

East Anglia THREE
Offshore Windfarm

East Anglia THREE

Integrity Matrices

Document Reference – Deadline 5/ Second
Written Questions/ Revised Integrity Matrices/
HRA14

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1 Introduction

1. This document provides updated integrity matrices (Document 5.4(5) [APP-106] Information for the Habitats Regulations Assessment Appendix 5: Integrity Matrices) as requested by the Examining Authority in the second written questions (HRA 14).
2. The following European Sites and features are presented in this document:
 - a. Alde-Ore Estuary SPA
 - b. Alde-Ore Estuary Ramsar
 - c. Deben Estuary SPA
 - d. Deben Estuary Ramsar
 - e. Flamborough Head and Bempton Cliffs SPA
 - f. Outer Thames Estuary SPA
3. A summary of the evidence presented in the determination of the risk of AEOI (Adverse Effects on Integrity) on their qualifying features is detailed within the footnotes to the integrity matrices below.
 - Y – AEOI cannot be excluded
 - N - AEOI can be excluded
 - C = construction
 - O = operation
 - D = decommissioning
4. Where effects are not applicable to a particular feature they have been shaded out.

Name of European Site: Alde-Ore Estuary SPA									
Distance to East Anglia THREE Site 109km									
Site Features	Adverse Effect on Integrity due to proposed East Anglia THREE project								
	Collision mortality (in-combination)			Displacement/Disturbance			Barrier Effect		
	C	O	D	C	O	D	C	O	D
Breeding lesser black-backed gulls		N (a)							
<p>a) Band model predictions of collision mortality suggest 0.6 collisions per year at the East Anglia THREE wind farm by adult lesser black-backed gulls from the Alde-Ore population (Information for the HRA, Section 3.4.4.1). This represents an increase of less than 0.1% on natural mortality which is below detection limits so is considered negligible. There will be no adverse effect on the integrity of the Alde-Ore Estuary SPA as a result of lesser black-backed gull collisions at the proposed East Anglia THREE project alone. In-combination assessment suggests mortality of 58 birds attributable to the Alde-Ore SPA population of lesser black-backed gulls compared with estimated natural mortality of about 940 birds per year (Information for the HRA, Section 3.4.4.2). Thus, the additional in-combination mortality would increase mortality rate from 14.10% to 14.97%. Comments made by the Secretary of State in relation to the East Anglia ONE assessment are relevant here. Despite the much lower avoidance rate applied at the time of that assessment (98%) and therefore the much larger numbers estimated to be killed by collision, it was concluded by the Secretary of State in relation to East Anglia ONE (DECC 2014), that the mortality from offshore wind farms is insignificant compared to other factors affecting the population of the lesser black-backed gull, and with planned improvements to the SPA, immigration from other colonies is likely, and would boost numbers, should favourable breeding conditions be created. Since mortality at the proposed East Anglia THREE project is estimated to be only slightly greater than 1 individual, even if it is concluded that there will be an adverse effect on the integrity of the SPA due to in-combination collision mortality it is clear that the proposed East Anglia THREE project will not be contributing significantly to this.</p>									

Name of European Site: Alde-Ore Estuary Ramsar									
Distance to East Anglia THREE Site 109km									
Site Features	Adverse Effect on Integrity due to proposed East Anglia THREE project								
	Collision mortality (in-combination)			Displacement/Disturbance			Barrier Effect		
	C	O	D	C	O	D	C	O	D
Breeding lesser black-backed gulls		N (a)							
<p>a) Band model predictions of collision mortality suggest 0.6 collisions per year at the East Anglia THREE wind farm by adult lesser black-backed gulls from the Alde-Ore population (Information for the HRA, Section 3.4.4.1). This represents an increase of less than 0.1% on natural mortality which is below detection limits so is considered negligible. There will be no adverse effect on the integrity of the Alde-Ore Estuary Ramsar as a result of lesser black-backed gull collisions at the proposed East Anglia THREE project alone. In-combination assessment suggests mortality of 58 birds attributable to the Alde-Ore Ramsar population of lesser black-backed gulls compared with estimated natural mortality of about 940 birds per year (Information for the HRA, Section 3.4.4.2). Thus, the additional in-combination mortality would increase mortality rate from 14.10% to 14.97%. Comments made by the Secretary of State in relation to the East Anglia ONE assessment are relevant here. Despite the much lower avoidance rate applied at the time of that assessment (98%) and therefore the much larger numbers estimated to be killed by collision, it was concluded by the Secretary of State in relation to East Anglia ONE (DECC 2014), that the mortality from offshore wind farms is insignificant compared to other factors affecting the population of the lesser black-backed gull, and with planned improvements to the Ramsar, immigration from other colonies is likely, and would boost numbers, should favourable breeding conditions be created. Since mortality at the proposed East Anglia THREE project is estimated to be only slightly greater than 1 individual, even if it is concluded that there will be an adverse effect on the integrity of the Ramsar due to in-combination collision mortality it is clear that the proposed East Anglia THREE project will not be contributing significantly to this.</p>									

