beach along the seafront and, potentially, to breeding sites for little tern. Other potential access points at Covehithe provide lead to footpaths which are adjacent to habitat of potential importance to breeding marsh harrier and bittern (Access Points B, **Figure 003**, Table **4.1**). However, the low likelihood of even small increases in visitor pressure at this site as a result of relocation means that any increase in recreational disturbance effects on the qualifying features of this SPA is highly unlikely. Additionally, management measures (e.g. fencing) are likely to be in place to protect breeding colonies of little terns.

4.9 Summary and conclusions on potential recreation disturbance effects associated with the Sizewell C Project

a) Construction

4.9.1. Available visitor surveys and studies (see **Annex A**) show that there is already a high level of recreational use of the area and it is likely that disturbance effects upon designated ecological interests are already manifest. The Suffolk coast is an important visitor / recreation destination and quiet enjoyment of the landscape and the significant opportunities that the area has to offer to connect with the natural environment is actively promoted. In this context, without continued and enhanced management, the pressure on ecologically sensitive habitats and species through recreational use is likely to increase and further disturbance pressure on ecological interests could arise.

4.9.2. Visitor surveys for the Sizewell C Project have identified that up to 30% of existing recreational users (mainly walkers and dog walkers) within the Sizewell area would wish to relocate to other sites in the vicinity during the construction phase of the development. This would represent a spatial change in the pattern / intensity of use of recreation sites by existing users. Additionally, the influx of construction workers to Sizewell will generate an increase in annual visits during the construction phase. It is considered likely

that the focus of visits by construction workers will be to coastal settlements rather than areas comprising habitats forming part of designated sites.

4.9.3. The Sizewell visitor survey data indicates that people would relocate widely in the local area and any additional disturbance would in all likelihood be diffuse. However, the proximity of the Minsmere to Walberswick SPA / Ramsar site and SAC, the Sandlings SPA, Alde-Ore Estuary SPA and Ramsar site, and Benacre to Easton Bavents SPA to Sizewell, increases the potential that the designated ecological interests of these sites could be affected by altered patterns of recreational use. The existing level of recreation in these European sites is likely to be already influencing the spatial distribution of breeding territories of ground-nesting birds, the intensity of use of foraging areas by breeding and wintering birds and localised loss of sensitive coastal vegetation.

4.9.4. Predictions from the visitor survey data and the likely recreational behaviour of the construction workforce for Sizewell C indicates that increases in the intensity of recreational use of European sites as a result of the project would be small (generally being less than 5% under both the realistic and upper range estimates) although there are a few exceptions where higher levels are predicted, notably for the outer periphery of the Minsmere RSPB reserve (**Table 2.1**).

4.9.5. Over areas of open access land, additional disturbance pressure could have an adverse impact on nesting densities of ground-nesting birds. This is more likely to be the case at sites that are currently subject to low levels of recreational use and, therefore, where existing disturbance pressure may be limited. Sites where this applies are Westleton Heath and other heathland areas within the southern (Minsmere) part of the Minsmere-Walberswick SPA, and some areas of forest / heathland at Aldringham Walks and North Warren in the Sandlings SPA.

4.9.6. While available evidence indicates that recreational activities may cause disturbance to wintering and breeding waterbirds, the combination of the relatively small increase in visitor pressure resulting from the Sizewell C project, habitat inaccessibility and existing management controls indicate that additional significant disturbance pressure on the designated populations of waterbirds and other species (notably marsh harrier) of the Alde-Ore Estuary SPA, Minsmere to Walberswick SPA and Benacre to Easton Bavents SPA would be unlikely to arise.

4.9.7. While overall it is considered that the risk of additional disturbance effects due to changes in recreational pressure generated by the Sizewell C Project is, in the context of existing activities and their effects, relatively low, there still remain, at this time, uncertainties about the specific nature of the

response of recreational users and also the role that the construction workforce may play in increasing overall levels of recreation activity in the wider area. Taken against a background of potentially increasing demand for, and promotion of, recreational space and facilities in the countryside, the potential for the Sizewell C Project to contribute to existing levels of recreational disturbance pressure at a few locations is acknowledged. With the exception of breeding nightjar within the Minsmere-Walberswick SPA (Westleton Heath and other heathland areas within the southern (Minsmere) part of the SPA), and breeding nightjar and woodlark in the Sandlings SPA (Aldringham Walks and North Warren) it is, however, considered unlikely that the influence of the SZC project on recreational activity and associated disturbance pressure would result in any significant SPA designated population level impacts or increase the extent of damage to SAC designated coastal habitats.

4.9.8. An in combination assessment of the potential for increase in recreational disturbance is included in the Shadow HRA Report (**Book 5, Report 5.10**). A number of mixed residential developments have been identified with the potential for in combination effects with Sizewell C. However, these developments would be covered by the Suffolk Recreational Disturbance Avoidance and Mitigation Strategy (RAMS) (Ref. 4.3), or project-specific mitigation commitments. Therefore, it is considered that there is no potential for an in-combination effect due to potential increases in recreational pressure with the activities of the Sizewell C Project. Whilst the Suffolk RAMS is not directly applicable to the Sizewell C Project, EDF Energy is committed to the principles outlined within the Strategy and would adopt a similar approach to mitigate for any potential impacts. Such an approach would be secured via a monitoring and mitigation plan/agreement with relevant organisations/site managers to the European Site in question.

4.9.9. Proposed enhancements to recreational management of heathland areas at Minsmere-Walberswick SPA (for nightjar at Westleton Heath and other heathland areas within the southern (Minsmere) part of the SPA), and the Sandlings SPA (for breeding nightjar and woodlark at Aldringham Walks and North Warren) would be taken forward under a Rights of Way and Access Strategy for Sizewell C. This has been designed to minimise the displacement of people away from the proposed development area and minimise the potential displacement to nearby European sites to minimise disturbance to ground-nesting bird species and trampling of vegetation. A monitoring programme would be developed for recreational displacement and to identify local mitigation measures, to be agreed with local land managers, which could be introduced to further reduce recreational disturbance.

b) Operation

4.9.10. There is the potential for the recreational response of visitors to construction to be maintained through into operation of Sizewell C. If this were to occur, displacement of recreational users from the Sizewell area to the alternative locations adjacent to and within the designated European Sites under consideration would continue. There is also the potential for the operational workforce for Sizewell C to make recreational use of European Sites, including during periods of temporary increase in the workforce to cover planned outages.

4.9.11. Measures will be taken to restore and improve the access and recreation resources and landscape that may be affected by the construction of Sizewell C, which EDF Energy will seek to agree with consultees through consultation, and which will be described in masterplan, landscape and PRoW and access strategies.

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ANNEX A: RECREATIONAL DISTURBANCE EVIDENCE BASE

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1. Introduction

1.1.1 This report presents the evidence base for assessing potential disturbance effects on designated European Site ((Special Protection Areas (SPAs), Special Areas of Conservation (SACs)) and Ramsar sites) interests caused by the potential displacement of recreational users, from existing outdoor recreational resources at and around Sizewell, and by the arrival of construction and operational workers, during the construction and operation of Sizewell C nuclear power station (SZC).

1.1.2 The report:

- describes the baseline including identification of the European Sites that may be affected and the existing recreational use of the area (Section 2);
- describes the potential increase in recreational users, including construction workers, at European Sites caused by the construction of SZC (Section 3);
- describes the potential increase in recreational users at European Sites caused by SZC during the operational phase (Section 4); and
- presents a summary of the recreational and access environment of the European Sites that have potential to be affected (Section 5).

1.1.3 A summary and conclusions are given in Section 6. Documents and web sites referred to in this report are listed in Section 7. Figures, comprising plans of the European Sites and their context, are included in Appendix A. An online map of Minsmere Trails and an access map of the Minsmere Reserve provided by the RSPB are included in Appendix B, along with existing visitor survey data for the Minsmere Reserve provided by the RSPB in Appendix C. Appendices D and E contain research and analysis information that has been used to inform assessment in relation to dog numbers. Two reports of surveys of visitors to informal outdoor recreational resources in the vicinity of SZC referred to in this report, undertaken on behalf of EDF Energy, are included in Volume 2 Chapter 15 Appendices 15A and 15B (Doc Ref. 6.3) of the Environmental Statement (ES) for SZC.

1.1.4 The information contained within this report will be used to inform the Habitats Regulations Assessment (HRA) that will consider the potential for recreation disturbance caused by the construction and operation of SZC.

2. Description of Baseline Conditions

2.1 Introduction

2.1.1 This section describes how the study area was defined (Section 2.2), identifies those European Sites which are located within the study area, whether fully or in part (Section 2.3) and then provides a desk-based review of existing recreational visitor survey information produced since 2003 that is relevant to the SZC project (Section 2.4) before summarising the key points that can be concluded from recreational visitor surveys that were undertaken specifically for the SZC project (Section 2.5). The recreational visitor baseline is summarised in Section 2.6.

2.1.2 Within the study area there is a diversity of recreational resources. The Suffolk coastal landscape contains the Suffolk Coast Area of Outstanding Natural Beauty (AONB), extensive beaches, estuaries, farmland, woodland, habitats and wildlife, a network of public rights of way and access land, plus permissive linear and area access (including public footpaths, cycleways, bridleways and unclassified county roads). Promoted routes include the Suffolk Coast Path and Sandlings Walk which run through the Suffolk Heritage Coast and coastal towns, villages and the wider countryside. Many users of these recreational resources visit European Sites for a range of activities including walking, dog walking and watching wildlife. The resident and visiting populations in Suffolk are likely to increase over the lifetime of SZC for reasons unrelated to the power station, including planning policy, initiatives and projects that require or encourage growth, as well as natural population growth.

2.1.3 The strategies for growth within East Suffolk are set out in the East Suffolk Economic Growth Plan covering the period 2018 - 2023 (East Suffolk Council, 2018). The new Suffolk Coastal Local Plan is being prepared by East Suffolk Council and once adopted in November or December 2019, will cover the period up to 2036. The existing Suffolk Coastal District Local Plan Core Strategy & Development Management Policies document (Suffolk Coastal District Council, July 2013) identifies how population and housing have grown in the past, and how it is planned that they will grow in the future, and emphasises the importance of the environment and tourism to the District::

- “in the last 30 years the district has seen its population rise by around 26,000” (29%) (para 2.08)
- “over the past 40 years, the average build rate per annum has been around 600 [dwellings] per annum across the district” (para 2.08)

- tourism is a major driver for the local economy (para 2.20)
- "tourism is good for the economy, but the environment and local communities are sensitive to visitor pressure" (para 2.27)
- "the exceptional quality of the natural, historic and built environment makes Suffolk Coastal a very special place to live and work and a popular destination for visitors and tourists from the UK and abroad" (para 2.40)

2.1.4 Strategic Policy SP2 – Housing Numbers and Distribution of the Local Plan Core Strategy & Development Management Policies document requires significant housing growth stating:

> *"The Core Strategy will make provision for at least 7,900 new homes across the district in the period 2010 to 2027….*
>
> *Further provision of new homes is expected to come forward across the plan period by means of windfall provision…… It is anticipated that this unidentified provision could amount to around 50 homes per year."*

2.1.5 The Suffolk Tourism Strategy 2013 – 2023 (Suffolk Coast & Heaths Partnership and the Suffolk Coast Destination Management Organisation, June 2013) sets out a strategy with key objectives and actions to enhance the Suffolk coast as a tourism destination, which is likely to result in increases in visitor numbers to the area.

2.1.6 The England Coast Path with associated accessible coastal margin, is a proposed National Trail around England's coast. Sizewell is located along the 60km stretch of coast which Natural England has identified as 'Aldeburgh to Hopton-on-Sea'. Natural England submitted their proposals for improved access to the coast (including the England Coast Path and coastal margin) between Aldeburgh to Hopton-on-Sea to the Secretary of State for the Environment, Food & Rural Affairs on 29th January 2020 and has asked for all representations and objections to be submitted to Natural England by 25th March 2020. Natural England is proposing that the England Coast Path will follow the route of the Suffolk Coast Path past Sizewell C power station and through the main development site.

2.1.7 Natural England has undertaken a HRA for the England Coastal Path (Natural England 29th January 2020). In Table 7 they state that they anticipate that the pending mitigation for the Sizewell C Project will allow a conclusion of no adverse effect, both alone and in combination with other live plans or projects, from recreational impacts in relation to the England Coast Path and Sizewell C. At locations close to Sizewell C they anticipate

a small increase in use of the coast path as a result of the establishment of the England Coast Path and a negligible increase in use of the coastal margin. At Minsmere and Dunwich Heath for example, they anticipate a small relative increase on the coast path and conclude that maintaining a clearly waymarked England Coast Path will aid the long-term management of visitors.

2.1.8 New housing will largely accommodate predicted population growth for the region. This population growth combined with initiatives to enhance tourism is likely to result in an increase in numbers of people with, and without, dogs at European Sites. This new population will, in a number of respects, be different to the changes in population caused by the construction of SZC; for example people (including dog walkers) potentially displaced due to SZC will move from one area to another to undertake similar activities (see Section 3.2), and not represent a net increase in numbers of people and dogs to the area as a whole; and the SZC construction work force are unlikely to make use of European Sites to the extent of residents of new housing, and a much smaller proportion is likely to have dogs (the reasons for this are discussed in Section 3.3).

2.1.9 In summary, the construction of SZC is likely to lead to increases in numbers of visitors to certain European Sites (as discussed in Section 3), but any such change will occur in the context of the large numbers of existing visitors, and the likely increases in visitor numbers that will occur due to factors other than SZC.

2.2 Study area

2.2.1 A study area, extending to between approximately 12.5km and 17km from the SZC Main Development Site was defined through review of selected published reports on recreational visitor surveys in landscapes of a similar type to that within the area around the SZC site, in particular either heathland landscapes or estuary landscapes associated with European Sites including SPAs and SACs. The evidence base for this is set out in the Sizewell C Proposed Nuclear Development HRA Evidence Plan Volume II (of II), Appendix 3.5 SZC-EP-W4-002 Disturbance due to potential increase in recreational pressure (EDF Energy October 2014). The reports reviewed were as follows:

- South Sandlings Living Landscape Project – Visitor Survey Report (Footprint Ecology, 2011) – hereafter referred to as ‘Sandlings’;
- Visitor Access Patterns on the Thames Basin Heaths (Footprint Ecology, 2005), which formed part of the Thames Basin Heaths SPA Access Management Report (2007, LDA Design and Natural England) – hereafter referred to as ‘TBH’;

- Visitor Survey Results from Breckland SPA (Footprint Ecology, 2011) – hereafter referred to as 'Breckland';
- The Solent Disturbance and Mitigation Project. Phase II on-site visitor survey results from the Solent Region (Footprint Ecology, Oct 2010) – hereafter referred to as 'Solent';
- Exe Disturbance Survey (Footprint Ecology, Dec 2011) – hereafter referred to as 'Exe';
- An Assessment of the Recreational Impacts on the European Sites of the River Medina and Ryde Sands on the Isle of Wight (Natural Enterprise, March 2012) – hereafter referred to as 'Isle of Wight';
- Thames Basin Heaths Special Protection Area: Mitigation Standards for Residential Development (English Nature[1], May 2006) – hereafter referred to as 'TBH1'; and
- Report to the Panel for the Draft South East Plan Examination in Public on The Thames Basin Heaths Special Protection Area and Natural England's Draft Delivery Plan (Burley P February 2007) – hereafter referred to as 'TBH Panel Report'.

2.2.2 The study area was established through analysis of the distances people travelled to the survey locations at the European Sites recorded in the above reports, and the distances people said that they would be prepared to travel to alternative sites during EDF Energy surveys undertaken in the area and which are also referred to in this report (full survey reports are included in ES Volume 2 Appendix 15A and 15B (Doc Ref. 6.3)).

2.2.3 The reports used a straight line calculator to measure the distance from people's home postcodes to the survey locations. The review of distances travelled to the survey locations at the European Sites identified the following:

- The majority of visitors arrived by car/van (79% at Sandlings; 83% at TBH; 91% at Breckland; 79% at Medina and 58% at Ryde at the Isle of Wight; 58% at Solent).
- Car/van driving distances for all visitors were: a winter median of 6.71km and summer median of 8.18km at Sandlings (and an annual median of 6.17km excluding those on holiday); a median of 3.1km at TBH; a median of 8.81km at Breckland; and a median of 4km at the Solent (excluding those on holiday).

[1] English Nature are now called Natural England

- The year round median at Sandlings for non-holiday makers was 6.17km which included people arriving by horse, bike or on foot. The median specifically for non-holiday makers arriving by car was 7.53km.
- Travelling distances for dog walkers were: a winter median of 4.9km and summer median of 4.7km at Sandlings; a median of 5.6km at Breckland, with an interquartile range between approximately 3-10km; and a median of 1.2km at Solent, with an interquartile range between approximately 0.5-2km.
- At Sandlings approximately 75% of dog walkers lived within 10km, and 50% lived within 5km. Walkers travelled a median distance of 13.5km in winter, and 19.54km in spring/summer to reach survey locations.
- At TBH just under 75% of respondents reported coming from within 5km. The maximum travel distance for car/van drivers was 555.4km and the minimum was 0.4km, whilst the median distance was 3.1km. The median travel distance for those arriving on foot was 0.5km, for those on bikes it was 1.5km, and for those arriving by horse it was 3.1km.

2.2.4 Evidence on the distance that people would be prepared to travel to alternative sites was only given in the TBH report which identified that:

- At TBH 44% of participants would travel between 1.6 – 8km to reach alternative sites; whilst 16% would travel less than 1.6km, 28% would travel more than 8km, and 12% chose several categories. Of the dog walkers, 51% would travel between 1.6 – 8km; whilst 17% would travel less than 1.6km, 20% would travel more than 8km, and 11% chose several categories.
- Of the dog walkers, 59% of those in cars would travel 1.6-8km, and 81% of those on foot would travel to within 1km to alternative sites. Of all the groups, dog walkers were the group with the smallest proportion of people willing to travel more than 8km to reach alternative sites (20%).

2.2.5 English Nature set out a series of zones around SPA sites, where development should and should not occur, and what proportion of 'Suitable Accessible Natural Green Space' (SANGS[2]) should be provided as part of a

[2] SANGS is green space that is of a quality and type suitable to provide alternative green space to divert visitors from visiting the Thames Basin Heaths SPA. SANGS are intended to provide mitigation for the potential impact of residential development on the SPA by preventing an increase in visitor pressure on the SPA.

development (TBH1). These were examined and reported on in the TBH Panel Report.

2.2.6 The TBH Panel Report states that studies reported on in TBH1 identified that up to 30% of vehicle drivers in the study were found to come from beyond 5km and that a rapid levelling off of visitors by car occurred at 7km from the SPA. The TBH Panel Report concluded that the assessment of effects on the SPA should be undertaken for housing developments up to 7km from the SPA.

2.2.7 From the typical median[3] travel distances identified in the above reports and the findings of the Thames Basin Heaths SPA Delivery Plan it can be assumed that the majority of visitors, in the context of these reports, drive relatively short distances and most commonly visit to walk their dogs. An 8km Displacement Zone was therefore considered to be a reasonable basis (which was subsequently verified through survey as discussed in Section 3.4 a)) to define the likely extents of potential displacement occurring from the SZC Main Development Site area capturing typical movement profiles for recreational users. This offset was used to define a wider study area which extended the study area to between approximately 12.5km and 17km from the Main Development Site boundary, as described below.

2.2.8 The study area for assessing effects due to displacement was based on the following zones of potential influence around the SZC Main Development Site as shown on Figures 001 and 002, and on the Figures in ES Volume 2 Appendix 15A and 15B (Doc Ref. 6.3):

- Zone of Physical Change (defined by a 2km buffer around Main Development Site)
  - The potential effects on Public Rights of Way (PRoW), permissive paths and access areas are likely to occur within approximately 2km of the Main Development Site defined as the Zone of Physical Change. This includes potential PRoW closures and the location of diverted or newly created routes.
- Displacement Zone (defined by 8km buffer around the Main Development Site)
  - Research (see above) and field-based questionnaire responses (see ES Volume 2 Appendix 15A (Doc Ref. 6.3)) identified that the approximate median distance likely to be travelled by people to reach a location for recreational activities is 8km. As such, this zone is judged to be the appropriate extent of the catchment

[3] The mid-point of the data collected.

area for visitors that have the potential to be displaced by changes to existing PRoW, permissive paths and access areas within the Main Development Site during construction and operation of SZC. The Displacement Zone captures a number of settlements which have been used to define the Buffer Zone (see below).

- Buffer Zone (defined by 8km buffer around settlements within the Displacement Zone)
  - This zone defines the geographic extent around settlements within the Displacement Zone that people may be displaced to as a result of changes to PRoW, permissive paths and access areas or perceptions about the SZC development within the Main Development Site, based on the 8km median distance discussed above. A recreational user from a settlement who might have travelled up to 8km towards SZC to use a recreational resource may, therefore, potentially be displaced up to 8km away from SZC to use an alternative recreational resource.
  - The outer edge of the Buffer Zone defines the extent of the study area (the approximate extent of which was confirmed through survey analysis) and this extends to between approximately 12.5km and 17km from the SZC Main Development Site.

2.2.9 This study area has been tested through survey work undertaken specifically for the SZC project and agreed with consultees as appropriate for assessing potential effects due to recreational displacement, as discussed in Section 3.4 of this report.

2.2.10 Whilst the study area has been rigorously tested and agreed, it was advised by consultees during meetings in 2016 that there may be additional pressure at access points to the Benacre to Easton Bavents Lagoons SAC, Benacre to Easton Bavents SPA and NNR which lie outside the study area to the north. As such Section 5 examines the access arrangements to the Benacre to Easton Bavents SAC, SPA and NNR within access points A and B, in addition to access arrangements at European Sites within the study area.

2.3 European Sites

2.3.1 The Evidence Plan Framework for the HRA (EDF Energy October 2014) identified that interest features of European Sites could be affected by an increase in recreational pressure, resulting from displacement of existing users of linear and area public access during the construction of SZC, and from construction workers who may visit European Sites. The Evidence

Plan contained a series of Red/Amber/Green (RAG) tables (described at paragraphs 2.3.3 and 2.3.4 below) that identified those European designated sites within the study area and where a potential impact pathway due to an increase in recreational pressure was identified. These are:

- Minsmere to Walberswick SPA and Ramsar;
- Minsmere to Walberswick Heaths and Marshes SAC;
- Sandlings SPA;
- Alde, Ore and Butley Estuaries SAC;
- Alde – Ore Estuary SPA and Ramsar;
- Orfordness and Shingle Street SAC; and
- Benacre to Easton Bavents SPA.

2.3.2 This evidence base therefore focuses on the above European Sites which are shown on Figures 001 and 002. Consideration is also given to protected habitats out with SPA boundaries that support the 'interest features'. For example coastal floodplain grassland within the Minsmere South Levels lies outside the SPA but provides foraging habitat for marsh harrier that breed within the SPA.

2.3.3 At the heart of the Evidence Plan (EDF Energy October 2014) were a set of Likely Significant Effect (LSE) Scoping tables for the construction and operation phases of the development (alone – i.e. they did not take account of other plans and projects at this stage). These tables represented an agreed position with technical stakeholders at that time on what cause-effect pathways should be considered at formal Stage 1 LSE screening assessment.

2.3.4 Moreover, for each of the qualifying interest features of each selected European site the potential 'effect strength' was categorised in order to help define the evidence requirements for the screening stage (i.e. green = no impact pathway / no effect - no further evidence required; amber = weak impact pathway / trivial or inconsequential effect - evidence required to demonstrate whether a LSE could arise or be excluded; and red = moderate or strong impact pathway / LSE - evidence required for consideration of adverse effect on site integrity).

2.3.5 Subsequent to the Evidence Plan process, the HRA Working Group were consulted on the draft Stage 1 HRA Screening assessment (including Screening Matrices in the format as required by the Planning Inspectorate)

in January 2019, with a workshop held in March 2019. All written and verbal comments received during the consultation process were considered and the LSE matrices updated accordingly. The LSE matrices produced have therefore superseded the draft scoping tables contained within the Evidence Plan.

2.3.6 This baseline does not attempt to undertake a detailed review of how the ecological receptors identified could potentially be affected by an increase in recreational disturbance. However, in broad terms the potential recreational impact pathways identified can be summarised as:

- Disturbance to nesting (in particular ground nesting species), foraging and wintering bird species, in particular from dogs repeatedly running across such areas; and
- Trampling of sensitive habitat features, such as shingle vegetation, and localised nutrient enrichment (from dog faeces and urine) causing changes to plant communities by favouring vigorous widespread weeds such as nettle over more sensitive plant species.

2.4 Recreational baseline – existing visitor survey information

2.4.1 The existing recreational visitor survey information produced since 2003 that is relevant to the SZC project, ranges from a national scale survey by Natural England to provide information about the relationship between people and the natural environment, to county-scale and local surveys. These local surveys provide the most relevant available information on recreational and visitor use within the locality of SZC, and a broader context to public access visitor surveys that have been undertaken specifically for the SZC project which are presented ES Volume 2 Appendix 15A and 15B (Doc Ref. 6.3) and discussed separately in Sections 3.2 and 3.4.

2.4.2 A total of thirteen surveys, undertaken between 2003 and 2019, have been identified as providing relevant baseline information to this report in addition to surveys undertaken by EDF Energy which are reported in Section 2.5. The surveys, in chronological order, are:

- Natural England. (2018). Monitor of Engagement with the Natural Environment (MENE): The national survey on people and the natural environment (Headline Report: Analysis of the latest results 2017-2018 and nine years of surveys);
- Royal Society for the Protection of Birds (RSPB). Minsmere Visitor Satisfaction Survey 2017

- Visit Suffolk (July 2015). Visit Suffolk Market Segmentation Draft Report. (PowerPoint presentation of the report);
- Natural England. (2015). Monitor of Engagement with the Natural Environment (MENE): The national survey on people and the natural environment. Annual Report from the 2013-2014 survey;
- Royal Society for the Protection of Birds (RSPB). Minsmere Visitor Survey Data 2014-2015 and 2015-2016
- Royal Society for the Protection of Birds (RSPB). Minsmere Visitor Numbers and Targets by Category 2014-2019
- Suffolk Coast and Heaths AONB Partnership and the Suffolk Coast Destination Management Organisation. (June 2013). Suffolk Coast Tourism Strategy 2013-2023: Strategy Report;
- Footprint Ecology (FE). (2011). South Sandlings Living Landscape Project: Visitor Survey Report;
- No Adastral New Town (NANT). (2011). Deben Estuary Visitor Survey Report;
- East of England Tourist Board (EETB). (2010). Suffolk Visitor Survey;
- In Step With Suffolk: Rights of Way Improvement Plan: Assessment Report. (2004);
- East of England Tourist Board (EETB). (2004). Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) Visitor Research;
- East of England Tourist Board (EETB). (2003). Visitor and Recreation Data in the Suffolk Coast and Heaths Area of Outstanding Natural Beauty.

2.4.3 The following published research on dog ownership and behaviour in the outdoors has also been referred to in the preparation of this report:

- Blaney, A (2011) Greenham and Crookham Common Visitor Survey 2011. West Berkshire Living Landscapes Partnership, UK;
- Brown, K (2014) The Role of Landscape in Regulating (Ir)responsible Conduct: Moral Geographies of the 'Proper Control' of Dogs, Landscape Research;

- Edwards, V. and Knight, S. (2006) Understanding the psychology of walkers with dogs: new approaches to better management. University of Portsmouth, Portsmouth;
- Hampshire County Council (HCC). (2013). Planning for dog ownership in new developments;
- Hampshire County Council (2008) Danebury Dog Project. Available from www.hants.gov.uk/dogs;
- Jenkinson (2015) Managing visitors with dogs at Winterton and Great Yarmouth North Denes, Norfolk. Access and Countryside Management, Orkney;
- Jenkinson, S. and McCloy, A. (2008) Final report: Walkers with dogs around Winchester. Access and Countryside Management, Hope Valley;
- Kennel Club (2012) Coastal Access Survey: Kent (Ramsgate to Folkestone). London;
- Lowe, C, Williams, K, Jenkinson, S and Toogood, M (2014) Environmental and social impacts of domestic dog waste in the UK: investigating barriers to behavioural change in dog walkers. International Journal of Environment and Waste Management, Vol. 13, No. 4, 2014;
- Natural England (2008) Guidelines for the creation of Suitable Accessible Natural Green Space (SANGS). (Unpublished);
- Pet Food Manufacturers' Association (2018) Regional pet population 2019. PFMA, London [Accessed 19/11/19 at: https://www.pfma.org.uk/pet-population-2019];
- Sport Industry Research Centre (2008) Assessment of perceptions, behaviours and understanding of walkers with dogs in the countryside. SIRC, Sheffield, UK;
- Taylor, K., Anderson, P., Taylor, R., Longden, K. and Fisher, P. (2005) Dogs, access and nature conservation. English Nature Research Report 649, Peterborough.

2.4.4 There is a good resource of existing baseline information on recreational users in the Suffolk and the Sizewell area. A high number of designated sites along the Suffolk Coast including the Suffolk Coast and Heaths (SCH) AONB, Sandlings SPA, the Deben Estuary SPA and the RSPB Minsmere Reserve (part of the Minsmere to Walberswick European Site) have been

the subject of individual visitor surveys. This information can be used to establish an understanding of the baseline situation, and to understand the context of the SZC public access user surveys that are discussed in Sections 2.5, 3.2 and 3.4, and whether the results are representative of the results of the other existing visitor survey information available for Suffolk and nationally.

2.4.5 Whilst much data exists, it should be noted that it has been collected at different times, for a variety of purposes and using different methodologies. The thirteen studies were undertaken over a 16 year period and following a variety of survey methods including long and short questionnaires, visitor counts, driving transects, automated counts and historic data reviews. The resulting information varies both in terms of geographic extent and the quality of information collected but is still considered relevant to this study.

2.4.6 At a national scale, the Natural England Headline Report (MENE 2018) and visitor survey (MENE 2015) provide a broad picture of how we might expect visitors to use the countryside and coastal areas. At a local scale, the Minsmere visitor survey data (2014 - 2019), Visit Suffolk Market Segmentation Draft Report (Visit Suffolk July 2015), Suffolk Coast Tourism Strategy (SCH AONB 2013) and South Sandlings Living Landscape Project (FE 2011) are particularly useful in establishing a local pattern of recreational use. All of these surveys have been undertaken since 2011 and use a methodology following similar principles to the SZC visitor surveys discussed in Sections 2.5, 3.2 and 3.4.

a) Visitor profile

2.4.7 **A range of visitors are attracted to the area including day visitors and staying visitors.**

2.4.8 The EETB Report (2004) states that 55% of visitors to the SCH AONB were day visitors and 45% were staying visitors (on holiday). These findings are supported by the RSPB Minsmere Visitor Satisfaction Survey (2017) which indicates that the number of day visitors to the reserve is between 47-57% compared to 28-44% of staying visitors. While the FE Report (2011) does not provide a percentage breakdown of the different types of visitors, it demonstrates the presence of day visitors (visiting from home), staying visitors (holiday makers) and 'others' within the South Sandlings study area (this is loosely defined as the block of land between the River Alde / Ore and the River Deben).