Name of European Site: Deben Estuary SPA									
Distance to East Anglia THREE Site 124km (a)									
Site Features	Adverse Effect on Integrity due to proposed East Anglia THREE project								
	Collision mortality			Displacement/Disturbance			Barrier Effect		
	C	O	D	C	O	D	C	O	D
Nonbreeding dark-bellied brent goose				N (a)					
a) With the proposed mitigation measures in place and managed levels of disturbance during construction works, it can be expected that brent goose numbers will continue to remain at a similar level, subject to natural change.									

Name of European Site: Deben Estuary Ramsar									
Distance to East Anglia THREE Site 124km (a)									
Site Features	Adverse Effect on Integrity due to proposed East Anglia THREE project								
	Collision mortality			Displacement/Disturbance			Barrier Effect		
	C	O	D	C	O	D	C	O	D
Nonbreeding dark-bellied brent goose				N (a)					
a) With the proposed mitigation measures in place and managed levels of disturbance during construction works, it can be expected that brent goose numbers will continue to remain at a similar level, subject to natural change.									

Name of European Site: Flamborough Head and Bempton Cliffs SPA									
Distance to East Anglia THREE Site 257km									
Site Features	Adverse Effect on Integrity due to proposed East Anglia THREE project								
	Collision mortality (in-combination)			Displacement/Disturbance			Barrier Effect		
	C	O	D	C	O	D	C	O	D
Breeding kittiwake		N (a)							
<p>a) Collision mortality of kittiwakes at East Anglia THREE site (based on Band Option 1 and an avoidance rate of 0.989) was estimated at 49 birds in spring, 8 in summer and 90 in autumn, giving an annual total of 147 birds. Based on a precautionary assessment, numbers apportioned to the Flamborough Head and Bempton Cliffs SPA population were 1.34 during the migration-free breeding season (May-Jul), 4.86 in autumn migration (Aug-Dec), and 3.53 in spring migration (Jan-Apr; Information for the HRA section 3.6.4.1). These 9.73 birds from a population of 141,000 represent a negligible addition to natural mortality. Kittiwake collision mortality due to East Anglia THREE alone will have no adverse effect on the integrity of this SPA. The In-combination assessment suggests a collision mortality of 328 birds from Flamborough Head and Bempton Cliffs SPA population per year of all age classes with 174 of these being adults (Information for the HRA - Erratum). This is well below the PBR threshold of 512 set by Natural England for this population with a precautionary recovery factor (f) of 0.1. It is, therefore, reasonable to assess that there will be no adverse effect on the integrity of Flamborough Head and Bempton Cliffs SPA as a result of kittiwake collisions at the proposed East Anglia THREE project in-combination with other projects, and this view is further supported by PVA modelling.</p>									

Name of European Site: Outer Thames Estuary SPA									
Distance to East Anglia THREE Site 123km (a)									
Site Features	Adverse Effect on Integrity due to proposed East Anglia THREE project								
	Collision mortality			Displacement/Disturbance			Barrier Effect		
	C	O	D	C	O	D	C	O	D
Nonbreeding red-throated divers				N (a)					
a) Cable laying operations during construction will disturb birds from the immediate vicinity of cable-laying vessels. Assessment indicates that between 18.6 and 22.8 divers would be displaced at any one time during cable laying. This would lead to a 0.6% increase in diver density in other parts of the SPA (Information for the HRA, section 3.4.4). A worst case scenario assuming 10% of displaced birds die would add 0.1 to 0.2% to the natural mortality during two years. This is too small to be detectable and is therefore considered not to be significant. It is therefore, reasonable to assess that there will be no adverse effect on the integrity of Outer Thames Estuary SPA.									

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