2.4.9 **A high proportion of recreational users in the Sizewell area are local residents.**

2.4.10 At the national scale, the MENE Report (2015) states that 68% of all visits to the natural environment were undertaken within 2 miles (approx. 3.2 km) of their start point (95% of respondents used their home address as the start point. 5% started from another location) suggesting a high number of visitors are local residents. At the local scale, this is supported by the FE Report (2011) which states that most visits to the South Sandlings area were made by local people with 85% of all geocoded postcodes falling within 20km (approx. 12.4 miles) radius of the survey locations and the highest number of postcodes within 500m. The EETB Report (2004) states that 55% of day visitors within the SCH AONB survey came from the East of England, often within or in close proximity to the AONB itself. In contrast to the previous reports, visitor data collected at RSPB Minsmere Visitor Satisfaction Survey (2017) shows a higher proportion of day visitors and holiday makers compared to local residents (10%). This may be explained by the restrictions on dog walking in some parts of Minsmere, the cost of entering the main part of the reserve via the Visitor Centre, which is likely to dissuade local residents from visiting some parts of the site, the large number of alternative areas for locals to visit that are free, and the fact that it is a nationally recognised attraction to which people (and in particular bird watchers) will be drawn from further afield.

2.4.11 **The average group size tends to be between 2-3 people.**

2.4.12 At the national scale, the MENE Report (2015) states that 50% of visits were taken alone with the average total party size being 2.4 people. A similar size of group is identified at the local scale by the FE Report (2011) which identifies the median group size as 2 people (accounting for 40% of the groups) closely followed by individual visitors within the South Sandlings study area. The NANT Report (2011) identifies an average group size of 2.52 people within the Deben Estuary study area whereas the EETB Report (2004) identifies an average group size of 2.9 people in the SCH AONB.

2.4.13 **The majority of visitors to the Sizewell area tend to have an older age profile.**

2.4.14 At the local scale the SCH AONB Report (2013) identifies an older age profile of visitors to the Suffolk Coast (although it does not provide exact figures or age ranges). The prevalence of older age visitors using the area is supported by the Minsmere visitor data (2013-2014) which identifies the majority of visitors to the reserve between the 45-74 age range. Although the MENE Report (2015) provides some analysis of visitor age profiles at the national scale it does not provide a breakdown of the typical age groups likely to visit the countryside and coastal areas for use within this report. The Visit Suffolk Report (2015) stated that two groups of visitors to Suffolk

emerged from the survey with the following age profiles: 'Discerning couples' (the primary cluster of visitors identified), typically, but not exclusively, aged 55+; and 'Outdoor families' (the secondary cluster of visitors identified), typically families with adults aged 35-54.

b) Duration of visit

2.4.15 **The duration of visits is relatively short and last for approximately 1-2 hours.**

2.4.16 At the national scale, the MENE Report (2015) identifies that the average visit to the natural environment lasts for just over 2 hours, with 28% of visits less than an hour and 50% of visits between 1-2 hours. At the local scale, this trend is supported by the FE Report (2011) which identifies that the majority of visits (44%) to the South Sandlings area last between 1-2 hours with 36% of visits less than an hour. The average duration of visits to Minsmere (2017) are recorded as slightly longer with the majority of visitors staying for 2-3 hours (27%) and most visitors (70%) recorded as staying 2-5 hours. This may be explained by a number of reasons including the type of people visiting Minsmere who tend to be staying visitors (on holiday) travelling from further away, who will stay for longer to watch birds, who have paid to enter the reserve (and wish to get value for their money) and who may also visit the café resulting in a longer visit. The HCC (2013) report (which applies a range of research on dog walker behaviour) identifies that a typical daily dog walk is around 2.7km, or around one hour, and follows a circular route (from UE Associates, 2009).

c) Frequency of visit

2.4.17 **Visitors make frequent visits to area.**

2.4.18 The MENE Headline Report (2017-2018) states that around three in five adults living in England (62%) reported taking visits to the natural environment at least once a week with 51% of all visits to the natural environment to countryside or coastal locations. Local studies show that many visitors to the area visit regularly; the Visit Suffolk Report (2015) found that over half (58%) of those who had visited Suffolk recently were also regular visitors to the county. This trend is supported by the FE Report (2011) which shows that 64.4% of people visit the South Sandlings study area at least once a week and of these 34.9% visited the site daily. This is supported by the SCH AONB (2013) study which identifies that 51% of day visitors are regular visitors to the Suffolk Coast (with one trip per month or more). The MENE Report (2015) suggests that the frequency with which visits are taken to the natural environment is increasing with a 4% rise in visits between 2009/10 and 2013/14.

d) Seasonality of visit

2.4.19 **Visitors are attracted to the area all year round.**

2.4.20 At the national scale, the MENE Report (2015) states that approximately 30% of the English adult population had taken visits to the natural environment several times a week or more in the last 12 months. This was a consistent trend over the previous 5 years. At the local scale, this is supported by the FE Report (2011) which states that visitors do not appear to be heavily influenced by seasonality with 69.4% respondents stating that they visit the South Sandlings area consistently throughout the year. This is supported by the NANT Report (2011) which states that 45% of those surveyed visited the Deben Estuary area with the same frequency all year round. The Minsmere visitor numbers (2014-2019) also shows that people visit all year round but with some variation, the minimum for any one month in 2018 being 4,717 people (December) and the highest being 13,407 people (May). The Visit Suffolk Report (2015) found that visitors to Suffolk do visit all year round but that there was a notable difference between summer (peak month was May with 20% of annual visitors) and winter (lowest month was November with 1% of annual visitors) (see also paragraph below).

2.4.21 **Higher visitor numbers are experienced in the summer compared to the winter.**

2.4.22 The MENE Report (2015) identifies a national trend of higher visitor numbers in the summer months (June to August) when the weather is warmer and daylight hours increase (although it does not provide exact figures to support this). Conversely lowest visitor numbers are identified in the winter months between December and February. At the local scale, the Visit Suffolk Report (2015) concluded that Suffolk's key holiday season appears to be long, from April to September and that peak times are May – June and August, particularly amongst those who take children on the trip (i.e. school summer holidays) and those who live within a one to three-hour drive. The Minsmere visitor numbers (2014-2018) exhibit the same pattern of seasonal variation, with a peaks in visitor numbers during the months of April, May and August and lows in December. For example, of the total number of visitors in 2018 (103,844 people) approximately 12% (13,407 people) visited in August compared to approximately 5% (4,717 people) in December. The EETB Report (2003) also identifies August as the peak month for visitors at Sizewell and Thorpeness. The rise in visitor numbers during the summer months is partly due to an increase in holiday makers. This is evidenced in the FE Report (2011) which shows significantly more holiday makers in the spring / summer period (19% on holiday) compared to the winter period (6% on holiday).

e) Activities undertaken

2.4.23 **The most popular visitor activity is walking. A large proportion of walks are undertaken with dogs (with exceptions e.g. where dog restrictions apply).**

2.4.24 At a national scale, the MENE Report (2015) identifies walking as the most popular activity undertaken on 76% of all visits; of the latter 76%, 50% involved walking with a dog while 26% involved walking without a dog. This trend is repeated at the local scale - the FE Report (2011) identifies walking as the most popular activity with 52.8% of people walking a dog and 22% of people walking without a dog in the South Sandlings area. According to the EETB Report (2004) 56% of respondents identify walking as the most popular activity in the SCH AONB. At Minsmere, walking / following a trail was the second most popular activity (84%) behind buying something from the reserve's café / kiosk (92%) according to the visitor data collected in 2017. The Minsmere Visitor Survey (2014-2015) stated that 0% of visitors came to walk a dog at Minsmere, which is most likely explained by the fact while dogs are permitted in the latter amenities around the visitor centre and cafe, they are not allowed on the adjacent network of nature trails in the core part of the reserve[4], making this an unattractive destination for walking dogs.

2.4.25 The HCC (2013) report identifies that the majority of dog walkers prefer to walk their dogs off the lead, although most dog walkers are happy to use leads at some points during walks if there is a clear and credible reason to do so, with the ability to take off-lead access in the vicinity (Blaney, 2011; HCC, 2008). A preference for visitors to walk their dogs off the lead in the Sizewell area is evidenced by the FE Report (2011) which states that 76% of groups with dogs were seen with their dogs off the lead. The NANT Report (2011) supports this finding and states that 52.8% of dogs seen at the Deben Estuary were allowed to run off the lead by their owners.

2.4.26 The Visit Suffolk Report (2015) found that walking was the most popular activity but does not refer to dogs.

2.4.27 **Visitors undertake a variety of activities (other than walking). Many of these activities are location and season specific.**

2.4.28 At the local scale a range of visitor activities are identified in the Suffolk and Sizewell area. The SCH AONB Report (2013) identifies visiting a pub/cafe

[4] The core of the reserve is defined as the area close to the visitor centre including bird hides and three trails shown on RSPB's Minsmere Trail Map in Appendix B (hereafter referred to as the 'core' of the reserve). The full extent of the RSPB Minsmere Nature Reserve is shown on the Public Access Map provided by the RSPB in Appendix B.

(43%), short walks (less than 2 hours - 30%), shopping (24%) and relaxing/enjoying the view (22%) as popular activities across the wider Suffolk Coastal area. More specifically, the FE Report (2011) identifies a range of visitor activities undertaken in the South Sandlings area during the summer and winter months. The following activities were identified as a percentage total of all visitors surveyed: bird watching (2.2% in summer, 3.6% in winter), cycling (5.5% in summer, 9.4% in winter), dog walking (59.7% in summer, 42.4% in winter), exercise (2.6% in summer, 4.7% in winter), family outings (1.2% in summer, 11.5% in winter), walking (23.7% in summer, 19.4% in winter) - these figures demonstrate how the activities change between summer and winter. The Visit Suffolk Report (2015) showed that activities such as walking and bird / wildlife watching, were amongst the most popular in Suffolk, and that water activities (like boating and open water swimming) were also popular, as were cycling, fishing, golf and horse riding.

2.4.29 Many activities within the Sizewell area are location specific. For example, the visitor satisfaction survey at RSPB Minsmere (2017) shows that bird watching is very popular (with 48% of visitors stating specifically bird watching as the reason for visiting). The FE Report (2011) found that dog walking at Sutton Heath was very popular, largely due to specific features of the site that benefit dogs including the enclosed nature of the site, reported lack of deer and the ability to do long circular walks. Rendlesham Forest came out as a 'hotspot' for cyclists in the spring/summer survey with 77% of responses for this activity whereas Tangham (within Rendlesham Forest) was particularly popular for family outings (accounting for 60% of responses for 'an outing with family').

2.4.30 Department of Transport statistics published for the period 2016-2017 (most recent published data set) states that in total, 17.2% of Suffolk residents cycle once per month for recreational purposes compared to the national average of 13.6%. On a weekly basis, 9.9% of residents cycle for recreational purposes, compared to the national average of 8%. This evidence suggests that recreational cycling by residents in Suffolk is higher than the national average.

2.4.31 In terms of cycling activity by visitors, the Visit Suffolk Report (2015) states that 13% of visitors to Suffolk participate in recreational cycling activities, although walking and hiking are by far the most popular activities (69%).

2.4.32 The online Strava Global Heat Map although not quantifiable, provides an indication of the routes and locations most intensely used within the study area, which are the Suffolk and Coast Heath AONB Cycle Explorer Routes, the Suffolk Coastal Cycle Route, Sustrans National Cycle Route (NCR) (1) and Sustrans Regional Cycle Route (RCR) (41/42), RSPB Minsmere along

Sheepwash Lane and Mill Road and Dunwich Village and Forest and the Tunstall and Rendlesham Forests, where mountain bike parks and trails are provided.

2.4.33 At a local level, the SZC visitor surveys (2014) identified that on the whole, 24% of respondents cycle the surveyed routes on a weekly basis. The survey observed cycling activity at all the survey points, and found cycling was particularly popular at Aldringham Walks, Bridleway 19 and on the Eastbridge - Minsmere Sluice Path.

f) Experience

2.4.34 **Scenery and peace and quiet is consistently identified as a popular reason for visiting the area.**

2.4.35 At the national scale, 20% of respondents in the MENE Report (2015) identified 'enjoying the scenery' as a reason for taking visits to the natural environment. This is supported at the local scale by the SCH AONB Report (2013) which identifies peace/tranquillity (53% of respondents) and quality of the scenery/ landscapes (47% of respondents) as the main 'likes' about the Suffolk Coast. The Visit Suffolk Report (2015) states that Suffolk's natural environment appeared to be the most visited attraction ('the coast / beaches' and 'countryside' were the two most visited). The NANT Report (2011) identifies 'scenery / views' (56.7%) and the 'presence of water (river)' (62.7%) as the main reasons for visiting the Deben Estuary while the EETB Report (2004) states that the most popular aspect of the AONB was the scenery (18%). Results of the RSPB Minsmere visitor survey (2014-2015) pre-written statements show that people most agreed with were, 'it was peaceful and gave me a place to relax' (74%) and the opportunities it provided to 'get close to wildlife' (75%) (the reserve is nationally renowned for bird watching and provides the opportunity for visitors to see a variety of rare bird species).

g) Transport

2.4.36 **The majority of visitors to the countryside arrive by car.**

2.4.37 At a national scale the MENE Report (2015) identifies that 28% of visits to the natural environment are made by car compared to 64% by foot. It should be noted that these statistics account for people visiting a range of locations including parks, playgrounds and allotments in urban environments which are typically more accessible from people's homes by foot. It does not provide a breakdown of people travelling specifically to the countryside and coastal areas which would be more relevant to the SZC study area. (Most outdoor informal recreation resources within the SZC study area are open access areas and routes within rural areas including

the beach, the Suffolk Coastal Path, the network of linear routes such as PRoW permissive paths, plus Open Access Land and Registered Common Land (e.g. at Dunwich Heath and Westleton Walks (within Minsmere to Walberswick European Site) and Aldringham Common (within Sandlings European Site)). At a local scale, the number of visitors travelling by car is shown to be much greater. The FE Report (2011) states that 79% of visitors to the South Sandlings area arrived by car compared to 17% of visitors arriving by foot. The NANT Report (2011) states that 79.1% of visitors to the Deben Estuary arrive by car compared to 11.2% on foot. 82% of respondents to EETB (2004) questionnaire arrived by car and 90% of visitors to the RSPB Minsmere Reserve (2014-2015) arrived by car.

h) Other locations used

2.4.38 **The majority of visitors visit a range of sites within and around the local area.**

2.4.39 The FE Report (2011) states that visitors to the South Sandlings study area also visited locations further afield to Sizewell to the north and Felixstowe in the south. 59% of visitors to the Sandlings also stated that they visit coastal and estuary sites in the local area demonstrating the extent to which visitors make use of the different locations available.

2.5 Recreational baseline – SZC public access visitor surveys

2.5.1 Surveys of visitors to informal outdoor recreation areas and routes have been undertaken in 2014 and 2015 to gain a more detailed understanding of the existing pattern of recreation use and behaviour within the area that may be affected by the construction of SZC. This information builds on the existing survey information summarised in Section 2.4. This additional survey data is intended to ensure that there is a detailed evidence base to inform robust impact assessment

a) 2014 survey

2.5.2 Public access visitor surveys were conducted on behalf of EDF Energy at seven survey points in August and November 2014 and included a combination of observation and questionnaire based visitor surveys, following a method prepared in consultation with the RSPB, Suffolk Wildlife Trust, Suffolk County Council, Natural England and the Suffolk Coast and Heaths AONB. The full methodology and results are set out in the SZC Public Access Visitor Surveys 2014 report, which are included in ES Volume 2 Appendix 15A (Doc Ref. 6.3). These surveys are, hereafter, referred to as the '2014 Sizewell C visitor surveys'.

2.5.3 The survey points are shown on Figure 01 in ES Volume 2 Appendix 15A (Doc Ref. 6.3).

b) 2015 Sizewell C RSPB Minsmere visitor surveys

2.5.4 Further user surveys have been undertaken at Minsmere RSPB Reserve in 2015 at the request of the RSPB, to collect data at the heart of the reserve. It was agreed with the RSPB that only questionnaire surveys would be undertaken in 2015 at Minsmere, and that an observation survey of visitors within the reserve would not be necessary because the RSPB already collect data on numbers of visitors and their profiles at Minsmere, and a summary of data that they collected between 2014 and 2019 is provided in Section 2.4. A separate report setting out the results of the 2015 Sizewell C RSPB Minsmere visitor surveys are set out in the SZC Visitor Surveys RSPB Minsmere 2015 report which is included in ES Volume 2 Appendix 15B (Doc Ref. 6.3). These surveys are, hereafter, referred to as the '2015 Sizewell C RSPB Minsmere visitor surveys'.

c) Existing users of outdoor recreation sites

2.5.5 During the 2014 Sizewell C visitor surveys, 4,214 users were observed and 514 questionnaires were completed, over two days in August and two days in November. During the 2015 Sizewell C RSPB Minsmere visitor surveys, 133 questionnaires were completed over two days in August and two days in November.

2.5.6 This survey information in combination with desk-based surveys recorded in Section 2.4 provides a robust evidence base to inform assessment of effects on amenity and recreation receptors in the study area and to inform assessment of effects on relevant European Sites.

2.5.7 The following conclusions about the 'typical' recreational user visiting the Sizewell area from the 2014 Sizewell C visitor surveys and 2015 Sizewell C RSPB Minsmere visitor surveys are identified below. Where the 2015 Sizewell C RSPB Minsmere visitor survey results show a different trend to the 2014 Sizewell C visitor surveys results, this is noted in square brackets:

- The majority of visitors to the Sizewell area are local residents who frequently visit the area to undertake walks.
  - [A higher proportion of visitors to RSPB Minsmere are holiday makers, and a higher proportion of the locals travel from further afield, and they visit the area less frequently than those recorded in 2014.]

- The majority of these visitors know the area well and visit a range of sites within and around the local area. The number of places where people had started their route from in the 2014 Sizewell C visitor surveys was high (54 in total).
  - [10 starting locations were stated by people surveyed at RSPB Minsmere.]
- 25% of visitors were holiday makers.
  - [49% of visitors to RSPB Minsmere were holiday makers.]
- The most popular primary activities were walking with, and without, a dog, followed by cycling, bird watching, enjoying wildlife, accessing the beach, taking exercise and getting fresh air.
  - [The most popular primary activities at RSPB Minsmere were bird watching, walking and enjoying wildlife. No respondents at RSPB Minsmere recorded dog walking; while dogs are allowed in the café and visitor centre, they are not allowed on the adjacent permissive paths in the core of the reserve, hence this difference between the 2014 Sizewell C visitor surveys and 2015 Sizewell C RSPB Minsmere visitor survey results.]
- The most popular secondary activities were getting fresh air, enjoying wildlife, accessing the beach, bird watching, taking exercise, walking, walking the dog, botanising and picnicking.
  - [The most popular secondary activities at RSPB Minsmere were similar and were: enjoying wildlife, walking, getting some fresh air, accessing the beach, bird watching, taking exercise and botanising. Dog walking was recorded by three people but was less popular.]
- There was variation in activities observed at different 2014 Sizewell C visitor survey locations (observation surveys were not undertaken at RSPB Minsmere in 2015), for example: the percentage of cyclists seen at survey locations ranged from 40% of people seen at Bridleway 19, to 2% of people seen at Sizewell Beach and 1% at Kenton Hills car park; and the percentage of dog walkers seen ranged from 66% of people seen at Kenton Hills Car Park to 15% of people seen at Dunwich Heath National Trust car park (see Table 4 in ES Volume 2 Appendix 15A (Doc Ref. 6.3)).
- Only two horse riders were seen in the entire survey - on the beach at Dunwich Heath.

- The main reasons people gave as to why they were visiting the survey locations in 2014 (Figure 4.4 within the text in ES Volume 2 Appendix 15A (Doc Ref. 6.3)) were because they were close to home (26%), the scenery (20%), they could let the dog off the lead (16%), the peace and quiet (10%), enjoying wildlife (6%) and there was good access to the footpath network (6%).
  - [The main reasons people gave as to why they were visiting RSPB Minsmere in 2015 (Figure 4.4 within the text in ES Volume 2 Appendix 15B (Doc Ref. 6.3)) were because they were enjoying wildlife (65%), the scenery (14%) and it was close to home (10%).]
- A large proportion of walks in the 2014 Sizewell C visitor surveys were undertaken with dogs.
  - [No respondents were walking dogs at RSPB Minsmere.]
- The dog walkers cited 64 different places (70% were within the study area) where they felt able to let their dogs off the lead in the 2014 Sizewell C visitor surveys.
  - [Only three people from the 2015 Sizewell C RSPB Minsmere visitor surveys answered the question about how often they walked their dog off its lead, naming three different places (all within the study area).]
- Observations of the numbers of dogs on and off the lead were gathered in the November survey only of the 2014 Sizewell C visitor surveys. A much greater proportion of dogs were observed to be off the lead (59-97%) rather than on the lead at all sites except Dunwich Heath National Trust Car Park (37%). The seven 2014 survey points were all locations where dogs are allowed off the lead.
- The majority of visitors (70%) in the 2014 Sizewell C visitor surveys use the routes all year round.
  - [A lower proportion of visitors to RSPB Minsmere (53%) use the routes all year found and the rest mainly in the summer.]
- During the winter period in the 2014 Sizewell C visitor surveys there is an approximate 23% reduction in visitor numbers which is most likely explained by a decrease in staying visitors.
- The visitor population is generally from the older age groups.

- The majority observed in the main 2014 Sizewell C visitor surveys visited in groups whilst a quarter visited on their own.
- The majority (73%) of people in the 2014 Sizewell C visitor surveys travelled to the start of their route by car.
  - [A greater proportion (96%) of people travelled to RSPB Minsmere by car.]
- The average duration of each visit lasts for approximately 1-2 hours.
  - [The majority of visits to RSPB Minsmere last for more than 2 hours.]

2.6 Summary of the recreational baseline

2.6.1 The existing visitor survey information provides a framework and context for the results of the visitor surveys carried out specifically for the SZC project. There is a strong correlation in a number of respects, between the type and profile of visitors recorded in the SZC visitor surveys (referred to as 'the SZC visitor surveys' below) and that recorded within the wider Suffolk area and national surveys (referred to as 'the existing surveys' below). Conclusions on the existing visitors to the Sizewell area can be drawn from, and are supported by, both the wider existing surveys and the SZC visitor surveys and are described under the following headings:

a) Popularity of the area

2.6.2 Both the existing surveys and the SZC visitor surveys indicate the popularity of the area for visitors, and the high number of people using outdoor informal routes and areas. The SZC visitor surveys show that the popularity varies between locations with some having a much greater use than others.

b) Frequency, seasonality and duration of visits

2.6.3 Both the existing surveys and the SZC visitor surveys show that visitors make frequent visits to area. Visitors use the area all year round, although there are greater numbers in the summer compared to the winter.

2.6.4 Both the existing surveys and the SZC visitor surveys show that the average duration of each visit is relatively short, lasting for approximately 1-2 hours. However, both the existing surveys and the SZC visitor surveys show that the average visit to RSPB Minsmere lasts longer than 2 hours.

c) Visitor profile

2.6.5 Both the existing surveys and the SZC visitor surveys show that a range of visitors use the area including local residents, day visitors and staying visitors / holiday makers. A high proportion of visitors identified in the 2014 Sizewell C visitor surveys are local residents (49%), although 25% of visitors were holiday makers. This contrasts with the 2015 Sizewell C RSPB Minsmere visitor surveys which identified that only 3% were local residents and 49% were holiday makers. This illustrates the importance of considering both local residents and holiday makers when assessing potential behaviour changes during the construction of SZC.

2.6.6 Both the existing surveys and the SZC visitor surveys show that the visitor population is generally from the older age groups.

2.6.7 Both the existing surveys and the SZC visitor surveys show that the majority of people visit in groups, although many visit alone.

d) Mode of travel

2.6.8 Both the existing surveys and the SZC visitor surveys show that the majority of people travel to the start of their visit location by car.

e) Visitor knowledge of the area

2.6.9 Both the existing surveys and the SZC visitor surveys show that visitors visit a range of sites within and around the local area. The SZC visitor surveys show that the majority of visitors know the area well. This indicates that the majority of visitors who may be displaced due to the SZC construction works are knowledgeable of a wide selection of alternative locations where they may go.

f) Reasons for visiting the location or area

2.6.10 The proximity to home (‘being close to home’) is the most popular reason for influencing the quantity of visits to survey locations identified in the 2014 Sizewell C visitor surveys, followed by the scenery, being able to let the dog off the lead, the peace and quiet, enjoying wildlife and good access to the public path network.

2.6.11 Both the existing surveys and the SZC visitor surveys show that the scenery, peace and quiet, and enjoying wildlife are popular reasons for visiting the area. These are, therefore, important when considering whether and how, and the extent to which visitors’ behaviour may be affected and changed due to the SZC construction works.

2.6.12 At RSPB Minsmere, buying something from the reserve's café / kiosk was the most popular activity identified by the surveys undertaken by the RSPB at the visitor centre and café, whereas enjoying wildlife was the most popular reason for visiting RSPB Minsmere identified by the 2015 Sizewell C RSPB Minsmere visitor surveys which was undertaken on behalf of EDF Energy. The locations of the two surveys next to two bird hides help to explain these different results.

g) Visitor activities

2.6.13 Both the existing surveys and the SZC visitor surveys show that people undertake a variety of activities but walking with and without dogs are the most popular.

2.6.14 Both the existing surveys and the SZC visitor surveys show that activities vary between the sites, indicating that people choose where they go to for reasons that include the suitability of the location to support the type of activity that they wish to pursue.

h) Dog walking

2.6.15 Both the existing surveys and the SZC visitor surveys show that a large proportion of walks are undertaken with dogs (with exceptions e.g. where dog restrictions apply).

2.6.16 Both the existing surveys and the SZC visitor surveys show that a large proportion of walkers with dogs seek to exercise them off lead (where there are no restrictions).

2.6.17 The SZC visitor surveys show that the proportion of dogs walked off the lead varies between sites, and that dog walkers know a large number of locations where they can let their dogs off the lead.

2.6.18 Restrictions in relation to visitors with dogs are made apparent on signage in many areas in and around the European Sites. These messages include: all dogs being prohibited except for assistance dogs; people keeping their dogs on a lead at all times around livestock; keeping dogs on a short fixed lead between 1 March to 31 August; keeping dogs under close control; very localised signage asking people to keep dogs out of fenced-off areas for nesting terns. While all such signage is clearly well-intentioned, in many cases it gives unclear and sometimes contradictory messages within, and between, sites. The signage is not always accurate in legal terms, and in many cases it does not reflect current good practice. More information on site-specific signage is given in Section 5.

3. Potential additional recreational visitors to European Sites during SZC construction

3.1 Introduction

3.1.1 The construction of SZC has the potential to lead to additional recreation use of European Sites due to:

- The potential displacement of existing users of informal outdoor recreational resources to European Sites, who wish to avoid the area around SZC due to the disturbance caused by construction activities including some linear access routes being temporarily closed or diverted.
- People working on the construction of SZC who will be living or staying in the area, who may visit European Sites.

3.1.2 These two groups are discussed in Sections 3.2 and 3.3 below.

3.1.3 Measures will be put in place to minimise disturbance to existing users of informal outdoor recreational resources during the 10-year construction phase of SZC, which EDF Energy will seek to agree with consultees through consultation, and which will be described in masterplan, landscape and PRoW and access strategies. These strategies are being prepared as part of an iterative design / assessment / consultation process and have yet to be finalised and agreed. The access strategy seeks to limit disturbance of routes through careful construction-phase planning and provision of diversion strategies. Current proposals being considered include:

- Optimising the retention of existing linear public paths during construction, and so minimising potential displacement as much as possible. In particular it is intended to minimise periods of closure on the PRoW along the coast, the Suffolk Coast Path, Sandlings Walk and the future England Coast Path during construction of the new sea defences and beach landing facility, and to provide diversion routes where temporary closure is essential for safety or operational reasons;
- The popular permissive footpaths within Kenton Hills (within the EDF Energy Sizewell Estate) will be kept open during the construction phase, where walkers with, and without, dogs will continue to be welcome;
- Provision of additional public access at Aldhurst Farm habitat creation scheme (hereafter referred to as ‘Aldhurst Farm’) which is to be developed and agreed to deliver permanent public access alongside meeting its agreed habitat creation objectives. It is envisaged that

these proposals will make significant provision for exercising dogs on and off leads;

- Further improvements to enhance public access into the EDF Energy Sizewell Estate and to link with Aldhurst Farm, including enhanced connectivity with existing PRoW and permissive paths at the Estate's perimeter, provision of circular walks and improved signage for access users.

3.1.4 These mitigation and/or enhancement measures within and around the EDF Energy Sizewell Estate will, among other things, collectively apply best practice and good design to reduce the number of people who might otherwise be displaced to European Sites.

3.2 Potential for additional recreational pressure at European Sites due to the displacement of existing users of informal outdoor recreation sites and routes

3.2.1 The 2014 Sizewell C visitor surveys report in ES Volume 2 Appendix 15A (Doc Ref. 6.3) provides a detailed assessment of the likely potential displacement of recreational users to European Sites in response to the SZC project recorded in the 2014 Sizewell C visitor surveys, focusing on the response to questions that inform an understanding of potential displacement. The conclusions of the analysis are provided below, together with Tables 1a and 1b showing the alternative areas displaced people stated that they are likely to be displaced to during the construction of SZC, and whether these are within or near (within easy walking distance of) European Sites.

3.2.2 151 (29%) of the 514 questionnaire survey respondents stated that they would be displaced naming 182 locations across Tables 1a and 1b (third column of each table). 46 (8.9%) of the 514 questionnaire survey respondents were dog walkers who said that they would be displaced (combined totals from fourth columns of Tables 1a and 1b).

Table 3.1: Alternative areas within the study area that all displaced people, and those specifically with dogs would be likely to visit (2014 Sizewell C visitor surveys) (Figures 05A and 06A in ES Volume 2 Appendix 15A (Doc Ref. 6.3))

Displacement location	*Access site location ref.	n all who would be displaced	n all displaced dog walkers
	Within or near Minsmere to Walberswick SPA/SAC		
Dunwich Forest	K	4	2

Displacement location	*Access site location ref.	n all who would be displaced	n all displaced dog walkers
Dunwich/Beach	L	16	5
Dunwich Heath	Q	12	3
Eastbridge	R	8	6
Minsmere	O/P	19	3
Southwold	G	9	2
Walberswick	F/H	6	1
Westleton	M/N/O	7	1
Westwood Marshes	J	1	0
Within or near Sandlings SPA			
Aldringham Walks	S	3	3
North Warren Nature Reserve	X	3	2
Rendlesham	FF	4	0
Sandlings Walk	-	3	1
Thorpeness	T	20	8
Tunstall Forest	CC	7	3
Within or near Minsmere to Walberswick SPA/SAC and Sandlings SPA			
Leiston Common	-	1	1
Sizewell Beach	-	10	8
Sizewell Belts	-	1	1
Within or near Alde-Ore Estuary SPA and Alde, Ore and Butley Estuaries SAC			
Orford	EE	4	1
Within or near Sandlings SPA and Alde-Ore Estuary SPA and Alde, Ore and Butley Estuaries SAC			
Aldeburgh	V/W	15	5
Butley	DD	1	1
Iken	BB	3	1
Sailors Path	AA/Y/Z	2	0
Snape	Z/AA	5	1
Not within or near a SPA or SAC, or displacement location undefined			
Carlton Park	-	1	0

Displacement location	*Access site location ref.	n all who would be displaced	n all displaced dog walkers
Golf Course	-	2	1
Greenwood	-	1	1
Knodishall	-	1	0
Middleton	-	1	0
Pound Farm	-	2	1
Saxmundham	-	1	0
Theberton	-	1	0

n = number

Table 3.2: Alternative areas outside the study area that all displaced people and those specifically with dogs would be likely to visit (2014 Sizewell C visitor surveys) (Figure 05B and 06A in ES Volume 2 Appendix 15A (Doc Ref. 6.3))

Displacement location	n all who would be displaced	n all displaced dog walkers	Name of SPA or SAC
Cley Marshes	1	0	North Norfolk Coast SPA/SAC, The Wash and North Norfolk Coast SAC
Fritton	1	0	Not within or near a SPA or SAC
Kessingland	1	0	Benacre to Easton Bavents Lagoons SPA/SAC
Leighton Moss	1	0	Leighton Moss SPA, Morecambe Bay SAC, Morecambe Bay Pavements SAC
Lowestoft	1	1	Broadland/The Broads SPA/SAC
Shingle Street	1	0	Alde-Ore Estuary SPA, Alde, Ore and Butley Estuaries SAC, Orford Ness-Shingle Street SAC
Thetford	1	0	Breckland SPA/SAC
Woodbridge	1	0	Deben Estuary SPA

3.2.3 Some 65% of the 514 respondents said that they would not stop using the area around SZC during construction, 29% (including local residents and visitors to the region) said they would stop using the area and 2.5% said they were not sure.

3.2.4 The 2015 Sizewell C RSPB Minsmere visitor surveys found that 28% of visitors said they would be displaced during the construction phase of SZC, a figure which correlates with the results of the 2014 Sizewell C visitor surveys. The locations are given in Tables 2a and 2b below. 37 (28%) of the 133 2015 Sizewell C RSPB Minsmere visitor surveys respondents stated that they would be displaced naming 40 locations across Tables 2a and 2b (third column of Table 2A and second column of Table 2b).

Table 3.3: Alternative areas within the study area that displaced people from Minsmere would be likely to visit (2015 Sizewell C RSPB Minsmere visitor surveys) (Figure 05A in ES Volume 2 Appendix 15B (Doc Ref. 6.3))

Displacement location	*Access site location ref.	n all who would be displaced
Within or near Minsmere to Walberswick SPA/SAC		
Blythburgh	D	1
Dunwich Forest	K	1
Dunwich	L	1
Dunwich Heath	Q	3
Minsmere	O/P	3
Southwold	G	2
Walberswick	F/H	2
Within or near Sandlings SPA		
Thorpeness		1
Within or near Sandlings SPA and Alde-Ore Estuary SPA and Alde, Ore and Butley Estuaries SAC		
Aldeburgh	V/W	6
Hazelwood Marshes	J	1
Iken	BB	1
Within or near Sandlings SPA and Alde-Ore Estuary SPA, Alde, Ore and Butley Estuaries SAC and Orfordness-Shingle Street SPA		
Boyton	DD	3

Table 3.4: Alternative areas outside the study area displaced people from Minsmere would be likely to visit (2015 Sizewell C RSPB Minsmere visitor surveys) (Figure 05B in ES Volume 2 Appendix 15B (Doc Ref. 6.3))

Displacement location	n all who would be displaced	Within or near to a SPA and/or SAC
Cornwall	1	Undefined precise location
Framlingham	1	No
Fingringhoe	1	Essex Estuaries SAC, Colne Estuary SPA
Flatford	1	Stour and Orwell Estuaries SPA
Norfolk	3	Undefined precise location
Scotland	1	Undefined precise location
Lakenheath	1	Breckland SPA/SAC
Shingle Street	1	Orfordness -Shingle Street SAC
Sutton Heath	2	Sandlings SPA, Deben Estuary SPA
Titchwell	1	North Norfolk Coast SPA/SAC, The Wash & North Norfolk Coast SAC
Wicken Fen	2	Fenland SAC

a) Published evidence regarding perception surveys and actual likely behaviour

3.2.5 The survey data secured in the 2014 Sizewell C visitor surveys gives a strong indication of trends based on a logical survey sampling strategy that was agreed with consultees. The use of survey data and techniques has been subject to academic study and the following is noted from recognised studies. Based on this published evidence (which is discussed below), the actual percentage of people who will be displaced by the construction of SZC is likely to be significantly less than the 29% of respondents who said that they would be displaced in the visitor surveys (ES Volume 2 Appendix 15A (Doc Ref. 6.3)).

3.2.6 Published research has identified that perception surveys asking how people would respond to a potential future change are subject to a number of biases which mean the results are unlikely to correspond accurately to actual behaviour (J. Scott Armstrong (2001), Andrew Parker (2006) and Fennell, Harris and Huir (1988)). These include overclaim, framing errors or loss aversion, information bias and response bias due to the prominence of the issue being surveyed. These are inevitably hard to overcome in short face-to-face interviews. Any survey cannot provide all the facts and images relevant to the questioning. As a result, people fill in the gaps based on

what they already know and therefore answer questions based on pre-existing bias rather than the facts and actual effects that will occur. They are also subject to loss aversion, in this case a perceived harm to, for example, views and environment; and overclaim, where stated intentions or responses are not matched by actual changes in behaviour. Bias due to issue prominence is also difficult to overcome. As it is obvious what the survey is about, people hold that issue in their mind more than the background features that make them visit an area in the first place. As a result they overstate its importance simply because it is in the forefront of their minds. Use of the raw user survey data therefore needs to take account of these factors.

3.2.7 Kroes and Sheldon (1988) state that:

> *"There is significant disadvantage [when compared to revealed preference methods] that people may not necessarily do what they say." They go on to say that this is problematic where: "research undertaken to estimate demand levels uses only stated preference data."*

3.2.8 McConnell, Weninger and Strand (1999) state that:

> *"A revealed preference decision may be completely independent from the preference structure that governs the stated preference decision. If so, the information gleaned from stated preference methods is arbitrary and can lead to unreliable estimates of trip value."*

3.2.9 Azevedo, Herriges and Kling (1999) argue that stated preference methods are viewed as valuable only if they are consistent with their revealed preference counterparts.

3.2.10 Carmon and Simonson (1998)) describe issue prominence as the phenomenon that "*choices tend to weight the prominent attribute more heavily than matching answers*." Results of their study suggest the gap between respondents' stated preference and their revealed preference is 59%.

3.2.11 Research by Ipsos MORI presented for an online survey on tourism effects in North Yorkshire Moors National Park (Ipsos Public Affairs: North York Moors Visitor Survey, 18.7.14, p.55) identifies that steps can be taken to take past behaviour into account, presenting confidence intervals for responses or applying a factor to discount the magnitude of the effect in reality, at 0.3 when a respondent states they are 'less likely to visit' and 0.75 for 'unlikely to visit in the near future or again'.

3.2.12 The use of the figures from the survey of potential displacement findings recorded in Section 3.2 to inform the prediction of increases of visitors to European Sites therefore has risks. If the Ipsos MORI method noted above is deployed and the factor of 0.3 were to be applied to the figure that 29% of respondents would be displaced recorded in the 2014 Sizewell C visitor surveys or the 28% recorded in the 2015 Sizewell C RSPB Minsmere visitor surveys, the predicted percentage of visitors who are likely to be displaced would be reduced to approximately 9%; this 'lowering' of predicted displacement figures would also apply to other visitor categories including dog walkers. However, a precautionary approach has been taken to the SZC HRA potential displacement evidence base, and the recorded figures presented in the 2014 Sizewell C visitor surveys (Volume 2 Appendix 15A (Doc Ref. 6.3)) are used as the basis for estimating the potential increase in recreational pressure at European Sites (i.e. 29% of respondents who would be displaced). Potential displacement percentages have not been factored downwards despite this published evidence, to minimise the risk of underestimating potential effects.

b) Displacement analysis of the 2014 Sizewell C visitor surveys

3.2.13 40 potential displacement locations were given by the 151 respondents who said that they would be displaced in the 2014 Sizewell C visitor surveys (with some people giving more than one location) (Tables 1a and 1b above) of which 32 are within or near European Sites within the study area. The location of these potential displacement locations in relation to European Sites are shown on Figure 05A in Volume 2 Appendix 15A (Doc Ref. 6.3). The survey results suggest that dog walkers would displace mainly to other locations on the coast (see Figure 06A in Volume 2 Appendix 15A (Doc Ref. 6.3)).

3.2.14 23 potential displacement locations were given by the 37 respondents who said that they would be displaced in the 2015 Sizewell C RSPB Minsmere visitor surveys report (with some people giving more than one location) (Table 2a above) of which 18 are within or near European Sites. The locations of these potential displacement locations in relation to European Sites are shown on Figure 05A in ES Volume 2 Appendix 15B (Doc Ref. 6.3).

3.2.15 Most displaced people would not travel very far and gave a wide variety of locations they considered they would be displaced to (96% of the locations those who would be displaced would go to fall within the study area recorded in the 2014 Sizewell C visitor surveys and 63% within the study area recorded in the 2015 Sizewell C RSPB Minsmere visitor surveys). This variety of locations represent a diffused displacement of recreational activity.

3.2.16 The main reasons people gave as to why they would use these alternative areas in the 2014 Sizewell C visitor surveys were because they were considered a safe distance away from the construction zone, a similar landscape to that they would wish to avoid, no noise, clear access, good paths, close to home, bird watching, good for the children or good for the dog. The main reasons people gave as to why they would use these alternative places in the 2015 Sizewell C RSPB Minsmere visitor surveys were for their wildlife, having a similar landscape to Minsmere, peace and quiet and good paths for walking.

3.2.17 Of the respondents who indicated they might want to avoid the paths around the construction site in the 2014 Sizewell C visitor surveys, some 60.2% would be prepared to travel up to 5 miles (8km) to an alternative site and the rest would travel further (up to 20 miles or more than 20 miles (32km)); the majority by driving, some on foot or by cycle but very few by public transport or by sharing a lift.

3.2.18 The SPAs and SACs referred to in Tables 1a, 1b, and Ramsar sites, are shown on Appendix A Figures 001 and 002 (Doc Ref. 6.3). A total of 22 locations within or close to SPAs and SACs recorded in the 2014 Sizewell C visitor surveys are located within the study area. Minsmere to Walberswick European Site is identified as potentially receiving the highest numbers of displaced people and dog walkers from the survey, being named by a total of 88 (17.1%) out of the 514 respondents[5] of which 29 (5.6% of 514 respondents) were dog walkers. Specifically the sites most identified within or near Minsmere to Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC are Dunwich / Dunwich Beach (16 people (3.1% of 514 respondents), 5 dog walkers (1.0% of 514 respondents)), Dunwich Heath (12 people (2.3% of 514 respondents), 3 dog walkers (0.6% of 514 respondents)) and Minsmere (19 people (3.6% of 514 respondents) and 3 dog walkers (0.6% of 514 respondents)).

3.2.19 The Sandlings European Site was identified as potentially receiving the second highest numbers of displaced users, being named by a total of 47 respondents (9.1% of 514 respondents) of which 18 were dog walkers (3.5% of 514 respondents). Thorpeness was identified as the most likely site near to Sandlings SPA that users will be displaced to (20 displaced people (3.9% of 514 respondents) and 8 dog walkers (1.6% of 514 respondents)).

3.2.20 The Alde-Ore Estuary European Site was identified as potentially receiving the third highest numbers of displaced users, being named by a total of 30

[5] Some people gave more than one location resulting in 182 responses from 151 people.

respondents (5.8% of 514 respondents) of which 9 were dog walkers (1.8% of 514 respondents). Aldeburgh was identified as the most likely site near to the Alde, Ore and Butley Estuaries SAC and the Alde - Ore Estuary SPA and Ramsar that users will be displaced to (15 displaced people (2.9% of 514 respondents) and 5 dog walkers (1.0% of 514 respondents)).

3.2.21 The Orfordness - Shingle Street European Site was only identified as potential displacement site by one respondent.

c) Potential to interpret where respondents might be displaced to within European Sites

3.2.22 Section 5 of this report discusses how people currently access the European Sites when travelling to them by car (which applies to the majority of respondents who said that they would be displaced). People have a variety of choices of access locations from which to start their visit as can be seen by the range of car parks within or near the European Sites shown on Appendix A Figures 001 and 002 (Doc Ref. 6.3). For example, 900 car parking locations have been identified within or on the edge of the Minsmere to Walberswick European Site (see Figures 001 and 002 Access points C, D, E, F, H, I, J, L, M, N, O, P and Q), and 118 within or close to the Sandlings European Site at Aldringham Walks (see Figures 001 and 002 Access points S, T and X).

3.2.23 In many cases it is not possible to locate which access location(s) respondents who named potential displacement locations would visit; for example:

- 6 visitors including 1 dog walker said that they would be displaced to 'Walberswick' (Table 1a). Westwood Marshes also lies within the Walberswick National Nature Reserve where 1 visitor said that they would be displaced, equating to a total of 7 visitors including 1 dog walker displaced to 'Walberswick'. Potential car park locations that could be defined as 'Walberswick' include the large beach car park at Walberswick village (access site H on Figure 001), as well as four other car parks west of the settlement at Walberswick National Nature Reserve (access sites C, D, E, F, G, I and J on Figure 001). Displaced visitors who stated 'Walberswick' or 'Westwood Marshes' could, therefore, travel to a range of car park locations within or near the northern part of the Minsmere to Walberswick European Site.
- 19 visitors including 3 dog walkers said that they would be displaced to 'Minsmere' (Table 1a). Minsmere includes the formal car park at the RSPB visitor centre (access site P), and informal car parking off the sides of access roads within the southern part of the Minsmere to Walberswick European Site and within the RSPB Minsmere Reserve

(access sites 'O') (see Figure 005) and at other informal parking on road verges on the access roads within and approaching the reserve. It is considered more likely that people would displace to the informal parking areas where they can walk their dogs and let dogs off lead (e.g. access sites 'O') rather than the formal car park at the RSPB visitor centre (access site 'P') because while dogs are allowed in the café, apart from assistance dogs they are not allowed on the paid-for permissive access trails in the core area, accessed via the visitor centre; however this cannot be predicted with any certainty.

3.2.24 At other named locations, for example Dunwich Heath, Thorpeness or Snape Maltings, it can be predicted with more certainty where displaced users travelling by car would park because there are fewer and more concentrated parking/access locations at these destinations. At Dunwich Heath it can be assumed that people would use the National Trust car park, and at Thorpeness it can be assumed that people would use the car park or park on roads.

d) Estimation of numbers of displaced visitors to European Sites

3.2.25 Using the data obtained from the 2014 Sizewell C visitor surveys an attempt has been made to estimate the likely number of extra visits that could be made to the various locations adjacent to or within the European Sites under consideration and to which people said they might relocate.

3.2.26 Extrapolating from the survey questionnaire data has its difficulties, the main one being that large potential errors in the extrapolation calculations may arise as the numbers of respondents to the 2014 Sizewell C visitor surveys who said they would be displaced to a given location are all small, i.e. less than 20 out of the 514 respondents in every case for all locations and less than 10 in all cases for the dog walkers. This generates small percentages and therefore large potential errors in the subsequent stages of the extrapolation calculations. The following should also be noted:

- the observation survey only accounts for people seen at the locations and not for other people in the area that may not have been counted / observed;
- some people are likely to have been counted more than once on the same day as they moved between survey points; and
- extrapolating numbers recorded over two weekends to a whole year has inherent inaccuracies and the actual numbers would be subject to many variables.

i. Calculation of annual visits to the area

3.2.27 The total number of users observed over the survey days in the 2014 Sizewell C visitor surveys relate to part of the year from fixed locations which were agreed with consultees. Estimated annual levels of use based on counts at each of the seven 2014 Sizewell C visitor surveys locations is given in Table 8 of the 2014 report (ES Volume 2 Appendix 15A (Doc Ref. 6.3)). These estimates are based on the observation surveys using a recognised methodology for predicting total users used by the Heritage Lottery Fund. This gives a total of 517,246 estimated visitors per year at all seven locations (rounded to 500,000 in the calculations below), and estimated numbers at individual locations ranging from 10,171 (at Bridleway 19) to 195,557 (at Sizewell Beach).

ii. Calculations of additional visits to European Sites

3.2.28 Two approaches to extrapolating the survey data have been used to determine the potential percentage increase in visits per year at the individual locations. The first approach, which is considered to represent the most realistic situation, has been calculated by determining the percentage of survey respondents who said that they would be displaced to each named location (see column 1 in Table 3) and then determining the increase in the number of visits that this additional percentage of visitors would generate at each of the displacement locations (columns 3 and 4). The additional proportion of visits has then been calculated as a percentage increase (column 5) above the estimated existing number of visits to the individual locations (column 2).

3.2.29 The figures in column 2 have been estimated as follows. There are five locations for which measured visitor numbers are available from the 2014 Sizewell C visitor surveys and the Minsmere Surveys conducted in 2018: RSPB Minsmere, Aldringham Walks, Dunwich Heath, Eastbridge and Sizewell Beach (although Aldringham Walks has been rounded up in Table 3 as a result of site observations). Local knowledge of the area, thirty years of data from hundreds of other outdoor visitor destinations, the CASE 2013 figures and other data supplied to EDF Energy by Natural England (for Westleton Heath NNR, Walberswick NNR and Benacre NNR) have been used to allocate the locations to one of three categories - a low (10,000 visits per year), medium (60,000 per year) or high (150,000 per year) level of use for the other locations that were not counted during the 2014 Sizewell C visitor surveys. The figures in column 2 have then been based on the median value between the range limits for each level of use category e.g. 60,000 visits per year for the medium level of use category from 20,000 to 100,000 visits per year.

3.2.30 The second approach to extrapolating the survey data adopts the same method as the first, except that the calculated number of additional visits to each specified location (columns 7 and 8 in Table 3) has been taken as a percentage of an estimated 500,000 existing annual visits to the Sizewell survey area described above. This enables a figure for the number of displaced visits to each location to be calculated, for which a percentage increase above the existing annual number of visits to each location can then be calculated[6]. This approach is considered to be precautionary (i.e. provides larger numbers than are expected to occur) in that it assumes that visitor numbers can be extrapolated up to provide a figure for the total number of visits over the year. In reality, many of the visitors recorded during the survey will visit the Sizewell area only a few times during a year.

Table 3.5: Extrapolated visitor numbers for locations given by survey respondees as sites to which they would relocate during construction of SZC

			Most 'realistic' approach			'Precautionary' approach		
Column No.	1	2	3	4	5	6	7	8
Location	% of survey visitors displaced to location	Existing visitor numbers to location	Extra visits / year	Extra visits / day	% extra over existing visits	Extra visits / yr based on 500,000 visits in Sizewell area	Extra visits / day	% extra over existing visits
Aldeburgh	2.92%	150000	4380	12.0	2.9	14600	40	9.7
Butley	0.19%	10000	19	0.05	0.2	950	2.6	9.5
Iken	0.58%	60000	348	1.0	0.6	2900	7.9	4.8
Orford	0.78%	150000	1170	3.2	0.8	3900	10.7	2.6
Sailors Path	0.39%	60000	234	0.6	0.4	1950	5.3	3.2
Snape	0.97%	150000	1455	4.0	1.0	4850	13.3	3.2
Aldringham Walks	0.58%	60000	348	1.0	0.6	2900	7.9	4.8
North Warren	0.58%	60000	348	1.0	0.6	2900	7.9	4.8
Rendlesham	0.78%	150000	1170	3.2	0.8	3900	10.7	2.6

[6] For example, the estimated annual increase of 14,600 visits to Aldeburgh is calculated as 2.92% of 500,000 (2.29% of the 514 visitors surveyed in the questionnaire of the 2014 Sizewell C visitor surveys said that they would displace to Aldeburgh).

			Most 'realistic' approach			'Precautionary' approach		
Column No.	1	2	3	4	5	6	7	8
Location	% of survey visitors displaced to location	Existing visitor numbers to location	Extra visits / year	Extra visits / day	% extra over existing visits	Extra visits / yr based on 500,000 visits in Sizewell area	Extra visits / day	% extra over existing visits
Sandlings Walk	0.58%	150000	870	2.4	0.6	2900	7.9	1.9
Thorpeness	3.89%	60000	2334	6.4	3.9	19450	53.3	32.4
Tunstall Forest	1.36%	150000	2040	5.6	1.4	6800	18.6	4.5
Dunwich Heath	2.33%	175934	4099.3	11.2	2.3	11650	31.9	6.6
Dunwich/Beach	3.11%	150000	4665	12.8	3.1	15550	42.6	10.4
Eastbridge	1.56%	38871	606.4	1.7	1.6	7800	21.4	20.1
Minsmere Core	0.74%	103,844	768.4	2.1	0.7	3700	10.1	3.6
Minsmere Outer	2.96%	30000	888	2.4	3.0	14800	40.5	49.3
Sizewell Beach	1.95%	195557	3813.4	10.4	1.9	9750	26.7	5.0
Southwold	1.75%	150000	2625	7.2	1.8	8750	24	5.8
Walberswick	1.17%	150000	1755	4.8	1.2	5850	16	3.9
Westleton	1.36%	60000	816	2.2	1.4	6800	18.6	11.3
Westwood Marshes	0.19%	60000	114	0.3	0.2	950	2.6	1.6

3.2.31 Of those who may be displaced, similar calculations can be used to estimate the increases in numbers of them who are dog walkers (Table 4).

Table 3.6: Extrapolated visitor numbers for locations given by survey respondees as sites to which they would relocate during construction of SZC – dog walkers

			Most 'realistic' approach		'Precautionary' approach	
Column No.	1	2	3	4	6	7
Location	% of survey visitors displaced who were dog walkers	Existing visitor numbers to locations	Extra dog visits / year	Extra dog visits / day	Extra visits / yr based on 500,000 visits in Sizewell area	Extra visits / day
Aldeburgh	0.97%	150000	1459	4.0	4864	13
Butley	0.19%	10000	19	0.05	950	9.5
Iken	0.19%	60000	117	0.3	973	3
Orford	0.19%	150000	292	0.8	973	3
Sailors Path	0.00%	60000	0	0.0	0	0
Snape	0.19%	150000	292	0.8	973	3
Aldringham Walks	0.58%	60000	350	1.0	2918	8
North Warren	0.39%	60000	233	0.6	1946	5
Rendlesham	0.00%	150000	0	0.0	0	0
Sandlings Walk	0.19%	150000	292	0.8	973	3
Thorpeness	1.56%	60000	934	2.6	7782	21
Tunstall Forest	0.58%	150000	870	2.4	2900	7.9
Dunwich Heath	0.58%	175934	1027	2.8	2918	8
Dunwich/Beach	0.97%	150000	1459	4.0	4864	13
Eastbridge	1.17%	38871	454	1.2	5837	16
Minsmere Core	0.464	103844	481.8	1.3	2320	6.4
Minsmere Outer	0.116	30000	34.8	0.1	580	1.6
Sizewell Beach	1.56%	195557	3044	8.3	7782	21
Southwold	0.39%	150000	584	1.6	1946	5
Walberswick	0.19%	150000	292	0.8	973	3

			Most 'realistic' approach		'Precautionary' approach	
Column No.	1	2	3	4	6	7
Location	% of survey visitors displaced who were dog walkers	Existing visitor numbers to locations	Extra dog visits / year	Extra dog visits / day	Extra visits / yr based on 500,000 visits in Sizewell area	Extra visits / day
Westleton	0.19%	60000	117	0.3	973	3
Westwood Marshes	0.00%	60000	0	0.0	0	0

3.3 Summary of likely recreational use of the Sizewell area by construction workers

3.3.1 This section describes the construction workforce required to build the SZC development and the potential for increased visitors to European Sites.

a) Construction workers - analysis of workforce profile

3.3.2 In addition to identifying the overall size of the construction workforce required to construct SZC, this section highlights aspects of this workforce in terms of its level of net additional population in the area, the type of accommodation and location of temporary residence and the demographic characteristics (including dog owners), all of which help to identify the level to which workers are likely to influence the numbers of recreation visitors to European Sites.

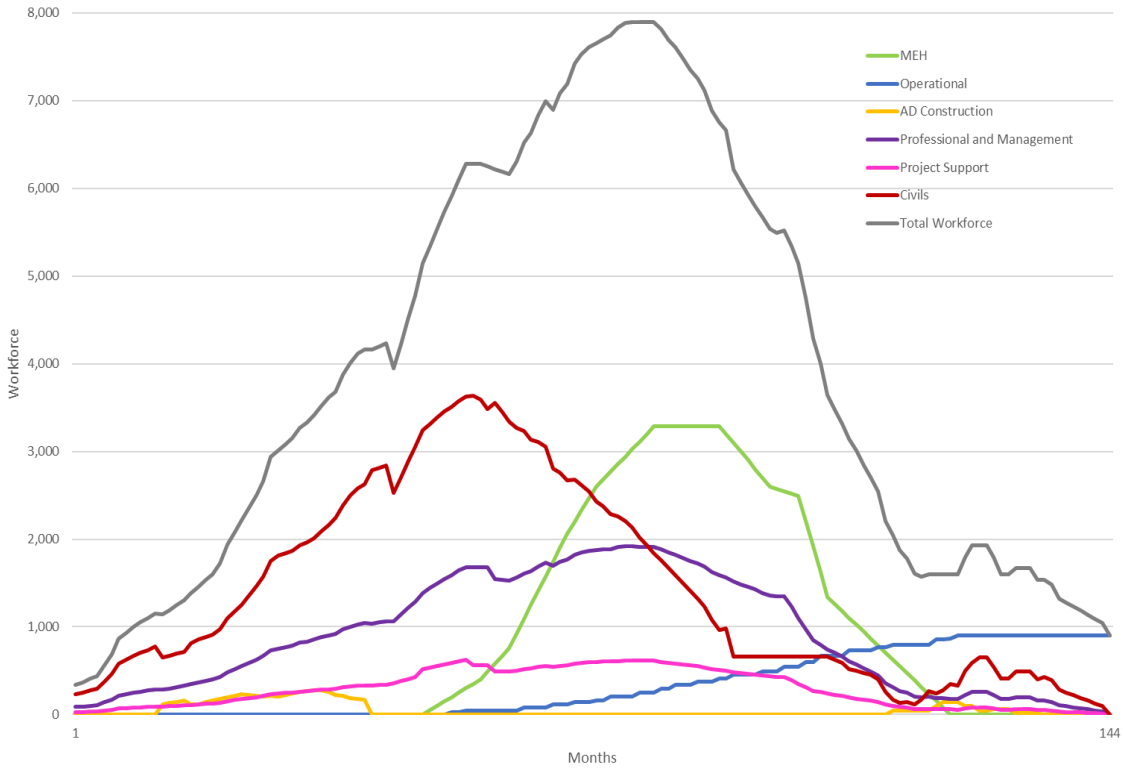
3.3.3 The approach taken to estimating the potential contribution of recreational user activity that may occur at European Sites due to construction workers is based on the best available data. The approach is based on developing a precautionary prediction for the size, location and characteristics of the workforce, alongside project-information on shifts, workforce requirements and facilities designed as part of the SZC construction project plan. This assessment is based on the peak figures (i.e. when construction workers, and consequently numbers potentially visiting European Sites, are likely to be at their highest) to inform the HRA evidence base as a 'worst-case' scenario. It should be noted that these peak numbers will only last for a short time and, for most of the construction phase, numbers will be lower.

3.3.4 Significant work has been done to predict the size, location, demographic and recreation characteristics of the workforce at the peak of construction

(worst-case scenario) which, combined with detail about the SZC project and contractor information about the workforce, can be used to inform the HRA evidence base.

3.3.5 Approximately 7,900 workers are required for a very short period at peak during the construction of SZC. A workforce of 7,000+ workers is likely to be on-site for approximately 20% of the overall construction timeline (2 years of the (up to) c.12 year construction period). Either side of the peak of construction (see **Error! Reference source not found.**), the workforce would be lower and therefore would generate less demand for informal recreation.

Plate 3.1: Indicative Workforce Profile



3.3.6 At the peak, approximately 2,000 of the 7,900 workers will be drawn from the existing population within the vicinity of SZC, and therefore would not be net additional to the area, and have no net additional effect on recreation activity in the local area.

3.3.7 The remaining workers (approximately 5,900) will be 'non-home-based' (NHB). NHB workers are workers who do not currently live in the local area

(within an hour's commute to the Main Development Site) and would find temporary accommodation in that area during the construction phase.

3.3.8 Of these peak NHB workers:

- Up to 2,400 are anticipated to be based in the campus at the construction site. Formal and informal recreational facilities will be provided for workers, limiting the propensity for them to seek recreation. Workers who live at the campus will be more likely to:
  - Have chosen to live at the site to minimise travel time given long shifts;
  - Be working on the construction project for short tenures;
  - Be living alone because families or pets would not be allowed to stay at the campus;
  - Favour formal recreation including football and gym activity using facilities provided by the project, over informal recreation – (Sport England market research shows these are by far the most undertaken recreation activities by the construction worker demographic – see below);
  - Work in shifts, limiting the time when all workers may be looking to undertake recreation activity at the same time;
  - Return home at weekends / at the end of their working period.
- Approximately 880 workers are expected to buy homes (owner occupied) (mostly management and professional roles) and therefore are not considered net additional in terms of impacts. This will include approximately 240 workers who will be operational employees at this point.
- Approximately 2,000 are expected to stay in private rented sector (PRS) or tourist accommodation in the area, up to around 60-minutes drive-time from SZC. It is envisaged that these workers will have access to formal and informal recreational facilities provided to construction workers, but are otherwise identified as the likely net additional population potentially impacting on European Sites.
- Approximately 600 workers are expected to stay in caravans at a designated area in the Land to the East of Eastlands Industrial Estate (LEEIE) - these workers are likely to share the characteristics of the 2,400 campus-based workers set out above.

3.3.9 There are some factors which will help to limit the potential increase in visitor and dog numbers to European Sites generated by construction workers. For example:

- Workers at the campus and designated caravan site will not be allowed dogs (at least 3,000 out of around 7,900 workers that will be required at peak).
- The results of a survey undertaken on behalf of EDF Energy indicates that approximately only 37% of long-term let properties within a 20-mile (32km) radius of Sizewell accept one dog (Jenkinson, January 2016 – see Appendix D), and the majority are unlikely to allow dogs.
- The peak within the construction period is likely to be relatively short-lived (2 years), with much smaller gross numbers of workers straddling this peak period.
- The demographic of the workforce based on 2011 Census data, and information from Sport England's Market Segmentation research, indicates that workers are more likely to seek formal recreation options (i.e. not visit European Sites).
- The 2,000 PRS and tourist-based workforce will be spread over a wide area, and therefore, if they do undertake informal outdoor recreation they are likely to do so at locations spread over a wide area, thus diffusing effects. There will, however, be a concentration within the Displacement Zone; Appendix A Figure 011 shows the potential distribution of PRS and tourist-based workers in this accommodation sector by ward and illustrates that there is a concentration of PRS workers to the east of the A12 with the largest numbers in Leiston, Aldeburgh and Saxmundham.
- Many job and therefore accommodation tenures are short (although there are 7,900 workers at peak, there are tens of thousands of job roles throughout the construction period), shifts tend to be long, and many workers are likely to return to their permanent address at weekends or at the end of their 'on' period.

3.3.10 There is no specific research on the propensity for construction workers to undertake informal, outdoor recreation activities such as walking/hiking or cycling, although assumptions can be made based on the likely demographic profile of workers and market segmentation assumptions (Sport England) on participation in sports and recreation. However, the following inferences can be drawn:

- The construction workforce will work in shifts, limiting the time when all workers may be looking to undertake recreation activity.
- The workforce will be dominated by men aged 20-50, based on the national breakdown of people employed in the construction industry. The key sport/recreation characteristics for this demographic group are:
  - preference and higher than national average participation in organised/formal sport – main reason is to meet friends;
  - football and gym are overwhelmingly favoured as activities;
  - work commitments are a significant reason for not undertaking recreation activity; and
  - other than sport, these groups are less likely to take part in recreation and leisure activities outside of the home.

3.3.11 Based on market segmentation assumptions of demographic profiles (Sport England) it is anticipated that approximately 12% of the likely workforce may participate in cycling once per month, although it is not clear for what purpose i.e. recreation, commuting to work, whether on road or off road, and the above workforce characteristics are likely to dilute this propensity further. Therefore, while some construction workers will bring bikes, it is not possible to estimate the likely number and the potential impacts on European Sites which could potentially be caused by off-road cyclists. Mitigation measures, such as wayfinding and information signage, could assist in the redirection of construction workers that intent to cycle for recreational purposes towards appropriate destination for cycling activities.

b) Estimation of numbers of construction worker visits to European Sites

3.3.12 There is a range of data that can be reasonably applied to estimate the frequency with which construction workers will access the natural environment in and around their temporary accommodation. This is due in part to the very specific nature of the construction worker demographic, working/shift patterns and non-work activities; and in part due to lack of detailed information or research for construction workers' informal recreation habits.

3.3.13 For example, the MENE Headline Report (2017-2018) states that around three in five adults living in England (62%) reported taking visits to the natural environment at least once a week – but this includes people from all social and working groups of the national population, and relates to visits to all types of green open spaces in and around towns and cities as well as the wider countryside and coastline, including places that are not relevant

to the European Sites (e.g. children's playgrounds, villages, parks in towns or cities and playing fields), at a national level. For these reasons, the national MENE figure for visits to outdoor informal recreational resources is unlikely to be a representative or accurate estimate when applied to construction workers on the Project. For the several reasons listed above, it is considered that Sizewell construction workers would visit the outdoors much less often.

3.3.14 Survey data and research (EETB, 2004) outlined elsewhere in this Report estimates that the seven survey locations account for around 517,000 visits per year, and that an estimated 33% of day visits are made by people who live in Suffolk Coastal. Based on this level of market penetration, treating construction workers as 'average' residents of SCDC visiting the survey locations, the market penetration would be very low – around 1.5% visiting once per week. If the market penetration rate for tourists staying in SCDC and visiting the survey locations is used, the figure would be lower still.

3.3.15 Given the uncertainty and range of methodological approaches for calculating an approximate number of additional visits to European Sites for the SZC HRA evidence base, a mid-range estimate has been set at around 10% of the campus, PRS and tourist accommodation based workers (who do not have dogs with them) being likely to visit outdoor informal recreational resources around Sizewell once a week.

3.3.16 In terms of dog ownership, it is also considered that:

- Campus based workers will not have dogs due to restrictions on the accommodation contract; and
- Around 10% of construction workers in PRS and tourist accommodation will have dogs and will walk them daily.

3.3.17 Table 5 shows how estimated numbers of visits of construction workers to outdoor informal recreational resources around Sizewell are calculated, making an allowance for the workers in PRS and tourist accommodation not being in the area (i.e. returning home) during leave periods, and sometimes between shift periods (column 5).

Table 3.7: Estimated number of construction workers who do not have dogs who may visit outdoor informal recreational resources around Sizewell

	1	2	3	4	5
	Number at peak	Number who do not have dogs (100% campus, 90% PRS & tourist)	Number visiting informal outdoor recreational resources once a week (10% of column 2)	Number of visits per year (column 3x365)	Allowance for shift patterns (87%) and holidays (45 out of 52 weeks / yr (87%))
Campus or caravan site-based workers	3,000	3,000	300	15,600	11,808
Workers in private rented and tourist accommodation	2,000	1,800	180	9,360	7,085
	5,000	**4,800**	**480**	**24,960**	**18,892**

3.3.18 Table 6 shows how numbers of construction workers in PRS and tourist accommodation are estimated to visit outdoor informal recreational resources around Sizewell with dogs. Campus based workers will not be allowed dogs so are not discussed further.

Table 3.8: Estimated number of construction workers who may visit outdoor informal recreational resources around Sizewell with dogs

	1	2	3	4
	Number who have dogs (10% of 2,000)*	Number of potential visits per year	Allowance for shift patterns (87%) and holidays (45 out of 52 weeks / yr (87%))	Allowance as note below (25%)*
Workers in PRS and tourist accommodation	200	73,000	55,254	13,813

*Column 4 excludes a proportion of walks that will be short regular walks from their accommodation as discussed in paragraphs below.

3.3.19 A long-established annual national survey of pet owners has identified that 23% of all homes within the East of England, and 25% of all UK homes, contain one or more dogs (Pet Food Manufacturers' Association 2019 – see Appendix E). PRS and tourist accommodation used by SZC construction workers are much less likely to contain a dog than the latter regional and national figures due to a range of factors, including:

- Limited availability of accommodation that allows dogs. As discussed above, research indicates that approximately only 37% of long-term let properties within a 20 mile (32km) (radius of Sizewell accept one dog (Jenkinson, January 2016 – see Appendix D). It is also possible that the demand for properties that allow dogs is greater than the availability of long-term let properties that accept dogs.
- Given the (long) length of shifts and temporary basis of employment tenure, the majority of workers who have access to a dog (i.e. there is one in their main permanent residence away from SZC) are unlikely to bring them to their temporary SZC accommodation. If their permanent home accommodation is shared with, for example, other family members, many are likely to leave the dog at home where it could have better care and be less disrupted by shift working patterns.
- Workers may not wish to leave dogs unattended at their PRS or tourist accommodation for long periods while they are at work, and the ability to do so may depend on their ability to locate and employ a dog walker. Thus the availability of dog walkers that workers could employ may also be a further limiting factor.

3.3.20 For these reasons 10% of workers are assumed to have dogs with them at their PRS and tourist accommodation for the purpose of the calculation (column 1) in Table 6; this is considered to be a precautionary estimate and it is likely that the actual percentage will be lower.

3.3.21 Column 4 makes an allowance for the fact that a large proportion of regular daily walks will be short walks local to their accommodation before and after shifts, often at night. Walks at European Sites would often require a car journey and (at night) the Sites would be dark (which would make them unattractive to many). It is estimated that this will apply to approximately 75% of walks with dogs.

3.3.22 The figures in column 5 of Table 5 and column 4 of Table 6 are used in Table 7 to estimate the potential numbers of visits by construction workers to visitor locations, including the likely most popular European Sites. Many construction workers who wish to visit outdoor informal recreational resources may to go to coastal locations with beaches, with some likely to go to sites inland. There is likely to be a concentration of PRS and tourist

accommodation based construction workers at accommodation within the Displacement Zone as discussed above; there will also be 2,400 campus-based workers south of Eastbridge and 600 workers in the LEEIE caravan site as shown on Figure 011. These workers may have cars and may get to recreation locations by means including driving, walking and cycling. Based on the results of the 2016 Outage Survey (Quod 2016) (presented in section 4.2.6) the locations in Table 7 below are expected to be the most visited.

Table 3.9: Estimated numbers of construction worker visits to locations per year

Locations most likely to visit					Construction workers who have dogs
	*Estimated % who visit location	No. campus or caravan site based workers visits to location/yr**	No. PRS & tourist based worker visits to location/yr***	Total construction worker visits to location/yr	No. PRS & tourist based worker visits to location/yr****
Sizewell Estate and beach (not European Sites)	18%	2125	1275	3401	2486
Aldeburgh	26%	3070	1842	4912	3591
Thorpeness	15%	1771	1063	2834	2072
Minsmere	2%	236	142	378	276
Dunwich Heath	1%	118	71	189	138
Dunwich/Beach	2%	236	142	378	276
Walberswick	1%	118	71	189	138
Southwold	9%	1063	638	1700	1243
Aldringham Walks	3%	354	213	567	414
Tunstall Forest	2%	236	142	378	276
Rendlesham Forest	2%	236	142	378	276
Westleton Heath	1%	118	71	189	138
Elsewhere (diffuse sites)	18%	2125	1275	3401	2486
Total	**100%**	**11808**	**7085**	**18893**	**13813**

*% taken from the 2016 Outage Survey (Quod 2016)
**Percentage of 11,808 in Table 5
***Percentage of 7,085 in Table 5
****Percentage of 13,813 in Table 6

3.4 Conclusions on the additional recreational pressure that may be generated at European Sites during the construction phase of the SZC project

a) Displacement of existing visitors

i. 2014 Sizewell C visitor surveys

3.4.1 29% of visitors completing questionnaires in the 2014 Sizewell C visitor surveys stated that they are likely to be displaced to another location during the construction phase of SZC. Published evidence on perception surveys indicates that the actual percentage of people who will be displaced by the construction of SZC is likely to be significantly less than 29%. However, a precautionary approach has been taken to the SZC HRA displacement evidence base, and the recorded figures presented in the 2014 Sizewell C visitor surveys (ES Volume 2 Appendix 15A (Doc Ref. 6.3)) are used as the basis for estimating the potential increase in recreational pressure at European Sites. Potential displacement percentages have not been factored downwards despite this published evidence, to minimise the risk of underestimating potential effects.

3.4.2 The majority of visitors are aware of other areas in close proximity to the construction area that would be less affected and still available to them.

3.4.3 Evidence suggests that these visitors would not be displaced very far and to a wide variety of locations (96% of the locations those who would be displaced would go to fall within the study area, i.e. within approximately 12.5 –17km of the Main Development Site Boundary), confirming the appropriateness of the study area for assessing effects due to displacement.

3.4.4 There are, therefore, a large number of alternative locations to where displaced visitors may go, spread over a wide area, diffusing potential increases in recreational pressure at individual European Sites.

3.4.5 The Minsmere to Walberswick SPA and Ramsar is identified as potentially receiving the highest numbers of displaced people (being named by a total of 88 (17.1%) out of the 514 respondents of which 29 (5.6% of 514 respondents) were dog walkers). The Sandlings SPA is also identified as an area potentially receiving high numbers of displaced people being named by a total of 47 respondents (9.1% of 514 respondents) of which 18 were dog walkers (3.5% of 514 respondents).

3.4.6 Approximately 66% of displaced visitors would be prepared to travel up to 5 miles (8km) to an alternative site and the rest would travel further, the

majority by driving. There are a range of car park locations at or near these European Sites to where displaced people may travel; these locations are discussed in detail in Section 5.

3.4.7 The areas identified as potentially receiving the highest numbers of displaced dog walkers are Sizewell beach (8 dog walkers out of 514 respondents (1.6%) and Thorpeness (8 dog walkers (also 1.6% of all respondents)), but there was a wide range of other coastal and inland locations (but given by fewer respondents) where dog walkers may go.

3.4.8 Walking is the most popular activity stated by existing visitors and a large proportion of walks are undertaken with dogs. A large proportion of dog walkers stated that they let their dogs off the lead at least once a day. Observations of the numbers of dogs on and off the lead showed that more dogs were observed to be off the lead (59-91%) than on the lead at all sites except Dunwich Heath National Trust Car Park. These results, which are supported by the HCC (2013) report discussed in Section 2.4, illustrate the importance of addressing displaced dog walkers when considering effects on and management at European Sites.

3.4.9 The 2014 Sizewell C visitor surveys has been used to estimate the potential numbers of additional visits (with and without dogs) to locations at or near European Sites in Section 3.2.

ii. 2015 Sizewell C RSPB Minsmere visitor surveys

3.4.10 A very similar percentage of RSPB Minsmere visitors said they are likely to be displaced to another location during the construction phase of SZC, compared to that in the 2014 Sizewell C visitor surveys – 28% and 29% respectively.

3.4.11 The pattern of displacement was diffuse with the Minsmere respondents who said they would be displaced citing 23 different places as the alternative areas they would be most likely to visit instead, 12 of which were within the study area. Of these the most frequently mentioned (by 3 or more respondents) were Aldeburgh (6), and Boyton, Dunwich Heath, Minsmere and Norfolk (3 each). The majority of people who might be displaced said that they would go to locations within the study area (96% of the locations those who would be displaced would go to fall within the study area recorded in the 2014 Sizewell C visitor surveys and 63% fall within the study area recorded in the 2015 Sizewell C RSPB Minsmere visitor surveys).

3.4.12 The 11 sites beyond the study area recorded in the 2015 Sizewell C RSPB Minsmere visitor surveys were Cornwall, Fingringhoe, Flatford, Framlingham, Lakenheath Fen, Norfolk, Scotland, Shingle Street, Sutton

Heath, Titchwell, and Wicken Fen Nature Reserve. The Minsmere survey respondents (their main interest being bird watching) were prepared to travel further afield than the 2014 Sizewell C visitor surveys respondents citing 11 sites beyond the study area compared to only eight in the main survey.

3.4.13 Of these other locations it was notable that a number were well known bird and nature reserves including RSPB Titchwell, Fingringhoe, Lakenheath Fen and Wicken Fen. The Minsmere respondents were looking for places that had a landscape quality, wildlife, peace and quiet and good paths for walking similar to Minsmere.

iii. Discussion on displacement in relation to the study area

3.4.14 Tables 8 and 9 below summarise two alternative ways of analysing the responses in relation to displacement within and outside the study area. Table 8 shows the number and percentage of locations that were named that lie within and outside the study area (locations that were named once or more than once are only recorded once). It can be seen that a greater percentage of displacement locations fall within the study area from responses given to the 2014 Sizewell C visitor surveys (80%) compared to the 2015 Sizewell C RSPB Minsmere visitor surveys (52%).

3.4.15 Table 9 shows the total number of responses that were given by the people who said that they would be displaced to the question 'which other areas are you likely to visit instead?'. Some people gave more than one location, and some locations were named by more than one person, hence the larger numbers than in Table 8. It can be seen that a greater percentage of the locations those who would be displaced would go to fall within the study area recorded in the 2014 Sizewell C visitor surveys (96%) compared to the 2015 Sizewell C RSPB Minsmere visitor surveys (62.5%[7]).

Table 3.10: Displacement locations within or outside the study area

	2014 Sizewell C visitor surveys		2015 Sizewell C RSPB Minsmere visitor surveys	
	Number	Percentage	Number	Percentage
Within the study area	32	80%	12	52%
Outside the study area	8	20%	11	48%
Total	**40**	**100%**	**23**	**100%**

[7] Rounded to 63% when discussed elsewhere in this report

Table 3.11: Locations of all of the responses of those who would be displaced

	2014 Sizewell C visitor surveys		2015 Sizewell C RSPB Minsmere visitor surveys	
	Number	Percentage	Number	Percentage
Within the study area	174	96%	25	62.5%
Outside the study area	8	4%	15	37.5%
Total	**182***	**100%**	**40****	**100%**

*182 locations were given by the 151 respondents who said that they would be displaced.

**40 locations were given by the 37 respondents who said that they would be displaced.

3.4.16 When the results of the 2014 Sizewell C visitor surveys were presented to consultees on 3 March 2015, RSPB requested additional visitor surveys within the reserve because they wanted a greater understanding of potential displacement of visitors from the reserve. The additional survey (the 2015 Sizewell C RSPB Minsmere visitor surveys) that was then undertaken in response to RSPB's request, following the same questionnaire method as the 2014 Sizewell C visitor surveys, confirmed that the approximate percentage who said that they would be displaced was similar to the results of the 2014 Sizewell C visitor surveys (28 and 29% respectively). Some of the displacement locations differ between the two surveys, with a greater proportion recorded outside the study area in the 2015 Sizewell C RSPB Minsmere visitor surveys. Analysis of the locations given outside the study area in the 2015 Sizewell C RSPB Minsmere visitor surveys shows that many of those who would be displaced would seek similar visitor experiences to that provided by Minsmere including a number of RSPB reserves.

3.4.17 The distributions of displacement locations outside the study area are shown on Figures 05B of the 2014 Sizewell C visitor surveys (ES Volume 2 Appendix 15A (Doc Ref. 6.3)) and the 2015 Sizewell C RSPB Minsmere visitor surveys (ES Volume 2 Appendix 15B (Doc Ref. 6.3)). These illustrate the wide-spread locations including some distant locations in England and Scotland. Table 1a above shows that each of the eight locations outside the study area given by people in the 2014 Sizewell C visitor surveys were only named by one respondent. Table 2a above shows that six locations outside the study area were only named by one respondent and that two locations (Sutton Heath and Wicken Fen) were only named by two respondents. The only location named by more than two respondents (namely three people) in the 2015 Sizewell C RSPB Minsmere visitor surveys was 'Norfolk' which could refer to anywhere in the county. European Sites to which people may be displaced outside the study area are therefore not discussed further.

b) Construction workers

3.4.18 Approximately 7,900 workers are required at peak on the construction phase; the peak is relatively short-lived, with much smaller gross numbers of workers each side of this peak. In general the workforce will be spread over a wide area, and potential use of European Sites will be diffuse.

3.4.19 Approximately 5,900 of these workers are expected to be NHB; of these at least 3,000 are expected to be based in the campus or designated caravan site and are less likely to take part in informal recreation away from the home (and will not be allowed dogs); around 880 are expected to buy homes and therefore are not considered net additional in terms of impacts; around 2,000 are expected to rent or stay in tourist accommodation in the area, they will probably have access to campus facilities, but are otherwise likely to comprise net additional recreational interests potentially impacting sensitive receptors.

3.4.20 The profile of the typical construction worker is significantly different from that of the 'typical' existing users of linear and area public access as surveyed and summarised in this report. Evidence from Sport England suggests that they are less likely to take part in informal recreation away from the home, and the nature of the construction workforce requirements means that many workers are likely to return to their permanent address at weekends.

3.4.21 Reference to national surveys (PFMA 2019) indicates that up to approximately 23% of construction workers may have dogs (although the actual percentage is likely to be much lower); research undertaken for this project indicates that approximately only 37% of long-term let properties within a 20 mile (32km) radius of Sizewell would accept tenants with one or more dog (Jenkinson, January 2016 – see Appendix D).

3.4.22 In conclusion, of the 7,900 (approximate) construction workers that will be present at the peak of the SZC construction project, the following two groups can be scoped out of the HRA:

- Approximately 2,000 people will be drawn from the existing local population, and therefore would not be net additional to the area.
- Approximately 880 who are expected to buy homes are not considered net additional to the existing population.

3.4.23 The following group is likely to lead to increases in visitor numbers to European Sites, but is not likely to lead to an increase in dogs at the European Sites:

- 3,000 campus or caravan-based workers, some of whom may wish to undertake informal recreation outside the campus (without dogs).

3.4.24 The following group are likely to lead to an increase in visitor numbers (including visitors with dogs) to European Sites:

- Approximately 2,000 that are expected to rent or stay in tourist accommodation in the area.

3.4.25 The potential for campus based workers to visit European Sites will be limited by the factors discussed above, but the potential for disturbance by walkers or cyclists, for example, cannot be entirely discounted. The workers renting or staying in tourist accommodation will be spread across a wide area thus diffusing potential increases in numbers at European Sites, but are likely to lead to an increase in visitor numbers, including dogs, to European Sites. The potential numbers of additional visits (with and without dogs), by construction workers, to locations at or near European Sites has been estimated in Section 3.3.

4. Potential for additional recreational visitors to European sites during SZC operation

4.1 Displacement of existing visitors

4.1.1 There is potential for people's recreational behaviour to change during the 10 year construction period so that they continue to follow altered patterns on completion of construction, and for them to avoid access routes and areas they currently use. If this were to occur, there would be potential for continued displacement to European Sites. Any temporary mitigation required during the construction phase will cease on completion of construction of SZC. However, measures will be taken to restore and improve the access and recreation resources and landscape that may be affected by operation of SZC, which EDF Energy will seek to agree with consultees through consultation, and which will be described in masterplan, landscape and PRoW and access strategies. These strategies are being prepared as part of an iterative design / assessment / consultation process and have yet to be finalised and agreed. Current proposals being considered include:

- Restoration of temporarily diverted PRoW and access routes (including the Suffolk Coast Path, Sandlings Walk and Bridleway 19) to their existing routes, or to alternative agreed routes where existing routes are not possible, or where route improvements can be made;

- Provision of additional public access at the Aldhurst Farm habitat creation scheme; this will be developed and agreed to balance long term public amenity with the site's agreed habitat creation objectives. EDF Energy plans to consult on proposals for opening up significant parts of the site for quiet public recreation in due course. It is envisaged that these proposals will make provision for exercising dogs on and off leads;
- Improvements to Kenton Hills car park providing increased capacity, improved surfacing, management of vegetation and improved signage;
- Further improvements to enhance public access into the EDF Energy Sizewell Estate and to link with Aldhurst Farm, including enhanced connectivity with existing linear and area access at the Estate's perimeter, and improved signage and information for all access users.

4.1.2 The objective is to create additional and enhanced recreational resources that are attractive to users, to minimise potential increases in numbers at European Sites due to the construction of SZC.

4.1.3 It is anticipated that there may well be an increase in visitor numbers at European Sites during the operation phase of SZC (of approximately 60 years) which will add to the existing baseline figures. Such increases are expected to occur for reasons unrelated to the SZC development, including:

- planned and predicted population growth encouraged by existing and likely future planning policy and initiatives to encourage tourists to the area; and
- due to the trend for increasing popularity of outdoor recreation. As discussed in Section 2.4, the MENE Report (Natural England, 2015) suggests that the frequency with which visits are taken to the natural environment is increasing with a 4% rise in visits between 2009/10 and 2013/14). The trend for increasing numbers of recreational resource users is likely to continue during the operational life of the power station.

4.2 Operational workforce workers

a) Permanent Workforce

4.2.1 SZC will require an operational workforce (on-site) of approximately 900 people. The operator requires these workers to live within 25 miles (40km) of the site.

4.2.2 As shown in Figure 1 in section 3.3 above, this workforce will start to build up slowly at around the same time as the Mechanical and Engineering construction workforce, which is expected to be a few years into the construction phase. By the peak of construction, around 240 operational workers are likely to be on-site. These workers have been captured within the 'owner occupied' component of the workforce outlined at paragraph 3.3.8 above.

4.2.3 Not all of the 900 operational staff will be net additional – some will be long-term transfers from construction roles, and others may transfer from Sizewell B in the medium-long term.

4.2.4 The operational staff are likely to buy homes in the area and become permanent residents within the housing stock in Suffolk and the East of England, and are therefore not considered to form a net additional population – they will build up over a long time and occupy homes otherwise occupied by existing residents. As such, these workers have been scoped out of this assessment.

b) Outage Workforce

4.2.5 Currently, Sizewell B has a planned outage every 18 months, which involves a temporary workforce of (on average) approximately 1,000 people for a period of around 6 weeks. This recurring planned outage is a necessary short-term, temporary period during which essential maintenance, refuelling and testing of the reactor takes place. SZC will also require outages during operation of the power station.

4.2.6 A survey of the previous outage for Sizewell B in May 2016 indicated that around 85% were NHB.

4.2.7 Of the NHB workers, approximately 37% lived temporarily in PRS accommodation or were renting a room in a private home, while 63% lived in tourist accommodation including caravans. These workers have a similar skill profile to the construction workers at peak and are anticipated to follow a similar distribution across the local area.

4.2.8 Once the reactors are operational at SZC, there will be an extra two planned outages per year (one for each reactor). These three outages (Sizewell B and C) will be placed at equal intervals if possible and managed to avoid peak tourist seasons where possible. It is anticipated that the split between home based and NHB, and the overall outage workforce size for SZC outages will be similar to the existing outage at Sizewell B (i.e. approximately 850 NHB workers per outage). As existing residents, the 'home-based' element can be scoped out of this assessment.

4.2.9 The net effect of the additional outages for SZC will be regular but short-term, leading to an additional 850 NHB workers in PRS and tourist accommodation twice per year. During the construction phase, it is likely that outages will necessitate a reduction in construction activity, meaning that the net effect of the outage workers will be far less than the gross effect if the outages occur during peak construction.

4.2.10 In summary the net effect of the SZC operational workforce that has potential to lead to increased visits to European Sites will be:

- 850 workers in PRS and tourist accommodation, up to twice per year, for around 6 weeks.
- There is a high propensity of house-sharing in this sector (around 2.8 workers per unit), and workers would share many traits with campus based workers, but likely with greater income. As with the construction phase, both PRS and tourist sector-based workers are unlikely to bring families or pet dogs with them and more likely to return home at weekends.
- The outage workers will be working intensively to minimise the length of disruption to power station operation, which will limit time for visiting outdoor informal recreation resources in the area.

4.2.11 Outage workers in PRS and tourist accommodation will share the characteristics of non-home-based construction workers in terms of their recreational preferences and outlined in Section 3.3 above, but it is expected that very few, if any, would bring their dogs with them during the 6 week outage periods and that a small proportion would bring bikes.

4.2.12 Tables 10 and 11 show estimations for the number of outage workers (at the 850 peak) who may visit outdoor informal recreational resources around Sizewell, and the potential numbers of additional visits by construction workers to the predicted most popular locations. These tables follow the same method for estimating the potential numbers who are likely to visit outdoor recreational resources as described for construction workers in Section 3.3. 10% of these outage workers (85) are assumed to visit outdoor informal recreational resources around Sizewell once a week when present for up to 12 weeks a year (two periods of 6 weeks), which equates to approximately 1,020 visits per year, as illustrated in Table 10.

4.2.13 It was noted from the May 2016 outage survey (Quod 2016) that in terms of informal recreation destinations:

- Overall, (at least) 54% of all locations identified (by frequency) were 'urban' areas (Southwold, Thorpeness, Aldeburgh, open spaces in towns/villages).
- Around 10% of all locations identified (by frequency) were 'other unspecified' areas.
- This leaves around 36% of locations identified by frequency as more sensitive locations, of which over half were Sizewell Beach.

Table 4.1: Estimated number of outage workers who may visit outdoor informal recreational resources around Sizewell

Number of non-home based outage workers	Number of visits to informal outdoor recreational resources once a week	Number of visits per year (85 visits per week x 20 weeks per year, accounting for shift patterns)
850	85	1,020

Table 4.2: Estimated numbers of outage worker visits to locations per year

Locations most likely to visit	Outage workers	
	Estimated % who visit location	No. PRS & tourist-based worker visits to location/yr
Sizewell Estate and beach (not European Sites)	18%	183.6
Aldeburgh	26%	265.2
Thorpeness	15%	153
Minsmere	2%	20.4
Dunwich Heath	1%	10.2
Dunwich	2%	20.4
Walberswick	1%	10.2
Southwold	9%	91.8
Aldringham Walks	3%	30.6
Tunstall Forest	2%	20.4
Rendlesham Forest	2%	20.4
Westleton Heath	1%	10.2
Elsewhere (diffuse sites)	18%	183.6
Total	**100%**	**1,020**

4.3 Conclusions on the additional recreational pressure that may be generated at European Sites during the operation phase of the SZC project

a) Displacement of existing visitors

4.3.1 Measures will be taken to restore and improve the access and recreation resources and landscape that may be affected by construction and operation of SZC, which will be agreed with consultees through consultation, and masterplan, landscape and PRoW and access strategies. Any temporary mitigation required during the construction phase will cease as soon as it is not required, or on completion of construction of SZC. These strategies are being prepared as part of an iterative design / assessment / consultation process and have yet to be finalised and agreed. The objective is to create recreational resources that are attractive to users and it is not considered that there will be any significant displacement of existing visitors to European Sites during the operation phase of SZC and following cessation of construction activity.

b) Permanent Workforce

4.3.2 SZC will require an operational workforce (on-site) of approximately 900 people. The operator requires these workers to live within 25 miles of the site. Not all of the 900 operational staff will be net additional – some will be long-term transfers from construction roles, and others may transfer from Sizewell B in the medium-long term.

4.3.3 The operational staff are likely to buy homes in the area and become permanent residents within the housing stock in Suffolk and the East of England and are therefore not considered to form a net additional population. As such, these workers have been scoped out of this assessment.

c) Outage Workforce

4.3.4 Once the reactors are operational at SZC, there will be an extra two planned outages per year for the site overall. Outages will be placed at equal intervals and managed to avoid peak tourist seasons where possible. It is anticipated that there will be approximately 850 NHB temporary workers per outage. As existing residents, the ‘home-based’ element is scoped out of this assessment.

4.3.5 In summary the net effect of the SZC operational workforce that has potential to lead to increased visits to European Sites will be:

- 850 temporary workers in PRS and tourist accommodation, up to twice per year, for around 6 weeks.
- There is a high propensity of house-sharing in this sector, and workers would share many traits with campus-based workers during construction, but likely with greater income. Both PRS and tourist sector-based workers are unlikely to bring families or dogs, and are more likely to return home at weekends.
- The outage workers will be working intensively to minimise the length of disruption to power station operation, which will limit time for visiting outdoor informal recreation resources in the area.

4.3.6 The potential numbers of additional visits (with and without dogs), by outage workers, to locations at or near European Sites has been estimated in Section 4.2.

5. Analysis of existing access arrangements

5.1 Introduction

5.1.1 This section reviews the existing access arrangements within the European Sites that may be affected by an increase in recreational pressure due to SZC. The 2014 Sizewell C visitor surveys report (ES Volume 2 Appendix 15A (Doc Ref. 6.3)) identified that, of the respondents who indicated they might want to avoid the paths around the construction zone, around 75% would be prepared to travel up to 5 miles (8 km) to an alternative site and the rest would travel further (up to 20 miles (32 km) or more than 20 miles), the majority by driving, some on foot or by cycle but very few by public transport or by sharing a lift. Given that most of the additional recreational visitors displaced by the construction of SZC are likely to arrive at their recreational destination by car, and that 73% of respondents drove to the start of their route, particular focus is given to the car parks (formal and informal) at or near to the European Sites, with the easiest access to the European Sites by foot or cycle. No further consideration is given to horse riders because only two horses were observed in the entire visitor survey discussed in Section 2.5 (on the beach by Dunwich Heath).

5.1.2 In order to determine its capacity for recreational use, each European Site has been described by: the access points (car parks) that visitors are likely to use; the visitor facilities available; key features of each access point which would tend to indicate susceptibility to becoming a recipient of displaced recreation visits, including people with dogs; and existing site management (including dog restrictions). Potential access points were determined by a study of Ordnance Survey (OS) maps, aerial photographs,

field visits and in consultation with Natural England, the RSPB, Suffolk Wildlife Trust, the Forestry Commission, the National Trust, Suffolk County Council and Suffolk Coastal District Council. The access point are either within European Sites (e.g. Access point E Walberswick (Tinker's Walk), or car parks outside European Sites which are close enough to them to provide potential locations for people to walk or cycle into European Sites (e.g. Access point H Walberswick (village car parks)).

5.2 European Sites

5.2.1 The European Sites are shown on Figures 001 to 010 (Appendix A). An overview of those scoped into the assessment is provided below:

- The Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, NNR are located to the north of Sizewell, defined by an area to the south of Kessingland around the Benacre Broads and the smaller Covehithe Broad and Easton Broads. The area supports important populations of breeding birds, which are particularly associated with reedbed and shingle beach habitats (Bitterns and Little Terns in particular). There are limited formalised or regularly used access points into the site apart from in Kessingland and Covehithe, where it is possible to access informal coastal paths that define the eastern seaward boundary of the site.

- The Minsmere to Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC are located to the north of Sizewell and can be split into two distinct areas which are separated by Dunwich Forest. Immediately north of Sizewell there is an area which includes the RSPB Minsmere Reserve, Dunwich Heath and Westleton Heath. Both the Minsmere Reserve and Dunwich Heath are well established and popular visitor destinations, each providing a large car park and a range of visitor facilities. There are also several informal parking spaces within the periphery of the Minsmere Reserve. There are visitor management measures in place at both sites which are owned by the RSPB and National Trust respectively. Westleton Heath adjoins the Minsmere Reserve and is accessed by three smaller and less formal car parks located on the road to Dunwich.

- North of Dunwich Forest and to the west of Walberswick village, lies a second distinct area within the Minsmere to Walberswick European Site. It is defined by the Walberswick National Nature Reserve, including the Dingle and Westwood Marshes, and Walberswick Common. This area is accessed by two main car parks located at Walberswick, one car park at Southwold, a main car park at Dunwich

on the southern edge, and a series of smaller car parks. This includes car parks at Tinkers Walk, Lodge Road and New Delight.

- Dunwich Forest (a large commercial forest) lies between the two areas identified above and is undesignated.
- The Sandlings SPA is a large site comprising several discrete parcels of land. Two of these parcels lie close and to the south of Sizewell, these being: Aldringham Walks and North Warren Nature Reserve located to the west of Thorpeness between Sizewell and Aldeburgh. Both sites are located away from the beach and are more discreet than the sites previously described at Minsmere and Dunwich. As a result, they have fewer visitor facilities and are accessed via a series of smaller and informal car parks. This includes car parks at North Warren and Thorpeness. A car park for 10-20 cars near Sizewell Hall which was open in 2015 was closed when visited in April 2019.
- Other discrete areas of The Sandlings are located south west of Sizewell at Snape Warren (adjoining the Alde-Ore Estuary SPA), Tunstall Forest and Rendlesham Forest.
- The Alde-Ore Estuary SPA and Ramsar site and the Alde, Ore and Butley Estuaries SAC extend along the Butley River and River Alde from Chillesford to Orford and Aldeburgh and then inland to Snape. For much of their length, the Butley River and River Alde are not accessible. In the upper Alde estuary, rights of way are restricted to Snape to Iken and in the vicinity of Aldeburgh. The greatest potential for recreational access is to the south of the estuary where the River Alde flows away from the coast at Aldeburgh and rights of way are present along the western bank of the estuary. The Butley estuary can be accessed from two car parks on its south-western edge.
- The Orfordness and Shingle Street SAC occupies a spit of land lying east of the River Ore and is isolated. The spit of land is potentially accessible from the southern car park at Aldeburgh but the National Trust, which manages Orfordness, has erected signage, fencing and vehicle barriers to prevent casual public access to the area. Public access is restricted to ferries from Orford which operate from April to September; this is restricted to non-sensitive areas. For this reason, Orfordness is not considered further.

5.3 Description of potential access points

5.3.1 For each potential access point, a number of key features have been identified (e.g. car park facilities and signage), together with a description to enable a comparison of each access point to be undertaken. This

information is listed below in Table 12 and a comparison of access points undertaken in Table 13, including supporting text and photographs, together with a summary of the access available from each access point location. The access point features and descriptions have been generated through a combination of desk-based study and field work; locations are shown on Figures 001 to 010.

Table 5.1: Access point key features

Key features	Description
Car parking	• Estimated capacity • Surfacing • Is there a charge for parking • Is car park signposted or shown on maps
Visitor facilities	• Café • Public convenience • Interpretation boards • Visitor centre
Accessibility	• Does access point location give access to land identified as Open Access Land or Registered Common Land • Are access paths surfaced (other than with grass) • Is there a public right of way adjacent to access point • Description of habitat structure in immediate vicinity of access point
Existing visitor management activities	• Is there evidence of a warden presence • Is there evidence of fencing to control access and desire lines • Any signage or other information available to new visitors, in particular highlighting sensitivities of European Sites • Is there indication that signage is seasonal (erected at key times of year)
Advice to dog owners	• Signage aimed at dog owners • Signage highlighting how to behave with a dog whilst on site • Bins suitable for bagged dog waste provided • Any other dog friendly facilities

5.3.2 There is no automatic correlation between an increase in the number of recreational visits and the potential for the interest features of European Sites to be detrimentally affected. To an extent it depends upon the

behaviour of visitors and the pattern of recreation usage. For example, where paths are well defined and in good condition visitors are likely to follow the same behaviour pattern and use the existing path network. This type of location could potentially absorb additional visitors, as the pattern of recreation usage would remain the same, and the flora and fauna would have become adapted and habituated to this pattern of recreational usage. By contrast, if visitors decide not to use the existing path network, (for example the path network is not well surfaced or defined) and so visit parts of a site that do not currently experience recreation activity, then there is a greater potential for negative effects.

5.3.3 Therefore, the potential for disturbance to occur as a result of recreational users being displaced from Sizewell will to some extent, depend upon how displaced recreational users behave when they access a new site. If existing patterns of access and behaviour are maintained, then disturbance to European Site features is considered less likely, than if new patterns of access and behaviour are established.

5.4 Access point descriptions

5.4.1 As described above each European Site has multiple access points which are summarised below and detailed in Table 13. The locations of each access point can be seen on Figures 001 to 010 (Appendix A).

5.4.2 Dunwich Forest (not within a European Site but between two parts of the Minsmere to Walberswick European Site) is served by Access point K.

5.4.3 The Benacre to Easton Bavents SPA, SAC, NNR is served by the following access points:

- Kessingland (Access point A)
- Covehithe (Access point B)

5.4.4 The Minsmere to Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC are served by the following access points:

- Hen Reedbed (Access point C)
- Blythburgh (Access point D)
- Walberswick (Tinker's Walk – Access point E)
- Walberswick Common (Access point F)
- Southwold (Access point G)

- Walberswick (village car parks – Access point H)
- Walberswick (Lodge Road – Access point I)
- Walberswick (New Delight Walks – Access point J)
- Dunwich (village car park – Access point L)
- North Westleton (Access point M)
- Westleton Heath (Access point N)
- RSPB Minsmere Outer Periphery (car parks – Access point O)
- RSPB Minsmere (main car park – Access point P)
- Dunwich Heath (National Trust car park – Access point Q)
- Eels Foot Eastbridge (Access point R)

5.4.5 The Sandlings SPA is served by the following access points:

- Aldringham Walks (Access point S)
- Thorpeness (village car park – Access point T)
- Lay-by to north of Aldeburgh (Access point U)
- Aldeburgh (car park to north of village – Access point V)
- North Warren (Access point X)
- In addition to the above access points Tunstall and Rendlesham Forest car parks access parts of the Sandlings SPA (Access points CC and FF)

5.4.6 The Alde-Ore Estuary SPA and Ramsar site and the Alde, Ore and Butley Estuaries SAC are served by the following access points:

- Aldeburgh (car park to south of village – Access point W)
- Sailors Path (Access point Y)
- Snape Warren (Access point Z)
- Snape Maltings (Access point AA)
- Iken Picnic Site (Access point BB)

- Butley (Access point DD)
- Orford (Access point EE)

5.4.7 Table 13 summarises and compares the key features and describes each access point together with site photographs and a short summary of the potential access options from the access point. Access points are grouped under the European Site that they are most likely to provide access to or, in the case of Access point K, under the heading 'Dunwich Forest' which is the area of coniferous and broadleaved woodland and heath owned by the Forestry Commission that the car parks serve, but which is not a designated European Site.

5.4.8 In the site assessment summaries below, the presence of any on-site signage or other information for visitors is recorded, especially in relation to requested behaviours by walkers with dogs. However, it must be noted that the recording of any such provision is not, in itself, any evidence as to the effectiveness of such measures in terms of influencing where dog walkers go and what they do, for example, keeping to certain routes or preventing dogs from quartering heathland.

Table 5.2: Access point attributes and potential access route options

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Kessingland
(Access Point A)
Figure 003</td><td>Car parking
Two car parks with combined capacity of an estimated 45 spaces, no charges. Approximately 10 informal spaces and Beach Road car park and approximately 35 spaces at Church Road car park, managed by the Kessingland Parish Council.
Visitor Facilities
Local cafés, public toilets and beach telescope. Information boards on the local area and the AONB. Small play park at the Church Road car park. General waste bins are provided, but these are not marked up as suitable for bagged dog waste (even though this is usually permissible).
Accessibility
Access is provided to the beach. To the north and south, a surfaced promenade follows the coast, extending to the edge of the village. Beyond the promenade, informal footpaths extend both north and south and follow the Suffolk Coastal Path. To the south, it is possible to walk along the eastern seaward boundary of the Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, NNR in several places.
Existing visitor management activities
None evident other than seafront and promenade safety and dog restrictions.
Advice to dog owners
A byelaw sign states that dogs must be kept on a lead along the entire length of the promenade, and that from 1st May to 30th September dogs are banned from an area on the seashore and beach. A general litter sign states that dog walkers should “clean it up” in relation to fouling of land and the beach; there is also a “poop scoop area sign”. The AONB information board does not mention any dog-related issues.</td><td>Beach Road car park
 
Southern promenade
 
Information board on AONB
 
Church Road car park
 
Access route options
Provision is made along the coast by way of the Suffolk Coastal Path, which forms the eastern seaward boundary of the Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, NNR. There do not appear to be any inward footpaths from the coast that provide entry to the reserve and given there is little evidence of local promotion, it is anticipated that there would be limited desire to access to the reserve. It is observed to be a popular local destination for dog walking along the promenade and beach.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Covehithe (Access point B) Figure 003	**Car parking** There are estimated to be 5 spaces outside the Covehithe Abbey and approximately 50 spaces along roadside verges on approach to the village from the east. No charges. **Visitor Facilities** A bin for bagged dog waste only is provided at the roadside where the main path to the reserve commences. **Accessibility** A public footpath provides access to Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, NNR to the south, from the village running south east to the coast. **Existing visitor management activities** Shorebird protection areas are established on the beach by post and wire fencing which will keep dogs, as well as people, out of nesting areas. **Advice to dog owners** Dog waste bins provided. Keep dogs out of the fenced off shorebird protection areas from March to September. One Natural England entry panel gives a general statement of "keep dogs on leads" but does not define any temporal or spatial limits to the latter. The joint Natural England and Benacre Estate information panel provided at the roadside where the public footpath to the reserve commences, conversely states that dogs need to be "under close control" rather than on a lead.	Signage for Benacre Reserve  Access to Reserve via public footpath  Shorebird Protection Area  Car parking at the Abbey  **Access route options** Benacre to Easton Bavents and Benacre to Easton Bavents Lagoons SPA, SAC, NNR can be directly accessed from the village via a public footpath and through observation, this is a well used local route. Given that there is limited promotion of the reserve or its features both within the village and in the wider area, it is considered that this access point is utilised mostly by locals, or for short walks by those visiting the Abbey or the beach.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Hen Reedbed
(Access point C)
Figure 004</td><td>Car parking
Capacity estimated to be 10 cars, no charge and surfaced with gravel.
Visitor facilities
Viewing hide/platform. Information board provides details of walks to hides. ‘What’s on Suffolk’ and SWT Nature Trail leaflets provided. Chalk board listing recent bird sightings from hides.

Accessibility
No direct access to Open Access Land and no direct rights of way access except by going across the A1095 where access to the north bank of the Blyth Estuary is possible, albeit subject to flooding at high tide. Direct access to viewing area over reedbed habitat. Habitat in vicinity of car park is reedbed and estuary to the south of the road.
Existing visitor management activities
Donation box provided by SWT. No presence of warden presence.
Advice to dog owners
Orientation panel states that “dogs on leads are allowed on the reserve”.</td><td>Car park at Hen Reedbed
 
Visitors to Hen Reedbed
 
Orientation panel
 

Access to north bank of Blyth Estuary
 
Access route options
The car park at Hen reedbed is most likely to be used to access the reedbed paths and viewing hide. It is possible to cross the A1095 and access the north shore of the Blyth Estuary, but a circular walk would be difficult to accomplish without extensive walking along A109.</td></tr>
</table>

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Blythburgh
(Access point D)
Figure 004</td><td>Car parking
There are an estimated 10 spaces to the north of the Village Hall at Blythburgh. No charges and gravel surface.
Visitor Facilities
Litter and recycling bins provided, possibly belonging to the Village Hall.
Accessibility
Access can be taken eastwards into the Walberswick to Minsmere SPA. A public footpath heads north east towards Hen Reedbeds (Access point C); however, the legally recorded route crosses inter-tidal mudflats and marshes and disappears at high tide, and therefore this route seems unlikely to be accessible. Signage indicates some public footpaths are “not a through route due to natural erosion”. A public footpath heads south east, through the Walberswick to Minsmere SPA to Tinkers Walks (Access point E). Habitat in the SPA is mudflats/marshes and paths are informal, worn through use.
Existing visitor management activities
No indication of a warden presence.
Advice to dog owners
Signs giving conflicting messages including ‘keep dogs on leads’ and ‘keep dogs under close control’.</td><td>Car park at village hall
 
Information board at Walberswick NNR
 
Inaccessible footpath to Hen Reedbed
 
Footpaths south east through the edge of the SPA
 
Access route options
Access to the Walberswick to Minsmere SPA can be taken from the Bridge Sluice to the south east along the River Blyth.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Walberswick (Tinker's Walk) (Access point E) Figure 004	**Car parking** Capacity estimated up to 5 cars, no charge to park. Car park mainly gravel surface, car park not signed but visible on the B1387 and marked on maps and leaflets. **Visitor facilities** Information board provides information on the local environment and includes a request for visitors to follow the Countryside Code and in particular to keep dogs on the lead, specific information relating to the use of Open Access Land at Tinker's Walk and includes a request to "keep dogs on a fixed, short lead from 1st March until 31st August and at all times near livestock". **Accessibility** Car park gives access to Open Access Land and several rights of way in proximity. Paths appear surfaced with sand. To the north of car park habitat is predominately scrub woodland and dense bracken with small discrete patches of heath. To the south of the car park habitat is short sward acid grassland. **Existing visitor management activities** Signage as above. No indication of a warden presence. **Advice to dog owners** Signage described above including a request to "keep dogs on a fixed, short lead from 1st March until 31st August and at all times near livestock". A leaflet available online states that dogs are welcome but should be kept on a lead due to ground nesting birds.	Lay-by at Tinker's Walks  Signage at Tinker's Walks  Open access sign  **Access route options** The parking area at Tinker's Walk allows direct access to the surrounding Open Access Land and heath; it also gives access to a footpath along the edge of the Blyth Estuary.

Access point and Figure reference	Site features	Site photographs, and potential access route options
Walberswick Common (Access point F) Figure 004	**Car parking** A number of small car parks with combined capacity of an estimated 20 spaces. Roadside laybys and lane ends. **Visitor Facilities** No evidence. **Accessibility** Provides access along footpaths and bridleways to Open Access Land at Walberswick Common, part of the Walberswick to Minsmere SPA. The Sandlings Walk passes through the Common and SPA. It is possible to take a circular route north to the River Blyth and eastwards into Walberswick village or take the ferry to Southwold or take longer walks through the SPA to the south. Habitat in the Common is heather dominated heath. **Existing visitor management activities** Signage on the Open Access Lane and advising presence of adders. No indication of a warden presence. **Advice to dog owners** Open Access signage states that dogs need to be kept on a fixed short lead between 1 March and 31 July and at all times near livestock, although these restrictions do not apply on public rights of way nor for guide/hearing dogs. Warning signage for adders states to “keep dogs under close supervision”. Dog waste bins provided; signage asks people to “clear up after you dog”.	Open Access Land signage  Directional signage  Dog waste facilities  **Access route options** The Walberswick SPA can be directly accessed from various small car parks and the Common itself is highly permeable. Observed as a popular location for local recreational activities including dog walking.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Southwold
(Access point G)
Figure 004</td><td>
Car parking
Estimated 200 spaces in pay and display car park. Charges up to £5 per day. Gravel surface.
Visitor Facilities
There is a small café and public toilets within proximity of the car park.
Accessibility
The Suffolk Coastal Path can be accessed at the car park entrance. Access is provided to the Walberswick to Minsmere SPA by ferry across the River Blyth. The Sandlings Walk can be accessed in Walberswick. Footpaths in the vicinity are largely well defined and habitat comprises shingle beach with salt marshes along the coast and mudflats along the River Blyth. The edges of the river are exposed and there is frequent signage along its length advising of restrictions/safety practices.
Existing visitor management activities
Safety restrictions for climbing on rocks, proximity to the water, fishing and harbour related activities visible.
Advice to dog owners
There are no restrictions between the harbour and the concrete promenade. Owners are advised to keep dogs under control at all times and use a lead beyond the beach huts along Southwold Harbour road. Recent, more positive signage seeking to retain Southwold’s reputation as a dog-friendly town has been introduced through a community initiative, in response to proposals for greater restrictions on dogs by the local council in 2017.
</td><td>
Southwold car park

Information board


Ferry to Walberswick

Parking ticket machines and cafe

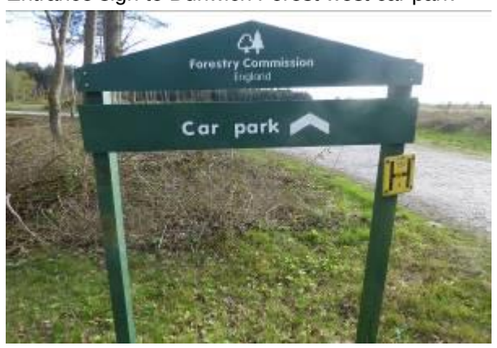
Access route options
The Suffolk Coastal Path can be accessed from this car park and it is also possible to cross the River Blyth to access the Walberswick to Minsmere SPA by ferry, located approximately 700m north of the car park. From the ferry crossing it is possible to join the Sandlings Walk. A long-distance walk (4km) can also be undertaken following the River Blyth upstream to access point C Hen Reedbed.
</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Walberswick (village car parks) (Access point H) Figure 004	**Car parking** Two car parks with combined capacity estimated 140 cars (100 spaces at Ferry Road and 40 spaces at Cliff Field). Pay and display machines. Charges - £3 up to 3 hours and £4 for the day. Car park mainly grass and gravel surface. Campers and caravans not permitted. **Visitor facilities** Information board requests that people preserve the sand dunes by keeping to well used paths. Information board on the Suffolk Coast and Heaths AONB. Beach huts provided at Cliff Field. Several bins suitable for bagged dog waste with "clean it up" signage. **Accessibility** Car park adjacent to rights of way including Suffolk Coast Path, a wide path to Dunwich along the edge of the dunes surfaced with shingle. Habitat coastal dunes and shingle with a defined path along base of dunes. Wetland habitat to west of dunes is wet underfoot and Dunwich river provides a natural barrier. Access to wetland areas restricted to rights of way on top of flood defences. **Existing visitor management activities** Chestnut paling fencing to discourage access to the dunes. No evidence of warden presence. **Advice to dog owners** Leaflet available online states that due to ground nesting birds, dogs welcome but should be on a lead. At Ferry Road, signage requires dogs to be kept under close control. Informal signs encourage owners to keep dogs on lead at Ferry Road due to the accessibility of the river and sandy banks.	Walberswick Cliff Field car park  Walberswick Ferry Road car park  Fencing to dune areas  Path to Westwood and Dingle Marshes  **Access route options** Walberswick village provides direct access to shingle, reed and marsh habitats that form part of the Westwood and Dingle Marshes. It is possible to walk from Walberswick village along the beach to Dunwich. It is also possible to access the Walberswick reedbed, although access is restricted to a single footpath, located on a causeway, and screened by scrub along most of its length. As a result, direct access to the reed bed is unlikely. Access is also possible to nearby heathland; this entails a moderate (3-4km) walk. The location acts as an access point for a coastal (rather than inland) experience, with walkers being more likely to walk along the beach towards Dunwich than head inland.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Walberswick (Lodge Road)
(Access point I)
Figure 004</td><td>Car parking
Capacity estimated 10-20 cars, no charge to park. Car park mainly grass and gravel surface, car park not signed but marked on maps and leaflets. The Hoist Covert Car Park had recently been closed.
Visitor facilities
No evidence.
Accessibility
Car park does give access to Open Access Land and rights of way including the Sandlings Walk. Path surface typically sand. Habitat structure adjacent to car park is short sward acid grassland, grading into woodland and scrub with patches of dense scrub as footpaths lead west.
Existing visitor management activities
No evidence of warden presence.
Advice to dog owners
At some access points there is no information, but at the East Sheep Walks access point, Open Access signage states that dogs need to be kept on a fixed short lead between 1 March and 31 August and at all times near livestock, although this does not apply on public rights of way nor for guide/hearing dogs.</td><td>Informal car park on Lodge Road
 
Sandlings Walk signage
 
Informal car park on Lodge Road
 
Fencing to boundary of heath
 
Access route options
The car park allows for access to the area of heath (Open Access Land) located to the west of the Walberswick reed bed. The presence of dense bracken may restrict access to existing paths and rights of way in some places. It is possible to access the Walberswick reed bed from the Lodge Road car park. Access to the reed bed is restricted to a single footpath, located on a causeway, and screened by scrub vegetation along most of its length. As a result, direct access and disturbance to the reed bed is unlikely.</td></tr>
</table>

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Walberswick
(New Delight Walks)
(Access point J)
Figure 004</td><td>Car parking
Capacity estimated up to 10 cars, no charge to park. Car park mainly grass and gravel surface, car park not signed but marked on maps and leaflets.
Visitor facilities
The car park contains specific information relating to the use of Open Access Land and includes a request to “keep dogs on a fixed, short lead from 1st March until 31st August and at all times near livestock”. No public convenience. Cycle parking stands.
Accessibility
Car park gives direct access to Open Access Land and is adjacent to a number of rights of way. Paths surfaced with sand/gravel. Habitat in immediate vicinity of car park is short sward acid grassland and sparse heather heath that develops into scrub woodland as paths head east.
Existing visitor management activities
Signage described above. No indication of a warden presence.
Advice to dog owners
Open access information requests that visitors “keep dogs on a fixed, short lead from 1st March until 31st August and at all times near livestock; these restrictions do not apply on public rights of way”. Signage on a public byway finger post states “keep dogs under close control”. A leaflet available online states that dogs are welcome but should be kept on a lead due to ground nesting birds.</td><td>Car park at New Delight Walks
 
Signage at entrance to New Delight Walks
 
Signage at New Delight Walks
 

Path leading to New Delight Walks
 
Access route options
The car park at New Delight Walks allows for direct access to the adjoining area of Open Access Land heath. It is also possible to access the rides within Dunwich Forest. It is also possible to access the central area of the Walberswick reed bed via connecting footpaths. However, access is restricted to a boardwalk and then a causeway; both of which are screened by scrub vegetation with no direct access to the reed bed. As a result, disturbance to the reed bed is unlikely. Access is also possible to the coast, but this entails a lengthy (5-6 km) circular route.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Dunwich Forest (Access point K) Figure 004	**Car parking** Two main car parks and several small road edge car parks in close proximity with a combined capacity estimated to be approximately 100 cars, no charge for parking. Main car parks are surfaced with gravel. Car parks are signposted from the adjacent minor public road. **Visitor facilities** Information boards provide information on the history and geography of the local area and the transformation of Dunwich Forest into a Living Landscape (a Suffolk Wildlife Trust initiative to consider the landscape and environment as a whole to protect wildlife). No public conveniences. Parking provision for horseboxes. Dedicated bin for dog wastes and lock-up point for bicycles. **Accessibility** The forest is Open Access Land. Both formal car parks are adjacent to a public right of way and forest trails and rides. Habitat predominantly commercial forest with wide forest rides, some areas of open heathland vegetation comprising short grass swards and areas of dense bracken and heather adjacent to some rides. Areas of forestry immediately adjacent to western car park have been felled to create an open environment. **Existing visitor management activities** Further information is available online including a walking map with trails highlighted. The forest is actively managed by an RSPB, SWT and FC partnership. No evidence of warden presence. **Advice to dog owners** Generally absent apart from at the start of the St Helena Trail where dogs should be kept “under control”. The adjacent Living Landscape states “dogs are welcome but should be kept on a lead when near livestock”.	Dunwich Forest west car park  Information board at Dunwich Forest  Information board on St Helena Trail  Living landscape information board  Entrance sign to Dunwich Forest west car park  Facilities at Dunwich Forest west car park  **Access route options** Dunwich Forest is a commercial forest not part of a European Site. There is an extensive well-defined path and ride network along the St Helena Trail and beyond, limiting the likelihood for people to access open heathland habitat. The Minsmere to Walberswick SPA, SAC and Ramsar European Site to the north and south can be accessed from Dunwich Forest via Open Access Land, footpaths and bridleway routes.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Dunwich
(village car park)
(Access point L)
Figure 004</td><td>Car parking
Capacity estimated to be 150 cars, no charge and surfaced with gravel.
Visitor facilities
There are a number of information boards located within the beach car park which provide background information on the local area with some basic information about adjacent site sensitivities, the AONB and the Dingle Marshes. Public convenience and a café with drinking water containers for dogs. Several bins of different types suitable for bagged dog waste with some “clean it up” signage. Dispenser for dog waste bags.
Accessibility
No direct access to Open Access Land and no direct rights of way access except by going back into Dunwich. Access along the beach to Walberswick is via a path at the back of the shingle ridge. Path surfaced with gravel and sand. Wetland habitat to the rear of the shingle wet underfoot with areas of deep water. Temporary signage in May 2019 advised Otter Bridge towards Walberswick was closed with no access over the Dunwich River onto Marshes.
Existing visitor management activities
It is known that at the northern end of Dingle Marshes rope fencing is used to demarcate tern nesting areas on the beach. No evidence of warden presence. Signage advises that overnight and campervan parking is discouraged.
Advice to dog owners
An information board provides the only guidance to dog owners where it states (inter alia) “Little terns nest on the beach, so please keep dogs on leads as advised.”</td><td>Dunwich beach car park
 
Waste facilities at Dunwich beach
 
Path at edge of Dingle Marsh
 
Dingle Marshes and AONB information boards
 
Access route options
The car park at Dunwich provides direct access to the beach and allows visitors to undertake the walk to Walberswick village (Access point H), either along the beach, and usually just inland of the beach on grass paths (although this was temporarily closed at the time of survey – May 2019), or inland via the Suffolk Coast Path. It is possible to walk into Dunwich and follow rights of way onto Westleton Heath and Dunwich Forest both some 2-3km in distance.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
North Westleton (Access point M) Figure 005	**Car parking** Car park estimated at 10 spaces. Gravel surface and no parking charges. **Visitor Facilities** No evidence. **Accessibility** Access is available to Open Access Land (although there is no advisory signage) to the east. The Sandlings Walk can be accessed less than 1km to the east. Habitat is mostly farmland with areas of mixed woodland planting and rough grassland. **Existing visitor management activities** No evidence. **Advice to dog owners** No evidence although advice may have been present on now faded signs on public footpath fingerposts.	North Westleton car park  Access into Dunwich Forest from car park  Footpath signage to Dunwich Forest  Footpath signage to the west  **Access route options** Access can be taken to Westleton Heath NNR and Dunwich Forest.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Westleton Heath (Access point N)
Figure 005</td><td>
Car parking
Three car parks in proximity with a combined capacity estimated at 30-40 cars, no charge and a gravel surface.
Visitor facilities
Permanent information boards provide background information on the local environment and provides specific information relating to ground nesting birds and the need to keep dogs on the lead in order to reduce disturbance.
Accessibility
Car park gives direct access to Open Access Land and several rights of way are adjacent. Paths are unsurfaced sand / gravel. Habitat in immediate vicinity of car park is dense heather dominated heath.
Existing visitor management activities
Signage described above. An online leaflet provides cycle and horse-riding access routes. No evidence of a warden presence.
Advice to dog owners
Some Open Access signage advises to keep dogs on a fixed, short lead between 1st March and 31st August and at all times near livestock. Other Open Access signage states that the on lead restriction does not apply when using on public rights of way nor for guide/hearing dogs Information on Natural England’s NNR sign states for dogs to be kept on leads without any dates or access types stated. No online information for dog walkers is available. Dog waste bins are not provided.
</td><td>
Car park at Westleton Heath

Visitors and signage at Westleton Heath

Open Access signage


Westleton Heath

Access route options
The car parks provide direct access to Westleton Heath; this consists of a large extent of open heath (Open Access Land) with a well-defined path network (minimal desire lines). From the car parks, it is possible to do a short circular walk (2-3km) across heathland or a longer (5km) walk to Dunwich village, Dunwich Forest or take informal access to Dunwich Heath. It also allows public access in the direction of the northern boundary of the RSPB Minsmere Reserve.
</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
RSPB Minsmere Outer Periphery (car parks) (Access point O) Figure 005	**Car parking** Combined parking capacity of an estimated 195 parking spaces. Includes approximately 70 roadside spaces along Mill Road (from Westleton to Minsmere Visitor Centre entrance), approximately 75 roadside spaces along north-south unnamed road between Dunwich Road and Minsmere New Cut and approximately 50 spaces at an informal car park on east-west road between Sheepwash Lane and Minsmere New Cut. No charges; informal laybys were not surfaced or signposted. **Visitor facilities** None **Accessibility** Laybys give access to public rights of way (including the Sandlings Walk). Paths unsurfaced. Habitat in immediate vicinity of laybys is dense scrub and woodland. Roads provide access to the core of the reserve and to the visitor centre car park (Access point P). **Existing visitor management activities** None evident **Advice to dog owners** There are few, if any, signs, notices or information boards where paths start at the roadside, nor in the informal car parks. Some signage is present at the roadside boundaries of Access Land; while this states that dogs need be kept on a fixed short lead between 1 March and 31 August and at all times near livestock, the location of the signs and the accompanying plans, by omission, then give the impression that dogs can be off-lead on the adjacent areas that are not Access Land. Online and in one location, the RSPB provide a map showing three nature trails on which dogs are not allowed (the core of the reserve) but welcomes dogs elsewhere as long as they are on a lead. At the boundary of the core reserve where Mill Road crosses the Sandlings Walk, signage for people continuing on the surfaced road states “no public right of way” with a no dogs symbol. This again by omission, suggests dogs are allowed when going in other directions away from the sign; it also can be incorrectly taken to indicate that dogs are not allowed at the RSPB visitor centre and café beyond the sign. In one area a temporary sign stating “Please keep to the footpath and keep all dogs on a short lead” due to pirri-pirri burr control; however due to its placement this sign would only be apparent to a limited number of visitors.	Informal spaces in the outer periphery  Informal parking in field west of Sheepwash Lane  Visitor signage at some locations  Signage on Mill Road  **Access route options** It is possible to access the wider RSPB Minsmere Reserve (extent shown on Figure 001 in Appendix A and in Appendix B) via public footpaths, a public bridleway (which is also part of the Sandlings Walk) and an unclassified county road. Access to the beach at Minsmere is possible, but a circular walk would involve a relatively long route (6-9km). Access to Westleton Heath and Dunwich Heath is also possible although this would involve a walk of 3-5km.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>RSPB Minsmere (main car park)
(Access point P)
Figure 005
See also Minsmere Trail Map in Appendix B showing the core of the reserve</td><td>Car parking
Capacity 233 spaces for cars and 3 coaches, plus overflow capacity for over 100 additional cars, no charge to park but an entry fee for non-RSPB members to use permissive nature trails in the core of the reserve. RSPB advises that depending on the season, 80% - 90% of visitors are members. Car park surfaced with gravel and well signposted. Dedicated shaded car parking spaces for visitors with dogs are available on request.
Visitor facilities
Visitor centre, café, public convenience, and three nature trails with hides. Lots of information provided about the reserve and its sensitive features. Water bowls for dogs provided.
Accessibility
Car park gives access to three nature trails that have sand or gravel surface or are unsurfaced. Habitat within the core of the reserve is wetland, reedbed and coast, whilst outside the core of the reserve habitat comprises scrub woodland and fields supporting short sward acid grassland.
Existing visitor management activities
The reserve is managed using a network of paths and hides to manage visitor pressure.
Advice to dog owners
Signage indicates dogs are permitted in the visitor centre and café but not on the adjacent permissive nature trails in the core area of the reserve. Online information provides the same message - the Minsmere Trail Map (Appendix B) shows three nature trails in the core of the reserve on which dogs are not allowed (except assistance dogs) but dogs are welcome dogs elsewhere as long as they are on a lead. The “Dog Walkers and public rights of way leaflet” is available on request from the information centre; it asks “Please walk your dog responsibly on all the rights of way around the reserve” and shows where the latter routes are on a map.</td><td>Main RSPB Minsmere car park
 
Entrance to Visitor centre
 
Information board
 
Designated Picnic Area
 
Access route options
Formal signed paths from the Visitor Centre around the core of the reserve, via a series of bird hides; walkers with dogs are not permitted to use them (except assistance dogs), limiting the potential for disturbance.
It is possible to access the wider RSPB Minsmere Reserve via two access roads that lead to the footpaths and a bridleway (which is also part of the Sandlings Walk). Access to the beach is possible via a short walk, and there is a 2km circular walk around The Scrape, on reserve paths and the Suffolk Coast Path, and opportunities for longer circular walks (6-9km) via either the EDF Energy Sizewell Estate or the RSPB Reserve and Dunwich Heath. Access to Westleton Heath and Dunwich Heath is possible although this would involve a walk of approximately 3-5km.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Dunwich Heath (National Trust car park) (Access point Q) Figure 005 Note: this is survey point 4 in the 2014 Sizewell C visitor surveys (ES Volume 2 Appendix 15A (Doc Ref. 6.3))	**Car parking** Capacity estimated at 80-100 cars, £5.50 charge for non-National Trust members arriving by car. Parking restricted to 1 hour to south car park overlooking RSPB Minsmere. Surfaced in gravel and signposted. **Visitor facilities** Information boards providing information about the heath are provided. A café, public convenience and visitor centre are present, along with a sea viewing hide; dog tie-up clips are provided outside the toilets. The National Trust offers a range of activities to visitors including walking trails, children's play areas, geocaching, bug hunts and bird watching. **Accessibility** Car park gives direct access to Open Access Land and several rights of way are adjacent. Paths are unsurfaced sand / gravel. Habitat in immediate vicinity of car park is dense heather dominated heath. **Existing visitor management activities** Mountain bikes and horses are not allowed on heath, unless they remain on the public bridleway. Fencing to some areas of heathland suggest that the heath is being actively protected from visitor disturbance. Visitors are encouraged to use the three main walking routes through the heathland which allow people to explore the heather, wet woodland and gorse habitats. Evidence of a warden presence. **Advice to dog owners** Dogs are allowed on site, but signs seek to restrict them to short leads from the 1st March until 31st August for conservation purposes, unless on public rights of way. There is extensive online information including the "Woof Guide" which states dogs should be kept on a lead whilst on the heath due to ground nesting birds but can be off the lead on the beach. A separate panel advises that dogs can be off-lead on a 2 mile "woof walk" that uses public rights of way and Minsmere Road. Dog waste bins and water provided; some panels show the bins' locations. Signage also advises dog owners not to leave their pets in the car and that "dogs are very welcome throughout Dunwich Heath." Open Access signage states that dogs need to be kept on a fixed short lead between 1 March and 31 August and at all times near livestock, although this does not apply on public rights of way nor for guide/hearing dogs. Several dog waste bins provided.	Café at Dunwich Heath  National Trust information point  Signage and dog bin at Dunwich Heath  View to RSPB Minsmere reserve  **Access route options** The car park provides direct access to Dunwich heath and the nearby beach, and the Suffolk Coast Path; the former consists of a large extent of open heath (Open Access Land) with a well-defined path network (minimal desire lines). From the car park, it is possible to walk along the beach and access the RSPB Minsmere Reserve. It is also possible to undertake a long circular walk south and west which includes access to Westleton heath (part of the Minsmere to Walberswick SPA/SAC). The RSPB provide a map showing three nature trails on which dogs (except registered assistance dogs) are not allowed on the sections of path within the permissive access core of the reserve (see Appendix B) but welcomes dogs elsewhere if they are on a lead. There is a well-defined path along the coast to the south. Access to Dunwich is not possible along the beach except at low tide, due to high tides coming up to the base of a line of low cliffs.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Eels Foot Eastbridge
(Access point R)
Figure 005</td><td>Car parking
Estimated combined capacity of 63 spaces. Approximately 50 spaces at the Eels Foot Inn car park, approximately 10 spaces at the footpath to Minsmere Sluice and a further 3 spaces on approach to Eastbridge from the south.
Visitor Facilities
Eels Foot Inn welcomes dogs.
Accessibility
The Minsmere Sluice and coast can be accessed via a public footpath that runs adjacent south of the Minsmere New Cut. The Suffolk Coastal Path can be joined at the coast. The Sandlings Walk runs directly through Eastbridge Village. Habitat in the vicinity of Eastbridge is primarily farmland, with small pockets of mixed woodland, and marshland and reedbeds to the north.
Eastbridge provides opportunities for circular walks to the coast and then north returning through RSPB Minsmere.
Existing visitor management activities
No evidence.
Advice to dog owners
No evidence.</td><td>Eels Foot Public House car park
 
Signage to the Minsmere Sluice
 
Watering facilities for dogs at the Eels Foot Inn
 
Access to local footpaths
 
Access route options
Given proximity to the coast via Minsmere New Cut and Sluice, the RSPB Reserve and access to the Sandlings Walk, combined with the facilities of the Eels Foot Inn, this access point is a popular destination for walking particularly with dog owners.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Aldringham Walks (Access point S) Figure 006	**Car parking** Estimated capacity 10 cars, no charge, surfaced with gravel, not signposted. **Visitor facilities** A general litter bin is provided. **Accessibility** Car park gives direct access to Open Access Land and a comprehensive rights of way network. Paths unsurfaced sand or grass. Habitat in the immediate vicinity of car park is scrub and bracken but this opens out into heather dominated heath. **Existing visitor management activities** No obvious measures other than signage. No evidence of warden presence. **Advice to dog owners** No dedicated dog bins; general litter bin not signed as suitable for bagged dog wasted. Faded signs on public rights of way fingerposts at roadside access points (with no car parking) state “Keep dogs under close control”.	Car park at Aldringham Walks  Footpath to Aldringham Walks  **Access route options** The car provides access to a series of footpaths, Open Access Land and heath that forms part of Aldringham Walks (part of the Sandlings SPA). While visible from the B1353, this informal car park is not shown on the Ordnance Survey Landranger and Explorer maps used by visitors and as a result it will be known primarily to local people. Aldringham Walks is relatively open in places, supporting short sward acid grassland and heather dominated heath. Blocks of woodland planting and patches of scrub are also present.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Thorpeness (village car park)
(Access point T)
Figure 006</td><td>
Car parking
Capacity estimated at 100 cars, charges up to £3.50 per day, surfaced with gravel and signposted.
Visitor facilities
Information boards and notices. Tea room and public house located in the adjoining village, as well as a boating lake.
Accessibility
Car park gives direct access to the beach and the Suffolk Coast Path. Habitat and path surfaces comprise shingle.
Existing visitor management activities
A rope fence is erected on the beach each year at Thorpeness to provide some protection to shingle habitat and species. No evidence of warden presence.
Advice to dog owners
Dogs are not permitted onto a small area of beach nearest the car park between the 1 May and 30 September (see Figure 006); this restriction is stated in the car park and when approaching the beach. However, the termination points of the restriction are not made clear on site, and no alternative route to the beach is indicated for visitors arriving in the car park with dogs.

A faded panel in the car park has a map showing nearby Access Land with different messages about dog control depending on the type of access being used, including: keeping dogs under close control preferably on a short fixed lead on public rights of way; keeping dogs on a short fixed lead on access land between 1 March and 31 July; dogs on a lead at all times near livestock.

General litter bins were present; while some had signage saying this was a “designated poop scoop area” they did not say that such bins could be used for bagged dog waste. Some dedicated dog waste bins were present on the edge of the beach.
</td><td>
Thorpeness car park

Signage at Thorpeness

Thorpeness beach


Shingle vegetation at Thorpeness beach

Access route options
The car park at Thorpeness provides direct access to the beach. It is also possible to walk to parts of Aldringham Walks and Sandlings SPA via two footpaths leading west from the village, and along the Suffolk Coast Path to the north. However, the majority of visitors to Thorpeness are likely to access the beach and facilities within the village rather than walk inland.
</td></tr>
</table>

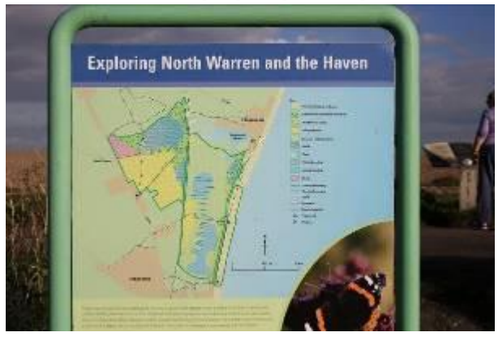
<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Lay-by north of Aldeburgh
(Access point U)
Figure 006</td><td>
Car parking
Estimated capacity 8 cars, no charge and not surfaced.
Visitor facilities
An information board is located at the entrance to the North Warren Nature Reserve and provides a general level of information about the reserve. No public convenience. Dedicated bin for dog waste.
Accessibility
Car park gives direct access to the beach and a grass surfaced right of way that leads to North Warren. Habitat in vicinity of car park comprises shingle beach and grassland.
Existing visitor management activities
A rope fence is erected on the beach each year between Thorpeness and Aldeburgh to provide some protection to shingle habitats and species such as sea pea, sea kale and yellow horned poppy. No evidence of warden presence.
Advice to dog owners
There is no advice to dog owners.
</td><td>
Lay-by on Thorpe Road

Entrance to North Warren


Path to North Warren

Shingle habitat protection


Access route options
The lay-by provides direct access to the beach south of Thorpeness. This beach supports sensitive shingle vegetation, which is designated as SSSI rather than SAC at this location.
From the lay-by, the Suffolk Coast Path cuts across the coastal floodplain and grassland (not within a European Site) to the west. The footpath is screened by scrub vegetation and fencing on both sides, reducing the potential for users to access the floodplain. It is also possible to do a circular walk to parts of Aldringham Walks and RSPB North Warren Nature Reserve (Sandlings SPA), although this would entail a lengthy (4-5km) route.
</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Aldeburgh (car park to north of village) (Access point V) Figure 007	**Car parking** Capacity estimated at 250-300 cars, surfaced in gravel and signposted. There is a charge of £3.50 per day for parking. **Visitor facilities** Information boards provide a general level of information about the North Warren Nature Reserve and public access within it, and some limited information about sensitive features. No public convenience. **Accessibility** Car park gives direct access to shingle beach. **Existing visitor management activities** No evidence of warden presence. **Advice to dog owners** Dogs are welcome but requested to be kept under close control to avoid disturbance to sensitive wildlife. General litter bins and dedicated dog waste bins are both provided.	Main car park north of Aldeburgh  Car park signage  Information board highlighting walking routes  Car park entrance  **Access route options** This car park provides direct access to the beach just north of Aldeburgh. It provides access for a circular walk across parts of the RSPB North Warren Nature Reserve (Sandlings SAC) and circular walking routes along the edge of the Alde-Ore Estuary SPA, SAC, Ramsar site.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Aldeburgh (car park to south of village)
(Access point W)
Figure 007</td><td>Car parking
Capacity in excess of 200 cars plus coaches in designated car parks, parking charge required for some areas, partially surfaced, materials include tarmac and gravel, and well signposted. Further estimated 200 spaces along the coast southwards towards Martello Tower.
Visitor facilities
Public convenience, sailing club and signage, including the lack of public access towards Orfordness NNR.
Accessibility
Gives direct access to the shingle beach and to a dirt surfaced path giving access to a short section of the Alde Ore estuary, with path closed south of Martello Tower. Habitat in the immediate vicinity is shingle beach and floodplain grassland/saltmarsh.
Existing visitor management activities
The National Trust has erected signage, fencing and a vehicle barrier to prevent unauthorised vehicular public access to Orfordness from Aldeburgh along the shingle spit, and deter public access on foot.
Advice to dog owners
Dogs are not permitted on part of the beach closer to Aldeburgh between 1 May and 30 September; this is clearly sign posted on the beach. Dog waste bins provided.</td><td>Main car park south of Aldeburgh
 
Main car park south of Aldeburgh
 
Footpath to Alde-Ore Estuary
 
Access restrictions to Orfordness
 
Access route options
The car park allows access to the banks of the Alde-Ore estuary. The National Trust manages Orfordness and has erected signage, fencing and a vehicle barrier to prevent unauthorised public access by vehicles south to Orfordness, and deter public access on foot. Public access to Orfordness is physically restricted to specific times via a boat from Orford (see Access Point EE). From Aldeburgh it is possible to access a short section (approximately 3-4km) of the banks of the Alde-Ore Estuary, before the public footpath turns back inland to Aldeburgh.</td></tr>
</table>

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>North Warren (Access point X)
Figure 006</td><td>Car parking
Capacity estimated at 8 cars, surfaced with gravel and no charge. Not signposted and hard to find, but it is marked on the OS Explorer map.
Visitor facilities
An information board and additional signage provides background information on the nature reserve and includes specific information relating to the use of Open Access Land at North Warren. No public convenience.
Accessibility
Car park gives direct access to Open Access Land and a right of way that crosses the Sandlings SPA. Paths appear not to be surfaced being grass or sand. Habitat in the vicinity of the car park is short sward acid grassland and open heath with sparse heather.
Existing visitor management activities
No obvious measures other than signage. No evidence of warden presence.
Advice to dog owners
A dog waste bin is provided.</td><td>Informal car park at North Warren
 
Footpath to heath
 
Dog restriction sign
 
Open heath at North Warren
 
Access route options
The car park allows direct access to an area of heathland forming part of the Sandlings SPA. It is possible to access the Sandlings Walk from North Warren but a lack of rights of way makes it difficult to construct longer circular walks. A circular walk (2-3km) of the heath itself is more feasible.</td></tr>
</table>

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Sailors' Path
(car park)
(Access point Y)
Figure 007</td><td>Car parking
Estimated capacity 5 cars, no charge, recently resurfaced with stone and not signposted although indicated on Ordnance Survey maps.
Visitor facilities
An AONB information board provides a basic level of information on the surrounding local landscape and Sailors' Path. General waste and recycling facilities are provided. No specific information is provided about site sensitivities. No public convenience.
Accessibility
Gives access to a sand and gravel track (Sailors Path). Surrounding habitat arable fields and floodplain grassland/saltmarsh. In turn gives access to the Hazelwood Marshes Nature Reserve and a bird hide, managed by Suffolk Wildlife Trust.
Existing visitor management activities
No evidence of warden presence.
Advice to dog owners
No specific advice on information panel or facilities provided. The Sailors' path leaflet available locally states: "Dogs are very welcome, but please keep them under close control at all times and on lead as advised".</td><td>The sailor's path car park
 
Signage for walking routes
 
Information board
 

Signage for Hazelwood Marshes
 

Access route options
This small car park allows access to the start of the Sailors Path following the Suffolk Coast Path linking Aldeburgh and Snape and gives access to the SWT Hazelwood Marshes Reserve, part of the Alde-Ore Estuary SPA/SAC/Ramsar. The Sailors' path is set back from the edge of the estuary and screened by woodland and other vegetation along most of its length, making disturbance less likely. Following a coastal surge in 2014, Hazelwood Marshes is now an area of intertidal mudflat and developing saltmarsh as opposed to coastal floodplain grassland as previously, thus restricting off-path access opportunities.</td></tr>
</table>

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Snape Warren (Access point Z)
Figure 007</td><td>
Car parking
Capacity estimated 8 cars: no charge, not surfaced, not signposted and not shown on Ordnance Survey maps.
Visitor facilities
Interpretative panels by the RSPB and Suffolk Coast and Heaths describe the area's wildlife and cultural heritage. Dedicated bin for dog waste.
Accessibility
Car park gives direct access to Open Access Land and unsurfaced public rights of way. Habitat in the vicinity comprises an extensive area of heather dominated heath.
Existing visitor management activities
Relatively new electric fencing has been installed adjacent to the car park where sheep are grazing. No evidence of warden presence.
Advice to dog owners
No information on longstanding AONB general information panel; RSPB information panel states “Please keep to the footpaths and keep dogs on leads”. Recent National Trust signage about grazing requests that dogs are kept “on a short lead and under control around the sheep”.
</td><td>
Snape Warren car park

One of the car park panels


One of the car park panels


Access routes signposted from the car park

Access route options
The car park at Snape Warren gives direct access to lowland heath (part of the Sandlings SPA). It also allows access to the Sailors’ Path (east) following the Suffolk Coast Path linking Aldeburgh and Snape. Heading east for 4km via Black Heath Wood gives access to the SWT Hazelwood Marshes Reserve, part of the Alde Ore Estuary SPA/SAC. The Sailors’ Path is set back from the edge of the estuary and screened by woodland and other vegetation along most of its length, making disturbance to the estuary less likely. Heading west, the Suffolk Coast Path runs along the riverbank at the head of the estuary to Snape Bridge. Snape Warren is relatively open in places, with dense heather.
</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Snape Maltings (Access point AA) Figure 007	**Car parking** Capacity estimated at 80-100 cars, no charge, well surfaced and signposted. **Visitor facilities** Snape Maltings is a privately-owned estate that provides extensive visitor and parking facilities for people attracted to the retail complex. The complex is open each day of the week between the hours of 10am – 5:30pm (regular opening hours). Parking is free for visitors. There are also approximately 8 off-road parking spaces south of Snape Maltings with unrestricted access. There is limited signage relating to the Alde-Ore Estuary with the primary focus on the on-site buildings and businesses. Minimal signage is provided at the edge of the adjoining footpath requesting that visitors keep out of the conservation area for ground nesting birds. Dedicated bin for dog waste adjacent to road bridge. **Accessibility** Car park on eastern edge of the Maltings complex gives direct access, via a short permissive footpath, onto a gravel and sand path along the southern edge of the estuary and SPA/SAC/Ramsar site. By crossing the road bridge, the public footpath along the northern bank of the estuary can also be accessed. Habitats in the vicinity of the Maltings are predominately short sward improved grassland and arable fields. Saltmarsh and mudflat along the edge of the estuary. **Existing visitor management activities** None evident other than signage. No evidence of warden presence. **Advice to dog owners** No specific advice provided apart from sign on one of the public footpath fingerposts stating “Keep dogs under close control”.	Snape Maltings retail complex  Car parking south of Snape Maltings  Path along the Alde-Ore Estuary  Information board  **Access route options** The car park at Snape Maltings, and the small unrestricted car park to the south, give access to a series of large open fields and then to the southern shore of the Alde - Ore Estuary with access possible as far as a picnic site and car park at Iken (access point BB) along the Suffolk Coastal Path; however, for the majority of its length the footpath is set back from the estuary, separated by a wide fringe of reeds. To the north access is possible to the Suffolk Coast Path and Sailors’ Path route (access points Z and Y) but it is possible to do a shorter circular walk along the north bank of the estuary and RSPB Snape Warren Reserve, a parcel of heathland and Open Access Land forming part of the Sandlings SPA.

<table>
<tr><th>Access point and Figure reference</th><th>Site features</th><th>Site photographs, and potential access route options</th></tr>
<tr><td>Iken Picnic Site (Access Point BB)
Figure 007</td><td>Car parking
Capacity estimated 100 cars: no charge, a grass rather than a metalled surface, shown on Ordnance Survey maps. Signposted from the adjacent public road.
Visitor facilities
AONB information board. Dedicated bin for dog waste provided at entrance alongside general litter bin.
Accessibility
Car park does not give access to Open Access Land. Direct access to rights of way extending along the southern edge of the Alde Ore Estuary to west and east. OS map shows public footpath extending across the estuary to the north; however, it appears this path will become waterlogged and impassable. Habitat in the vicinity comprises salt marsh, and arable fields.
Existing visitor management activities
Signage indicates the car park is closed between dusk and 9am; a lockable entry barrier is present.
Advice to dog owners
No written information or other signage.</td><td>Iken Picnic Site car park
 
Entrance signage
 

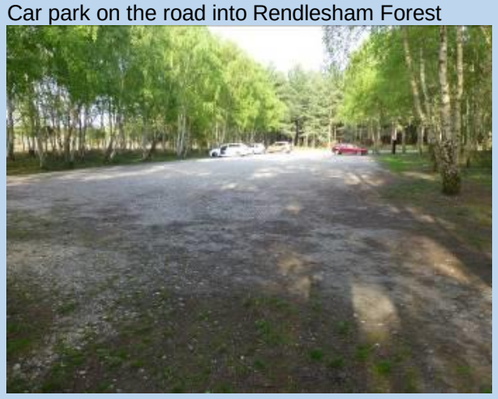
Footpath signage
 
AONB Information board
 

Access route options
The car park at Iken gives access to footpaths along the southern bank of the Alde-Ore estuary extending 1-3km to the west and east. From Iken it is also possible to access heather dominated heath at Blaxhall Common (part of Tunstall Forest) but this would involve a circular walk of approximately 4km and walking along minor roads.</td></tr>
</table>

Access point and Figure reference	Site features	Site photographs, and potential access route options
Tunstall Forest (Access point CC) Figure 009	**Car parking** Capacity estimated 200 cars at car parks and off-road parking spaces. Surface of car parks sand/gravel and shown on Ordnance Survey maps. The Sandgalls car park has barriers restricting access to some parking spaces **Visitor facilities** Car parks, walking trails, a mountain bike trail, picnic sites, interpretive signage. Information online says dogs are welcome. BMX bike park at Sudbourne Woods. **Accessibility** Car parks give direct access to Open Access Land, consisting of open heather dominated heath as well as commercial plantation and woodland. The Sandlings Walk and Suffolk Coast Path run through the forest. **Existing visitor management activities** Not known, but management is evident. **Advice to dog owners** Signage erected by Blaxhall Parish Council and the Suffolk Wildlife Trust states dogs should be on a short fixed lead between 1 March and 31 July and at all times near livestock. Open access signage states that the latter restrictions do not apply on public rights of way. Signs in other locations state to keep dogs under close control and flick dog poo off paths with a stick. Dedicated bins for dog waste provided in some locations.	Parking at Tunstall Common  Parking at forest entrance south of Blaxhall  Parking at Sudbourne Wood  Sign for the Viking bike trail at Sandgalls car park  **Access route options** The car parks at Tunstall Forest enable direct access to the forest and heaths. Main access is along well-worn paths and rides with a variety of circular routes available. The Viking Way cycle route is promoted within the forest.

Access point and Figure reference	Site features	Site photographs, and potential access route options
Butley (Access point DD) Figure 008	**Car parking** Two car parking access points on the west side of the estuary. One at RSPB Boyton Marshes Nature Reserve where there are approximately 10 spaces. A second near Chapel St Andrew at the western end of a footpath signposted to Butley Ferry where there are a further 10 spaces. Boyton Marshes Nature Reserve is signposted at the road entrance, and a car park sign is in place at the car park at Banters Barn Farm. **Visitor facilities** Information board describing the Boyton Marshes Reserve. No facilities at Chapel St Andrew. **Accessibility** There are public footpaths leading from both parking areas to the Suffolk Coast Path which runs along the western edge of Alde, Ore and Butley Estuaries SAC and the Alde-Ore Estuary SPA/Ramsar from south of the Butley Ferry. North of the ferry there is no public access to the site, until roads adjoin it at the northern end at Butley Mills, near Chillesford. At Boyton Marshes a public footpath runs through the grazing marsh and wetland habitat of the nature reserve, adjoining the SAC/SPA/Ramsar sites, and connects with the Suffolk Coast Path. Information obtained from the internet in May 2019 states that, in 2019 the Butley ferry runs from 20 April until 13 October on weekends and bank holidays with a charge of £2 per passenger and £1.50 for children; dogs are carried free of charge. A public footpath runs from the ferry for approximately 0.5km along the western edge of the European Site before turning inland. While public access to either side of the ferry is only recorded as a public footpath (so pedestrians only), the Butley Ferry leaflet indicates these paths are also a promoted cycle route, as does the signage at the Chapel St Andrew car park; the ferry also advertises carrying bicycles for £1.50. **Existing visitor management activities** None apparent apart from signs as described below. **Advice to dog owners** At the entrance to Boyton Marshes Nature Reserve a temporary notice has been erected asking dog owners to keep pets under close control as they pass the flooded area due to the proximity of nesting avocets, and a permanent sign asks dog walkers to clean up dog faeces. At Chapel St Andrew signs ask owners to keep dogs on leads at all times, although no reason is given nor is the extent of the restriction clear.	RSPB Boyton Marshes Nature Reserve car park  Signs at Boyton Marshes Nature Reserve  Sign at car park near Chapel St Andrew  The start of the footpath from the car park near Chapel St Andrew  **Access route options** Footpaths lead from both car parks to the Suffolk Coast Path which runs along the western edge of the Alde, Ore and Butley Estuaries SAC and the Alde-Ore Estuary SPA/Ramsar from south of the Butley Ferry. People visit Boyton Marshes to view wildlife on the nature reserve (outside the European Site) and also walk along the Suffolk Coast Path on the edge of the European Site. The car park near Chapel St Andrew offers walks to the Suffolk Coast Path and south to Boyton Marshes and beyond, or north to Chillesford. A public footpath and cycle route leads from the car park to Butley Ferry which is only open in the summer on weekends and bank holidays; it crosses the Butley River where paths and roads lead to Orford.

Access point and Figure reference	Site features	Site photographs, and potential access route options
Orford (Access point EE) Figure 008	**Car parking** The main pay and display car park has an estimated capacity of almost 200 cars. Charge £10 for 24 hours, and less for shorter periods. There are also other spaces within the town and at the quay, and at Orford Castle (managed by English Heritage). **Visitor facilities** Orford has a number of shops and pubs. Orford Castle has a museum and shop. Boat trips along the River Ore (within the European Site) are available from Orford Quay. Ferries run from Orford Quay to Orfordness between April to September (20 April - 22 June and 5 – 26 October Saturday only, 25 June - 28 September Tuesday to Saturday) with a charge. Signs provide information on the area. Seats, general litter and dog waste bins provided. Public toilets and water bowls for dogs in the car park. **Accessibility** Footpaths run along the bank of the River Ore to the north and south of Orford. A road and footpaths route connects to Butley Ferry to the west as described at access point DD. Access to Orfordness is restricted to ferry crossings described above. **Existing visitor management activities** Not known **Advice to dog owners** A sign on the edge of the quay says no dogs on the beach between 1st May and 30th September, although the spatial extent of the restriction was unclear. Online information indicates that dogs (apart from assistance dogs) are not allowed on the ferry to Orfordness, although this is not stated on National Trust signage on the quay. Dogs are allowed on sightseeing river trips. Warning signs about the dangers to dogs from washed-up palm oil are present.	The main pay and display car park at Orford  Orford Quay  Footpath leading south from Orford Quay  AONB sign  **Access route options** Access into the Alde, Ore and Butley Estuaries SAC, the Alde-Ore Estuary SPA/Ramsar and the Orfordness-Shingle Street SAC is restricted to boat trips along the River Ore, ferry crossings at certain times of year from Orford, footpaths along the northern bank of the River Ore, and public footpaths with promoted cycle route connecting to Butley Ferry which crosses the Butley River to the west (operating at certain times of the year). Access opportunities into the European Sites are therefore constrained.

Access point and Figure reference	Site features	Site photographs, and potential access route options
Rendlesham Forest (incl. Sutton Heath) (Access point FF) Figure 010	**Car parking** Capacity estimated 450 cars at car parks and off-road parking spaces. Surface of car parks sand/gravel and some are shown on Ordnance Survey maps. The main car park in the centre of Rendlesham Forest and a smaller car park on the approach to it are pay and display, charging up to £4.00 per day for cars. Other car parking areas are free, including at Sutton Heath. **Visitor facilities** Online information about Rendlesham Forest says that there are 3 walking trails, 2 cycling trails, orienteering trails, a bike park, bike hire, horse riding, play areas, picnic areas, BBQs, a mobile café, and that dogs are welcome. There is also a public convenience and information centre. Sled dog training also takes place. Information signs at a number of locations throughout the forest. The car park at Sutton Heath has an enclosed and gated "dog exercise area". Dedicated bins for dog waste were present at some locations with "pick up" signage affixed to them, in some cases adjacent to general litter bins. **Accessibility** Car parks give direct access to Open Access Land, consisting of commercial plantation and woodland, and areas of heath. A network of unsurfaced rides and paths are accessible from each car park. The Sandlings Walk runs through Rendlesham Forest, and the Suffolk Coast Path runs along its eastern edge. **Existing visitor management activities** Not known in detail, but active management is evident and Forestry England staff were seen on site. **Advice to dog owners** Across the range of car parks and other access points, a variety of signs and panels give different messages including: "Keep your dog on a lead from March 1st to July 31st"; "Keep dogs on lead"; "Keep dogs under close control"; "Dogs on lead please"; "No messing about. Please bag it and bin it". In the main car park in the centre of Rendlesham Forest, signage requested: "Please keep your dog on a lead in play areas and the car park area. Do not allow them to foul these areas. Dogs should be under control on Forestry Commission land at all times. Please take note of 'no go' areas for dogs where applicable". Signage at Rendlesham Forest also indicated the areas where sled dogs are trained between 4pm and 10.30am, requesting that other visitors "keep your dog under control and allow sled dog teams to pass safely".	Car park at Sutton Heath  Car park at Upper Horsley Common  Main car park at the centre of the forest  Car park on the road into Rendlesham Forest  **Access route options** The car parks at Rendlesham Forest enable direct access to a variety of routes across the forested and heathland areas. Primary access is taken along well-worn paths and rides with a variety of circular routes available. Cycle routes and walking trails are promoted within the forest. These link to Sutton Heath by crossing the minor road between Sutton Hoo and Lower Hollesley Common.

6. Summary and conclusion

6.1 Introduction

6.1.1 This report presents the evidence base for potential disturbance effects on designated European Site interests, namely Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites, caused by the potential displacement of access users, from existing informal outdoor recreational resources in and around Sizewell, and by the influx of construction workers, during the construction and operation of Sizewell C nuclear power station (SZC).

6.1.2 The information contained within this report will be used to inform the HRA in relation to any potential recreation disturbance caused by the construction and operation of SZC.

6.2 European Sites

6.2.1 The following European Sites that could potentially be impacted by an increase in recreational pressure resulting from the construction of SZC have been identified as:

- Alde, Ore and Butley Estuaries SAC and Alde - Ore Estuary SPA and Ramsar
- Minsmere to Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC
- Sandlings SPA

6.3 Recreational baseline

6.3.1 Baseline information on the use of the area for informal outdoor recreation has been obtained from two sources:

- A desk-based review of existing recreational visitor survey information produced over the last 16 years that is relevant to the SZC project, ranging from a national scale survey by Natural England (that provides information about the relationship between people and the natural environment), to county-scale and localised surveys. This information is referred to as 'the existing surveys' below.
- Visitor surveys undertaken in 2014 and 2015 specifically for the SZC project (referred to as 'the SZC visitor surveys' below).

6.3.2 The existing surveys provide a framework and context for the results of the SZC visitor surveys. There is a strong correlation between the type and profile of visitors recorded in the SZC visitor surveys and that recorded within the wider existing surveys. The following conclusions on the existing visitors to the Sizewell area can be drawn from, and are supported by, both the existing surveys and the SZC visitor surveys:

a) Popularity of the area

6.3.3 Both the existing surveys and the SZC visitor surveys indicate the popularity of the area for visitors, and the high number of people using linear public access routes and areas for informal outdoor recreation. The SZC visitor surveys show that the popularity varies between locations with some having a much greater use than others.

b) Frequency, seasonality and duration of visits

6.3.4 Both the existing surveys and the SZC visitor surveys show that visitors make frequent visits to the area. Visitors use the area all year round, although there are greater numbers in the summer compared to the winter.

6.3.5 Both the existing surveys and the SZC visitor surveys show that the average duration of each visit is relatively short, lasting for approximately 1-2 hours. However, both the existing surveys and the SZC visitor surveys show that the average visit to RSPB's reserve at Minsmere lasts longer than 2 hours.

c) Visitor profile

6.3.6 Both the existing surveys and the SZC visitor surveys show that a range of visitors use the area including local residents, day visitors and staying visitors / holiday makers. A high proportion of visitors identified in the 2014 Sizewell C visitor surveys were local residents with a smaller proportion in the 2015 Sizewell C RSPB Minsmere visitor surveys. 25% of visitors recorded in the 2014 Sizewell C visitor surveys and 49% recorded in the 2015 Sizewell C RSPB Minsmere visitor surveys were holiday makers. This illustrates the importance of considering both local residents and holiday makers when assessing potential behaviour changes during the construction of SZC.

6.3.7 Both the existing surveys and the SZC visitor surveys show that the visitor population is generally from the older age groups.

6.3.8 Both the existing surveys and the SZC visitor surveys show that the majority of people visit in groups, although many visit alone.

d) Mode of travel

6.3.9 Both the existing surveys and the SZC visitor surveys show that the majority of people travel to the start of their visit location by car.

e) Visitor knowledge of the area

6.3.10 Both the existing surveys and the SZC visitor surveys show that people visit a range of sites within and around the local area. The SZC visitor surveys show that the majority of visitors know the area well. This indicates that the majority of visitors who may be displaced due to the SZC construction works are knowledgeable of a wide selection of alternative locations to where they may go.

f) Reasons for visiting the location or area

6.3.11 Being close to home is the most popular reason for visiting survey locations identified in the 2014 Sizewell C visitor surveys, followed by the scenery, being able to let the dog off the lead, the peace and quiet, enjoying wildlife and good access to the path network.

6.3.12 Both the existing surveys and the SZC visitor surveys show that the scenery and peace and quiet, and enjoying wildlife, are popular reasons for visiting the area. These are, therefore, important considerations when considering whether how, and the extent to which visitors' behaviour may be affected and changed due to the SZC construction works.

6.3.13 At the RSPB's reserve at Minsmere, buying something from the café / kiosk is the most popular activity identified by the surveys undertaken by the RSPB, whereas enjoying wildlife is the most popular reason for visiting RSPB Minsmere identified by the 2015 Sizewell C RSPB Minsmere visitor surveys which was undertaken on behalf of EDF Energy next to two bird hides. The different locations of the two surveys help to explain these different results.

g) Visitor activities

6.3.14 Both the existing surveys and the SZC visitor surveys show that people undertake a variety of activities with walking with and without dogs being the most popular in the 2014 Sizewell C visitor surveys, and birdwatching, walking and enjoying wildlife the most popular in the 2015 Sizewell C RSPB Minsmere visitor surveys.

6.3.15 Both the existing surveys and the SZC visitor surveys show that activities vary between the sites, indicating that people choose where they go to for reasons that include the suitability of the location to support the type of activity that they wish to pursue.

h) Dog walking

6.3.16 Both the existing surveys and the 2014 Sizewell C visitor surveys show that a large proportion of walks are undertaken with dogs. Dogs are not allowed at the survey locations used in the 2015 Sizewell C RSPB Minsmere visitor surveys so no dog walkers were recorded.

6.3.17 Both the existing surveys and the 2014 Sizewell C visitor surveys show that a large proportion of dog walkers prefer to exercise their dog off lead; this is consistent with the general behaviour of walkers with dogs elsewhere (e.g. Edwards and Knight, 2006).

6.3.18 The 2014 Sizewell C visitor surveys shows that the proportion of dogs walked off the lead varies between sites, and that dog walkers know a large number of locations where they feel able to exercise their dogs off the lead for some or all parts of a walk.

6.4 Potential additional recreational visitors to European Sites during SZC construction

6.4.1 Measures will be put in place to minimise disturbance to existing users of informal outdoor recreational resources during the 10-year construction phase of SZC, which EDF Energy will seek to agree with consultees through consultation, and masterplan, landscape and PRoW and access strategies. These strategies are being prepared as part of an iterative design / assessment / consultation process and have yet to be finalised and agreed. Current proposals being considered include:

- Substantial retention of existing linear access routes (including public rights of way and permissive paths) during construction, so as to limit as much as possible the potential for displacement due to temporary path diversions. This includes keeping the popular permissive footpaths within Kenton Hills (within the EDF Energy Sizewell Estate) open during the construction phase, where dog walkers will continue to be welcome;
- Improvements to the car park at Kenton Hills and increasing its capacity to make it more attractive for visitors;
- Provision of significant areas of public access at Aldhurst Farm which is to be developed and agreed in balance with the agreed habitat creation objectives;
- Further improvements to enhance public access into, and within, the EDF Energy Sizewell Estate and secure better links with Aldhurst Farm, including improved information and signage for all access users.

6.4.2 These mitigation and enhancement measures within the EDF Energy Sizewell Estate, which will seek to reduce numbers who displace to European Sites, will be considered as part of the measures to mitigate for any adverse effects assessed in the HRA.

a) Displaced existing visitors

6.4.3 The SZC visitor surveys show that approximately 29% of visitors to existing outdoor informal recreational routes and areas may be displaced to alternative locations. Published evidence on perception surveys indicates that, in practice, the actual percentage of people who will be displaced by the construction of SZC is likely to be significantly less than 29%. However, a precautionary approach has been taken to the SZC HRA displacement evidence base, and the recorded figures presented in the 2014 Sizewell C visitor surveys report (ES Volume 2 Appendix 15A (Doc Ref. 6.3)) are used as the basis for estimating the potential increase in recreational pressure at European Sites.

6.4.4 The European Sites that are likely to receive the greatest numbers of displaced visitors are Minsmere to Walberswick SPA and Ramsar and Minsmere to Walberswick Heaths and Marshes SAC, Sandlings SPA, and the Alde, Ore and Butley Estuaries SAC and Alde - Ore Estuary SPA and Ramsar. Only one respondent to the 2014 Sizewell C visitor surveys stated that they may be displaced to the Orfordness and Shingle Street SAC.

6.4.5 Most people would travel to alternative locations by car and there are a range of car parks at or near these European Sites to facilitate that.

6.4.6 There are a large number of alternative locations to where displaced visitors may go and that they are aware of (including many locations away from European Sites), spread over a wide area, diffusing potential increases in recreational pressure at individual European Sites.

6.4.7 A small proportion of people said that they might be displaced to locations outside the study area. Each location was, however, only named by a small number of people (most only named by one person, with two named by two people and one (‘Norfolk’) named by three). The named locations are diffuse including some distant locations in England and Scotland. European Sites to which people may be displaced outside the study area are therefore scoped out of the HRA.

6.4.8 The popularity of dog walking, and of walking dogs off the lead, illustrate the importance of addressing displaced dog walkers when considering effects on European Sites. Dog walkers would displace mainly to other locations (including on the coast), where they can achieve a similar experience to that sought at the original location.

6.4.9 These figures have been used in Section 3.2 to estimate annual numbers of additional visits to European Sites due to the displacement of existing visitors to informal outdoor recreational resources during the construction phase of SZC, to inform the HRA.

b) Construction workers

6.4.10 It is not possible to predict with the same degree of accuracy the number of temporary construction workers with and without dogs visiting European Sites. However, based on analysis of the construction workforce required to build SZC, it is possible to draw some initial conclusions. The group of construction workers that have the greatest potential to increase visitor numbers at European Sites are those staying in rental or tourist accommodation (around 2,000 at peak). Some workers staying on the campus or in a designated caravan site (up to 3,000 at peak) are also likely to visit European Sites although it is likely that formal recreation accessible from the campus will be preferred. Workers at the campus will not be allowed to keep dogs. Reference to a national survey (PFMA 2019) indicates that on average 23% of all homes in the region have one or more dogs. However, this figure is likely to be considerably lower for construction workers' homes due to the nature of their work, their socio-demographics and recreational preferences. Moreover, research undertaken for this project indicates that only around 37% of long-term let properties within a 20 mile radius of Sizewell will allow tenants to have one or more dogs (Jenkinson, January 2016 – see Appendix D).

6.4.11 These figures have been used in Section 3.3 to estimate annual numbers of visits by construction workers, with and without dogs, to outdoor informal recreational locations within or near European Sites to inform the HRA.

6.5 Potential additional recreational visitors to European Sites during SZC operation

a) Displacement of existing visitors

6.5.1 Measures will be taken to restore and improve the access and recreation resources and landscape that may be affected by construction and operation of SZC, which EDF Energy will seek to agree with consultees through consultation, and masterplan, landscape and PRoW and access strategies. These strategies are being prepared as part of an iterative design / assessment / consultation process The objective is to create recreational resources that are attractive to users and it is not considered that there will be any significant displacement of existing visitors to European Sites during the operation phase of SZC.

b) Permanent Workforce

6.5.2 SZC will require an operational workforce (on-site) of approximately 900 people. The operator requires these workers to live within 25 miles of the site. Not all of the 900 operational staff will be net additional – some will be long-term transfers from construction roles, and others may transfer from Sizewell B in the medium-long term.

6.5.3 The operational staff are likely to buy homes in the area and become permanent residents within the housing stock in Suffolk and the East of England and are therefore not considered to form a net additional population. As such, these workers have been scoped out of this assessment.

c) Outage Workforce

6.5.4 Once the reactors are operational at SZC, there will be an extra two planned outages per year. Outages will be placed at equal intervals and managed to avoid peak tourist seasons where possible. It is anticipated that there will be approximately 850 NHB workers per outage. As existing residents, the 'home-based' element is scoped out of this assessment.

6.5.5 In summary the net effect of the SZC operational workforce that has potential to lead to increased visits to European Sites will be:

- 850 workers in PRS and tourist accommodation, up to twice per year, for around 6 weeks each.
- There is a high propensity of house-sharing in this sector, and workers would share many traits with campus-based workers, but likely with greater income. Both PRS and tourist sector-based workers are unlikely to bring families or dogs, and more likely to return home at weekends.
- The outage workers will be working intensively to minimise the length of disruption to power station operation, which will limit time for visiting outdoor informal recreation resources in the area.

6.5.6 The potential numbers of additional visits (with and without dogs), by outage workers, to locations at or near European Sites has been estimated in Section 4 to inform the HRA.

6.6 Access to and sensitivities at European Sites

6.6.1 The results of the above surveys, and analysis of the European Sites that may be affected have been used to identify access points where it is considered that displaced existing visitors and additional people arising from the construction and operational workforces are most likely to go to access

European Sites. Given that most people would drive to the sites, particular focus is given to the car parks (formal and informal) at or near to the European Sites, alongside the easiest access to the European Sites by foot or cycle. Equestrian access was also considered but displacement of horse riders is not considered to be an issue, due to low numbers observed in the 2014 Sizewell C visitor surveys, as discussed in Section 5.1).

6.6.2 A total of 32 access points are analysed in order to determine their physical features and capacity to accommodate additional recreational use, along with the potential for any additional recreation use to take place on habitats forming part of European Sites within close proximity to the access points. This has concluded that there are significant differences between the features of the access points analysed and that these differences may influence how new, or more frequent visitors behave. For example, whilst it is physically possible to encounter habitat forming European Interest features from all of the access points, attributes such as car park capacity, whether or not there is a fee to park, the level of signage and other information provided will all influence visitor behaviour and affect the potential for any detrimental effect to occur.

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Appendix A: Figures

Figure 001 - European Protected Sites and Principal Access Site Locations (North)

Figure 002 - European Protected Sites and Principal Access Site Locations (South)

Figure 003 – European Protected Sites Benacre to Easton Bavents Access

Figure 004 - European Protected Sites Minsmere to Walberswick (North) Access

Figure 005 - European Protected Sites Minsmere to Walberswick (South) Access

Figure 006 - European Protected Sites Aldringham Walks Access

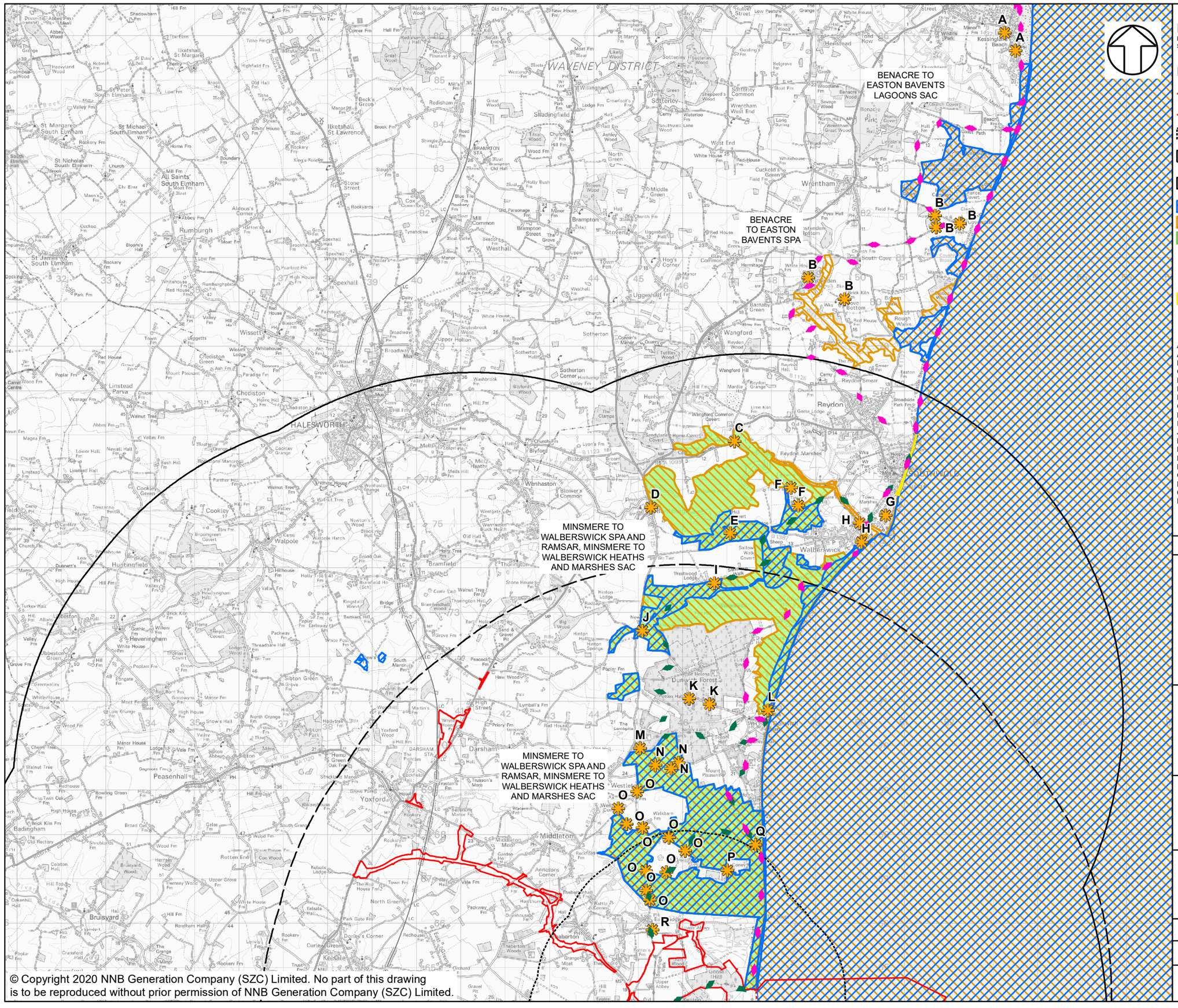
Figure 007 - European Protected Sites Alde - Ore Estuary Access

Figure 008 – European Protected Sites Alde, Ore and Butley Estuaries Access

Figure 009 – European Protected Sites Tunstall Forest Access

Figure 010 – European Protected Sites Rendlesham Forest Access

Figure 011 – Modelled Distribution of Non Home Based Construction Workers in Private Rental and Tourist Accommodation Peak



NOTES

DOG RESTRICTION AREAS DIGITISED BY LDA DESIGN FROM EAST SUFFOLK COUNCIL MAPS AVAILABLE ONLINE, APRIL 2019

KEY

- SIZEWELL C AND ASSOCIATED DEVELOPMENT SITE BOUNDARIES
- DEMARCATION LINE
- ZONE OF PHYSICAL CHANGE (2KM BUFFER AROUND MAIN DEVELOPMENT SITE)
- DISPLACEMENT ZONE (8KM BUFFER AROUND MAIN DEVELOPMENT SITE)
- BUFFER ZONE (STUDY AREA) (8KM BUFFER AROUND SETTLEMENTS IN DISPLACEMENT ZONE)
- SPECIAL AREA OF CONSERVATION (SAC)
- SPECIAL PROTECTION AREA (SPA)
- RAMSAR
- RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)
- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)
- DOG RESTRICTIONS ON BEACH
- ACCESS SITE LOCATIONS AT EUROPEAN SITES

ACCESS SITE LOCATIONS AT EUROPEAN SITES
A. KESSINGLAND
B. COVEHITHE
C. HEN REEDBED
D. BLYTHBURGH
E. WALBERSWICK (TINKER'S WALK)
F. WALBERSWICK COMMON
G. SOUTHWOLD
H. WALBERSWICK (VILLAGE CAR PARK)
I. WALBERSWICK (LODGE ROAD)
J. WALBERSWICK (NEW DELIGHT WALKS)
K. DUNWICH FOREST
L. DUNWICH (VILLAGE CAR PARK)
M. NORTH WESTLETON
N. WESTLETON HEATH
O. RSPB MINSMERE OUTER PERIPHERY (CAR PARKS)
P. RSPB MINSMERE (MAIN CAR PARK)
Q. DUNWICH HEATH (NATIONAL TRUST CAR PARK)
R. EELS FOOT EASTBRIDGE

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DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

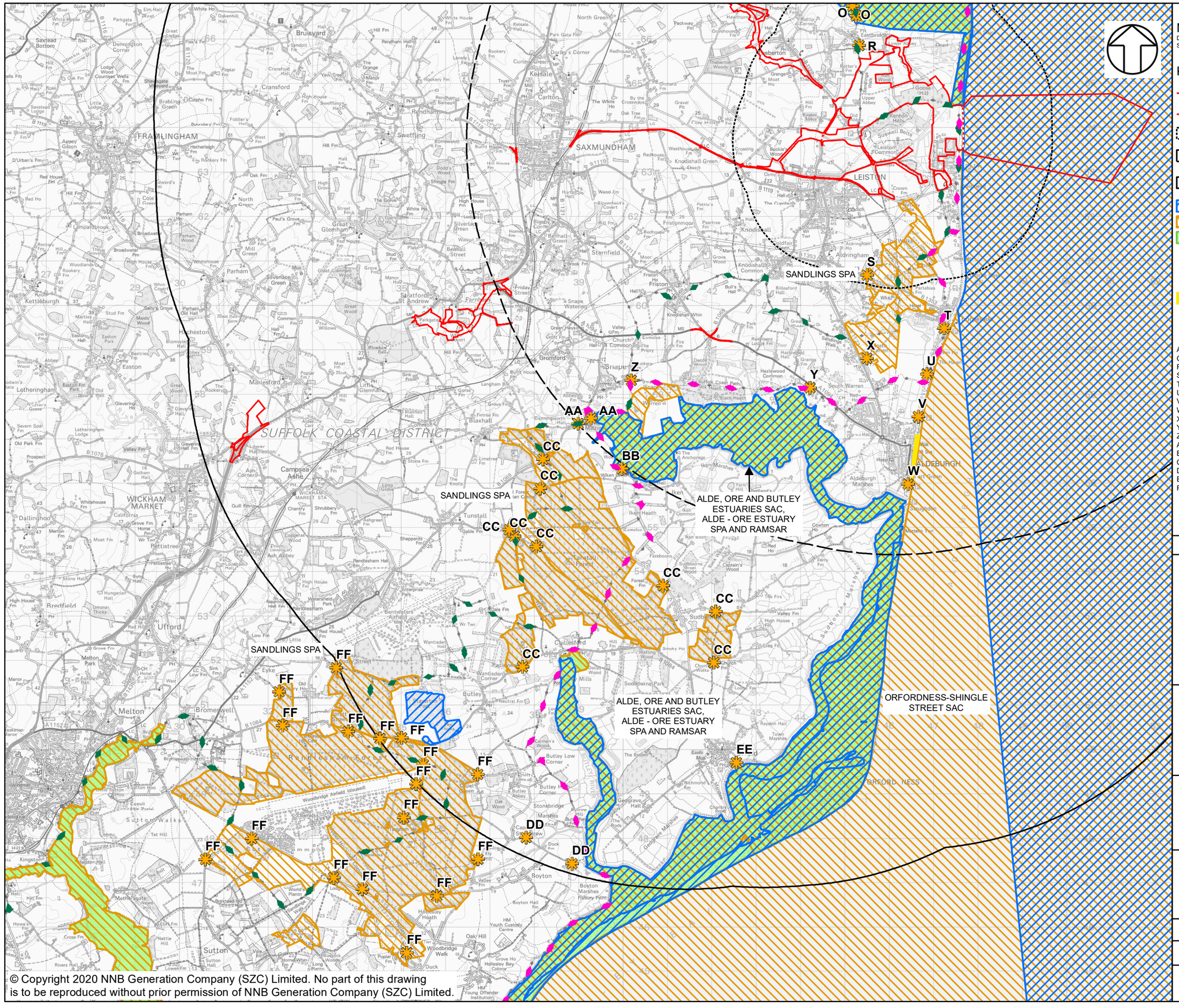
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EUROPEAN PROTECTED SITES AND PRINCIPAL ACCESS SITE LOCATIONS (NORTH)

DRAWING NO:
FIGURE 001

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:80,000 @A3

SCALE BAR
0 0.5 1 1.5 2 2.5 3 3.5 4 KM

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NOTES

DOG RESTRICTION AREAS DIGITISED BY LDA DESIGN FROM EAST SUFFOLK COUNCIL MAPS AVAILABLE ONLINE, APRIL 2019

KEY

- SIZEWELL C AND ASSOCIATED DEVELOPMENT SITE BOUNDARIES
- DEMARCATION LINE
- ZONE OF PHYSICAL CHANGE (2KM BUFFER AROUND MAIN DEVELOPMENT SITE)
- DISPLACEMENT ZONE (8KM BUFFER AROUND MAIN DEVELOPMENT SITE)
- BUFFER ZONE (STUDY AREA) (8KM BUFFER AROUND SETTLEMENTS IN DISPLACEMENT ZONE)
- SPECIAL AREA OF CONSERVATION (SAC)
- SPECIAL PROTECTION AREA (SPA)
- RAMSAR
- RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)
- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)
- DOG RESTRICTIONS ON BEACH
- ACCESS SITE LOCATIONS AT EUROPEAN

ACCESS SITE LOCATIONS AT EUROPEAN SITES

O. RSPB MINSMERE OUTER PERIPHERY (CAR PARKS)
R. EELS FOOT EASTBRIDGE
S. ALDRINGHAM WALKS
T. THORPENESS (VILLAGE CAR PARK)
U. LAY-BY NORTH OF ALDEBURGH
V. ALDEBURGH (CAR PARK TO NORTH OF VILLAGE)
W. ALDEBURGH (CAR PARK TO SOUTH OF VILLAGE)
X. NORTH WARREN
Y. SAILORS PATH
Z. SNAPE WARREN
AA. SNAPE MALTINGS
BB. IKEN PICNIC SITE
CC. TUNSTALL FOREST
DD. BUTLEY
EE. ORFORD
FF. RENDLESHAM FOREST

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DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

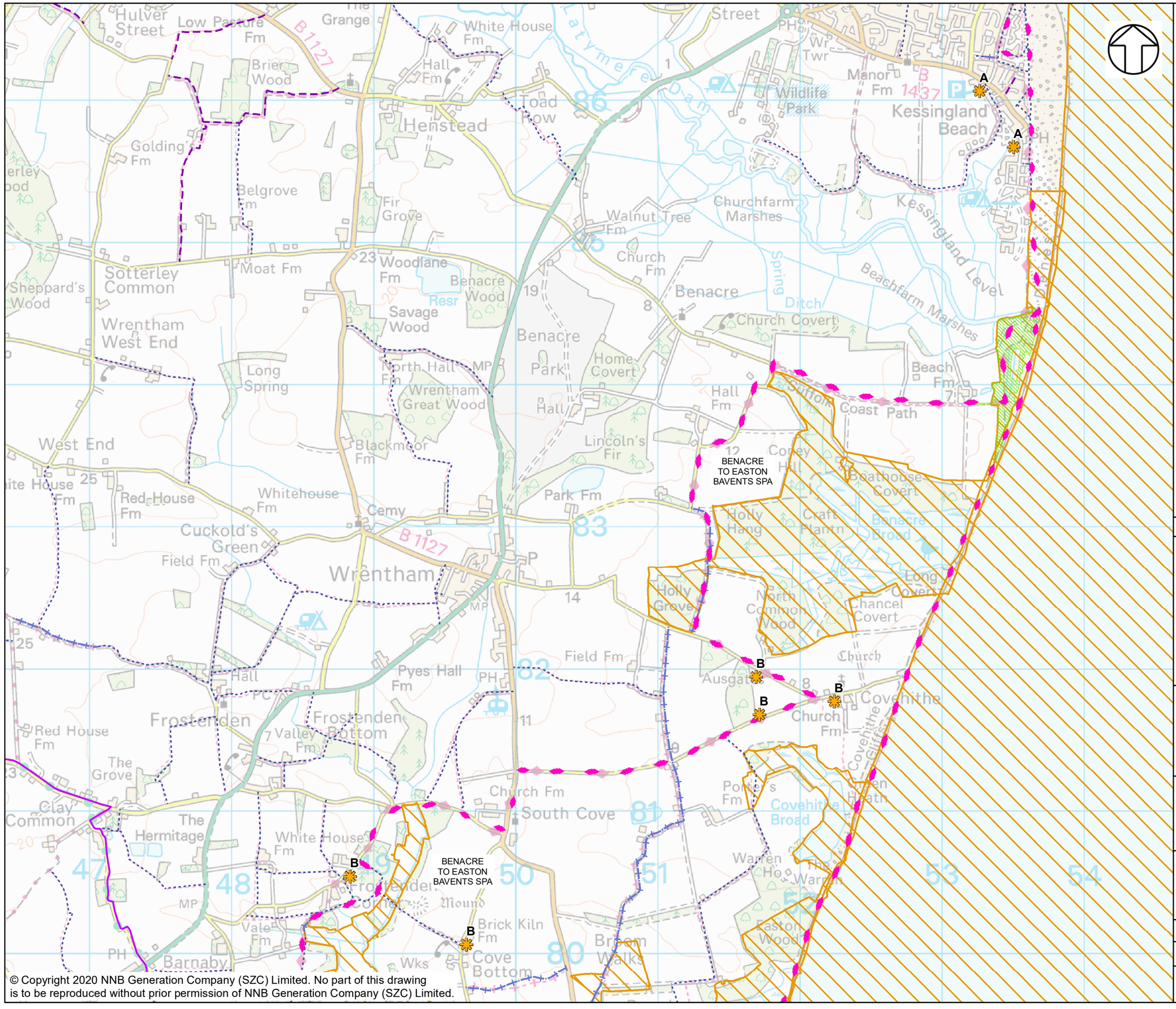
DRAWING TITLE:
EUROPEAN PROTECTED SITES AND PRINCIPAL ACCESS SITE LOCATIONS (SOUTH)

DRAWING NO:
FIGURE 002

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:80,000 @A3

SCALE BAR
0 0.5 1 1.5 2 2.5 3 3.5 4 KM

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NOTES

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KEY

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

- SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

- ACCESS SITE LOCATIONS AT EUROPEAN SITES
  A. KESSINGLAND B. COVEHITHE

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)

PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)

- FOOTPATH
- BRIDLEWAY
- BYWAY
- SUSTRANS REGIONAL CYCLE ROUTE (RCR) (31)
- OPEN ACCESS LAND

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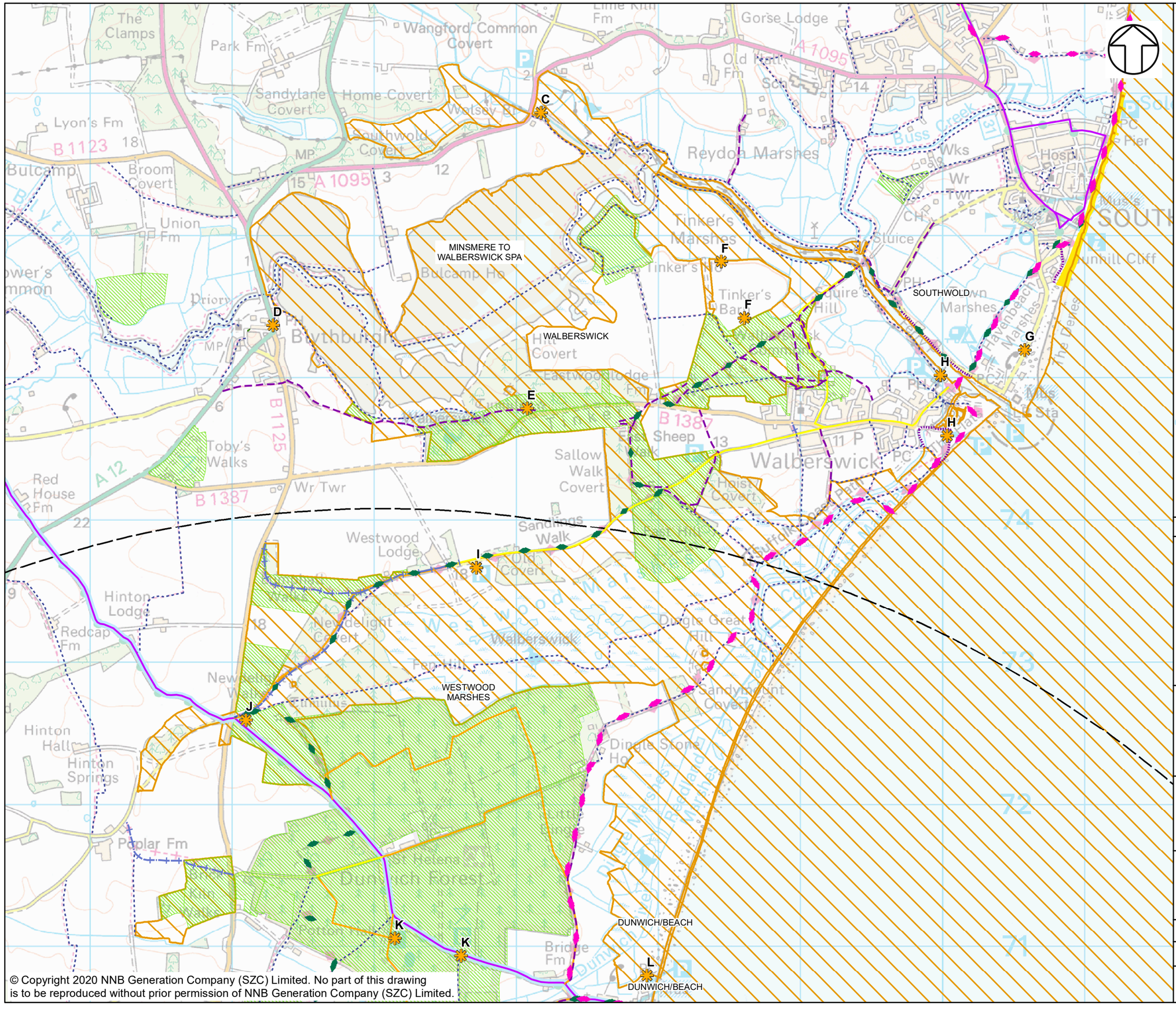
DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

DRAWING TITLE:
EUROPEAN PROTECTED SITES
BENACRE TO EASTON BAVENTS
ACCESS

DRAWING NO:
FIGURE 003

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM



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NOTES

DOG RESTRICTION AREAS DIGITISED BY LDA DESIGN FROM EAST SUFFOLK COUNCIL MAPS AVAILABLE ONLINE, APRIL 2019

KEY

- DISPLACEMENT ZONE (8KM BUFFER AROUND MAIN DEVELOPMENT SITE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

- SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

- DOG RESTRICTIONS ON BEACH
- ACCESS SITE LOCATIONS AT EUROPEAN SITES

C. HEN REEDBED D. BLYTHBURGH
E. WALBERSWICK (TINKER'S WALK)
F. WALBERSWICK COMMON G. SOUTHWOLD
H. WALBERSWICK (VILLAGE CAR PARK)
I. WALBERSWICK (LODGE ROAD)
J. WALBERSWICK (NEW DELIGHT WALKS)
K. DUNWICH FOREST
L. DUNWICH (VILLAGE CAR PARK)

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

- RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)
- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)
- FOOTPATH
- BRIDLEWAY
- BYWAY
- RESTRICTED BYWAY
- SUSTRANS REGIONAL CYCLE ROUTE (RCR) (31/42)
- SUFFOLK COASTAL CYCLE ROUTE
- ALTERNATIVE CYCLE ROUTES/SHORT CUTS/DETOURS ON ROAD
- OFF ROAD CYCLE ROUTES
- REGISTERED COMMON LAND
- OPEN ACCESS LAND

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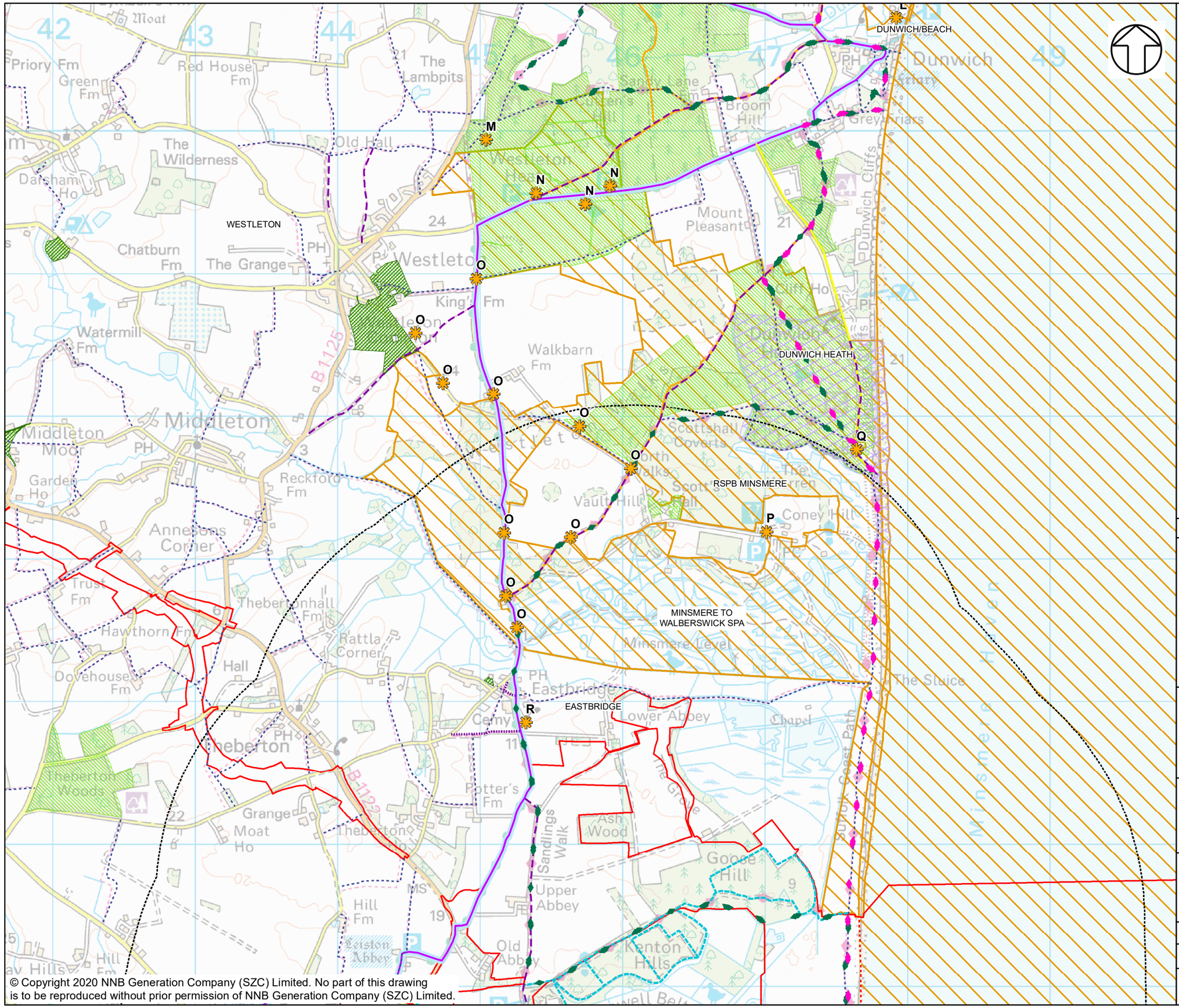
DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

DRAWING TITLE:
EUROPEAN PROTECTED SITES
MINSMERE TO WALBERSWICK (NORTH)
ACCESS

DRAWING NO:
FIGURE 004

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM



NOTES

DOG RESTRICTION AREAS DIGITISED BY LDA DESIGN FROM EAST SUFFOLK COUNCIL MAPS AVAILABLE ONLINE, APRIL 2019. MAIN PARKING AREAS SHOWN. OTHER SMALLER SPACES (EG 1-3 SPACES) EXIST ALONG ROADS WHICH ARE NOT SHOWN BUT WHICH ARE ACCOUNTED FOR IN TOTAL NUMBER OF SPACES.

KEY

- SIZEWELL C AND ASSOCIATED DEVELOPMENT SITE BOUNDARIES
- DEMARCATION LINE
- ZONE OF PHYSICAL CHANGE (2KM BUFFER AROUND MAIN DEVELOPMENT SITE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

- SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

- ACCESS SITE LOCATIONS AT EUROPEAN SITES

L. DUNWICH (VILLAGE CAR PARK) M. NORTH WESTLETON N. WESTLETON HEATH O. RSPB MINSMERE OUTER PERIPHERY (CAR PARKS) P. RSPB MINSMERE (MAIN CAR PARK) Q. DUNWICH HEATH (NATIONAL TRUST CAR PARK) R. EELS FOOT EASTBRIDGE

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

- RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)
- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)
- FOOTPATH
- BRIDLEWAY
- RESTRICTED BYWAY
- PERMISSIVE PATHS IN EDF ENERGY ESTATE (ADAS)
- SUSTRANS REGIONAL CYCLE ROUTE (RCR) (42)
- SUFFOLK COASTAL CYCLE ROUTE
- ALTERNATIVE CYCLE ROUTES/SHORT CUTS/DETOURS ON ROAD
- OFF ROAD CYCLE ROUTES
- REGISTERED COMMON LAND
- OPEN ACCESS LAND
- NATIONAL TRUST OPEN ACCESS

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DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

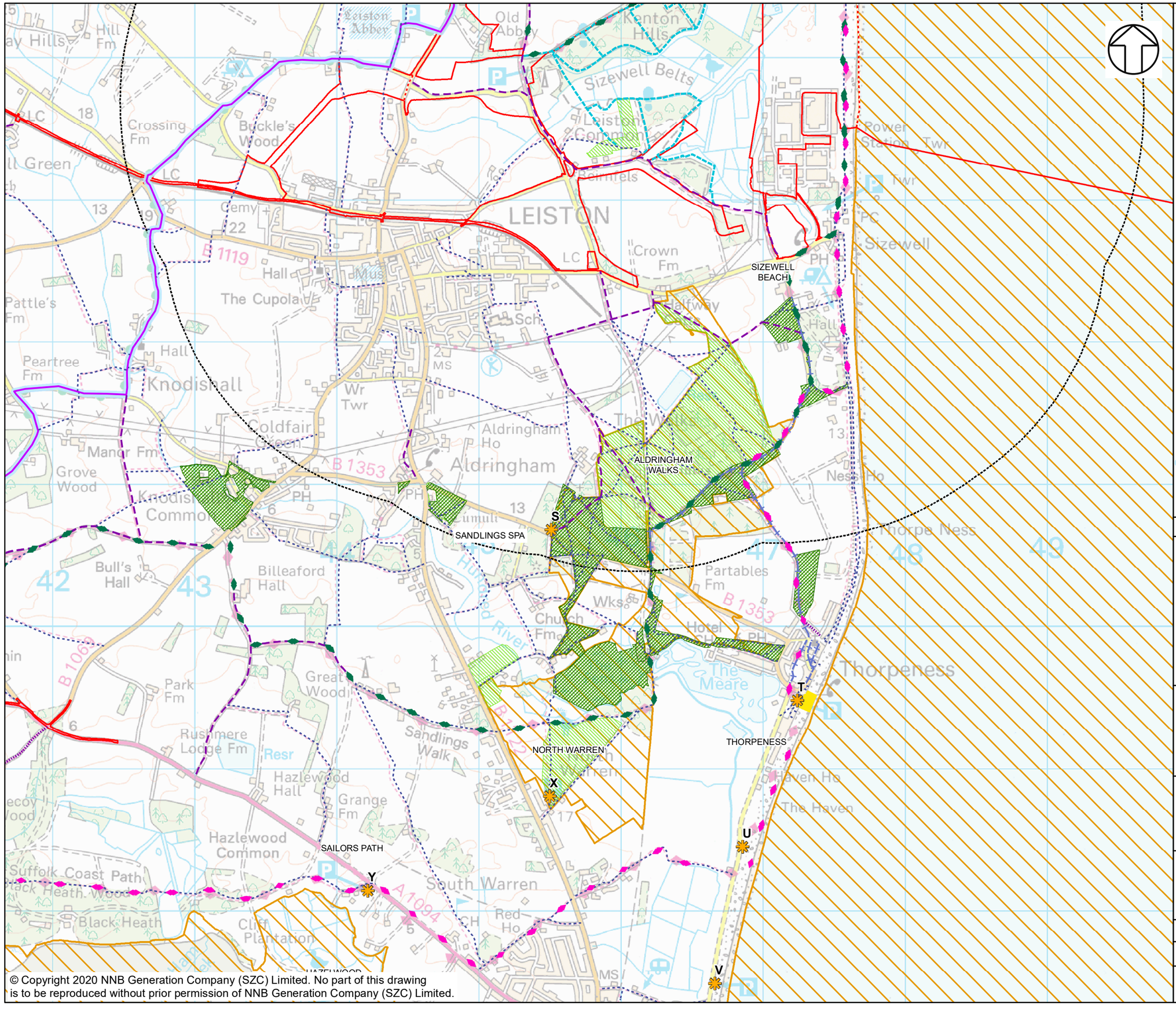
DRAWING TITLE:
EUROPEAN PROTECTED SITES
MINSMERE TO WALBERSWICK (SOUTH)
ACCESS

DRAWING NO:
FIGURE 005

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM

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NOTES

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KEY

- SIZEWELL C AND ASSOCIATED DEVELOPMENT SITE BOUNDARIES
- DEMARCATION LINE
- ZONE OF PHYSICAL CHANGE (2KM BUFFER AROUND MAIN DEVELOPMENT SITE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

- SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

- DOG RESTRICTIONS ON BEACH
- ACCESS SITE LOCATIONS AT EUROPEAN SITES

S. ALDRINGHAM WALKS T. THORPENESS (VILLAGE CAR PARK) U. LAY-BY NORTH OF ALDEBURGH V. ALDEBURGH (CAR PARK TO NORTH OF VILLAGE) X. NORTH WARREN Y. SAILORS PATH

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

- RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)
- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)
- FOOTPATH
- BRIDLEWAY
- BYWAY
- RESTRICTED BYWAY
- PERMISSIVE PATHS IN EDF ENERGY ESTATE (ADAS)
- SUSTRANS REGIONAL CYCLE ROUTE (RCR) (41/42)
- SUFFOLK COASTAL CYCLE ROUTE
- REGISTERED COMMON LAND
- OPEN ACCESS LAND

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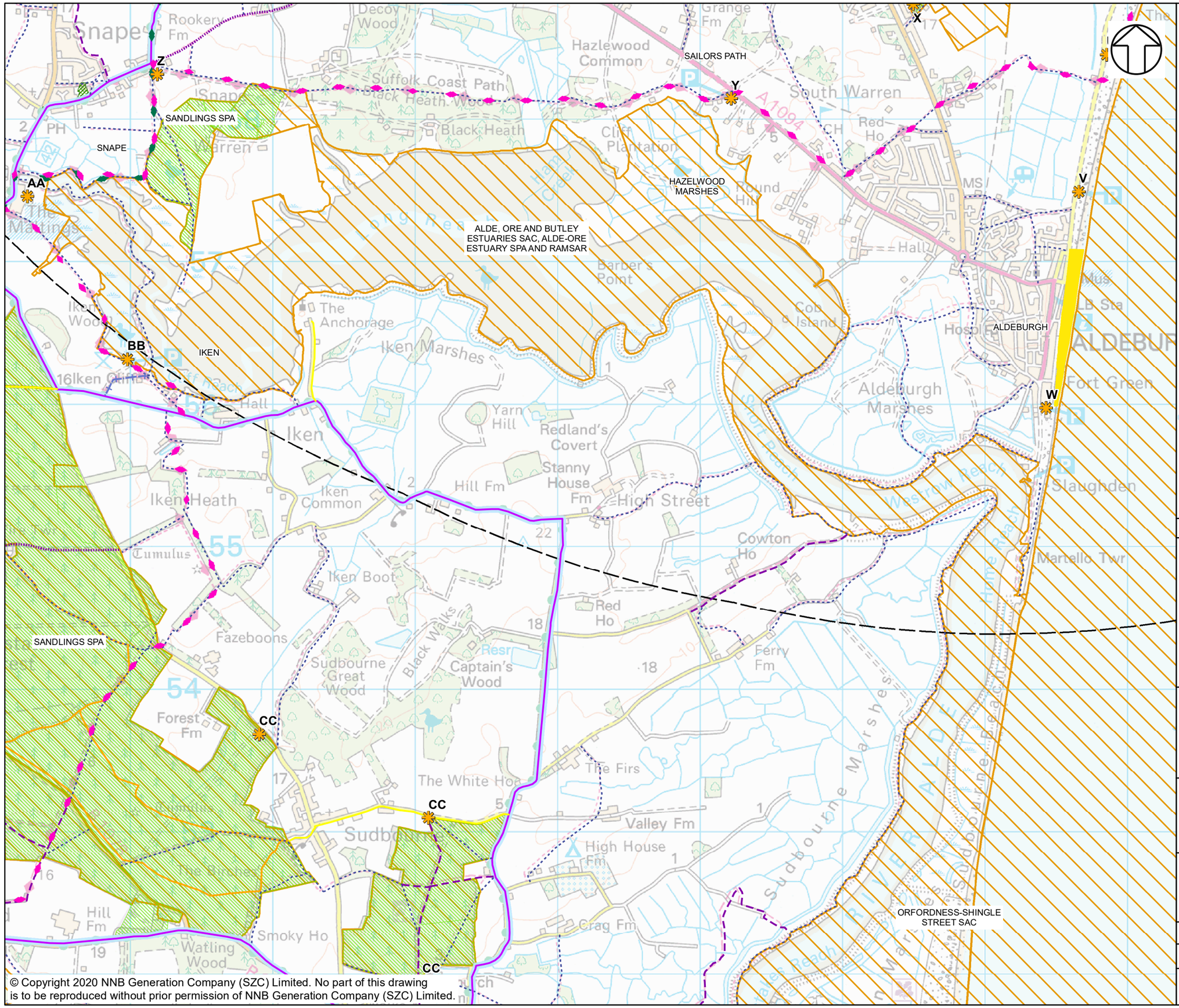
DOCUMENT:
SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

DRAWING TITLE:
EUROPEAN PROTECTED SITES
ALDRINGHAM WALKS
ACCESS

DRAWING NO:
FIGURE 006

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM



NOTES

DOG RESTRICTION AREAS DIGITISED BY LDA DESIGN FROM EAST SUFFOLK COUNCIL MAPS AVAILABLE ONLINE, APRIL 2019

KEY

- DISPLACEMENT ZONE (8KM BUFFER AROUND MAIN DEVELOPMENT SITE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

- SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

- DOG RESTRICTIONS ON BEACH
- ACCESS SITE LOCATIONS AT EUROPEAN SITES

U. LAY-BY NORTH OF ALDEBURGH V. ALDEBURGH (CAR PARK TO NORTH OF VILLAGE) W. ALDEBURGH (CAR PARK TO SOUTH OF VILLAGE) X. NORTH WARREN Y. SAILORS PATH Z. SNAPE WARREN AA. SNAPE MALTINGS BB. IKEN PICNIC SITE CC. TUNSTALL FOREST

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

- RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)
- RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)
- FOOTPATH
- BRIDLEWAY
- BYWAY
- RESTRICTED BYWAY
- SUSTRANS REGIONAL CYCLE ROUTE (RCR) (41/42)
- SUFFOLK COASTAL CYCLE ROUTE
- ALTERNATIVE CYCLE ROUTES/SHORT CUTS/DETOURS ON ROAD
- OFF ROAD CYCLE ROUTES
- REGISTERED COMMON LAND
- OPEN ACCESS LAND

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SIZEWELL C
SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

DRAWING TITLE:
EUROPEAN PROTECTED SITES
ALDE - ORE ESTUARY
ACCESS

DRAWING NO:
FIGURE 007

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR

0 0.2 0.4 0.6 0.8 1 KM

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SANDLINGS SPA
CC
CC
ORFORD
EE
FF
FF
DD
DD
BUTLEY
ALDE, ORE AND BUTLEY ESTUARIES SAC, ALDE-ORE ESTUARY SPA AND RAMSAR
ORFORDNESS
ORFORDNESS-SHINGLE STREET SAC

NOTES

DOG RESTRICTION AREAS DIGITISED BY LDA DESIGN FROM EAST SUFFOLK COUNCIL MAPS AVAILABLE ONLINE, APRIL 2019

KEY

BUFFER ZONE (STUDY AREA) (8KM BUFFER AROUND SETTLEMENTS IN DISPLACEMENT ZONE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

ACCESS SITE LOCATIONS AT EUROPEAN SITES

CC. TUNSTALL FOREST DD. BUTLEY
EE. ORFORD FF. RENDLESHAM FOREST

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)

FOOTPATH

BRIDLEWAY

RESTRICTED BYWAY

SUSTRANS REGIONAL CYCLE ROUTE (RCR) (41)

SUFFOLK COASTAL CYCLE ROUTE

ALTERNATIVE CYCLE ROUTES/SHORT CUTS/DETOURS ON ROAD

OFF ROAD CYCLE ROUTES

REGISTERED COMMON LAND

OPEN ACCESS LAND

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APPENDIX E
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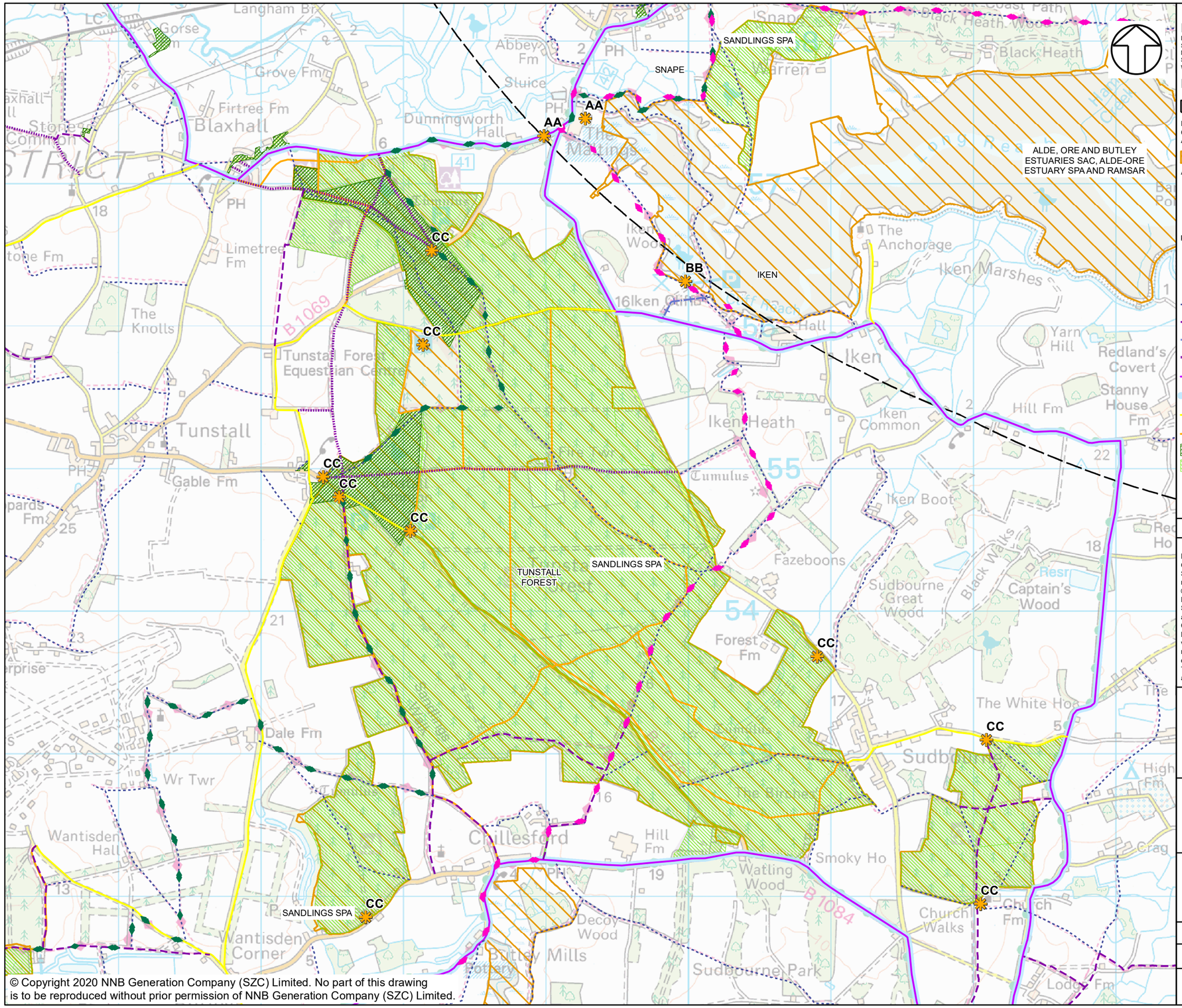
DRAWING TITLE:
EUROPEAN PROTECTED SITES
ALDE-ORE AND BUTLEY ESTUARIES
ACCESS

DRAWING NO:
FIGURE 008

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM

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KEY

DISPLACEMENT ZONE (8KM BUFFER AROUND MAIN DEVELOPMENT SITE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

ACCESS SITE LOCATIONS AT EUROPEAN SITES

AA. SNAPE MALTINGS BB. IKEN PICNIC SITE
CC. TUNSTALL FOREST

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)

RECREATIONAL ROUTE: SUFFOLK COAST PATH (LONG DISTANCE WALKING ROUTE)

FOOTPATH

BRIDLEWAY

BYWAY

RESTRICTED BYWAY

SUSTRANS REGIONAL CYCLE ROUTE (RCR) (41/42)

SUFFOLK COASTAL CYCLE ROUTE

ALTERNATIVE CYCLE ROUTES/SHORT CUTS/DETOURS ON ROAD

OFF ROAD CYCLE ROUTES

REGISTERED COMMON LAND

OPEN ACCESS LAND

NOT PROTECTIVELY MARKED

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DOCUMENT:
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SHADOW HRA REPORT
APPENDIX E
RECREATIONAL EVIDENCE

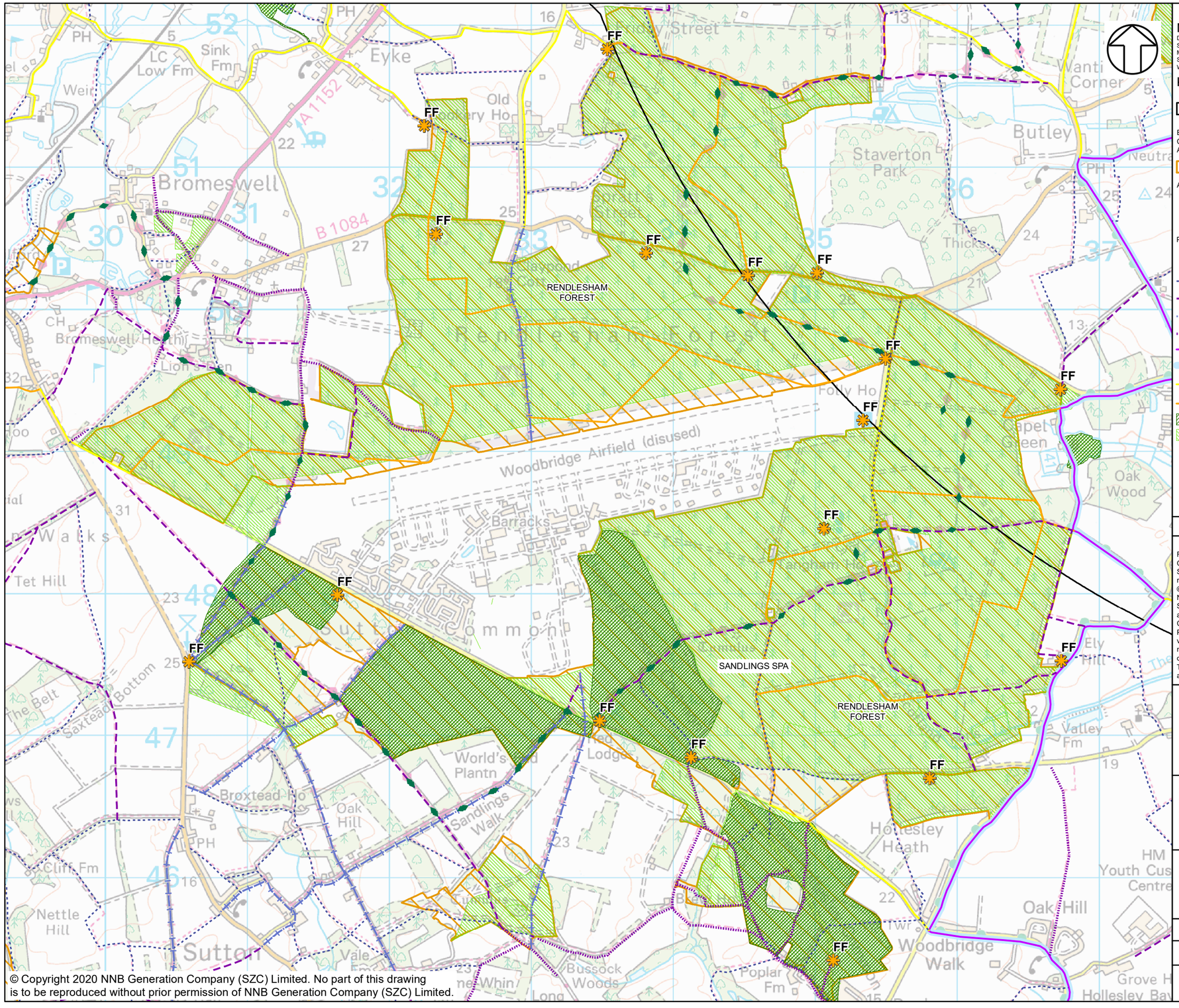
DRAWING TITLE:
EUROPEAN PROTECTED SITES
TUNSTALL FOREST
ACCESS

DRAWING NO:
FIGURE 009

DATE: JAN 2020
DRAWN: V.W.
SCALE : 1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM

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KEY

BUFFER ZONE (STUDY AREA) (8KM BUFFER AROUND SETTLEMENTS IN DISPLACEMENT ZONE)

EUROPEAN PROTECTED SITES (FOR SPECIAL AREAS OF CONSERVATION AND RAMSAR SITES SEE FIGURES 001 AND 002)

SPECIAL PROTECTION AREA (SPA)

ADDITIONAL FEATURES

ACCESS SITE LOCATIONS AT EUROPEAN SITES

FF. RENDLESHAM FOREST

PUBLIC RIGHTS OF WAY AND PUBLIC ACCESS

RECREATIONAL ROUTE: SANDLINGS WALK (LONG DISTANCE WALKING ROUTE)

FOOTPATH

BRIDLEWAY

BYWAY

RESTRICTED BYWAY

SUSTRANS REGIONAL CYCLE ROUTE (RCR) (41)

SUFFOLK COASTAL CYCLE ROUTE

ALTERNATIVE CYCLE ROUTES/SHORT CUTS/DETOURS ON ROAD

OFF ROAD CYCLE ROUTES

REGISTERED COMMON LAND

OPEN ACCESS LAND

NOT PROTECTIVELY MARKED

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DRAWING TITLE:
EUROPEAN PROTECTED SITES
RENDLESHAM FOREST
ACCESS

DRAWING NO:
FIGURE 010

DATE:	DRAWN:	SCALE :
JAN 2020	V.W.	1:25,000 @A3

SCALE BAR
0 0.2 0.4 0.6 0.8 1 KM

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