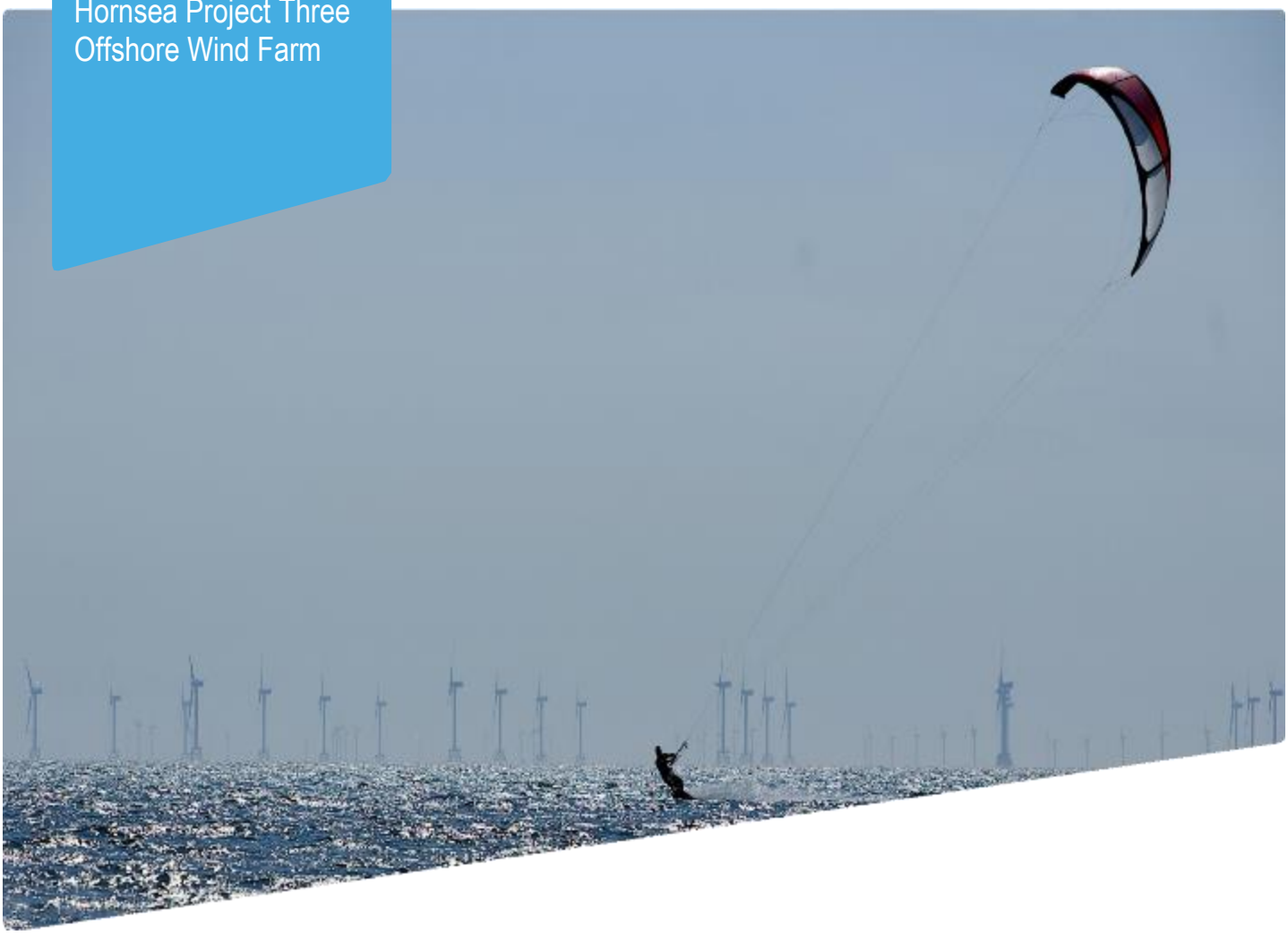
Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three

Offshore Wind Farm

Appendix 16 to Deadline 9 submission - Applicant's position in relation to displacement impacts

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Hornsea 3
Offshore Wind Farm

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2019.

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1. Introduction

1.1 As part of the Hornsea Three application, the Applicant conducted project alone and cumulative/in-combination assessments in relation to displacement impacts on fulmar, gannet, guillemot, razorbill and puffin on EIA and RIAA scales. Following a request from the Examining Authority the potential implications for the conclusions of these cumulative and in-combination assessments were considered in relation to the inclusion of three additional projects (Norfolk Vanguard, Thanet Extension and Moray West) that had, subsequent to the submission of the Hornsea Three application, also submitted planning applications (REP1-005). The Applicant has also produced additional PVA outputs following consultation with Natural England (REP4-092). Through consultation with the RSPB the Applicant has also provided clarification in relation to the impact on immature auks (REP5-014).

1.2 This report therefore summarises the conclusions of the assessments conducted for fulmar, gannet, guillemot, razorbill and puffin in relation to displacement impacts taking into account all relevant information submitted throughout the examination.

2. Background

2.1 As part of the examination the Applicant has submitted various analyses and information that help to clarify aspects of the assessments produced as part of the Applicant's application. These include:

- REP1-141 – Baseline Characterisation Sensitivity Testing;
- REP1-135 and REP4-092 – Population Viability Analysis;
- REP1-005 – Revision of cumulative and in-combination impacts to include additional projects;
- REP4-049 – Summary of positions including in relation to displacement impacts; and
- REP5-014 – Apportioning immature auks to colonies.

2.2 To aid the Examining Authority and other parties a full summary of the Applicant's position in relation to displacement impacts is presented in this report. Note that the Applicant's position in relation to collision risk modelling is provided in REP6-042 and REP7-031.

2.3 The Applicant has consistently maintained throughout the application and examination that there would no adverse effects arising from impacts associated with Hornsea Three for the project alone or in-combination with other plans and projects (REP6-010) and that remains the position.

2.4 As part of their Deadline 1 submission (REP4-049) Natural England raised issues relevant to displacement analysis. The Applicant does not accept the issues raised or approach advocated by Natural England and maintains its position as confirmed in this document. However, as set out in Table 2.1 below, the documents identified above provide the necessary information to address these issues and allow the use of Natural England's worst case assumptions, and additionally for consideration of apportioning of immature birds using an approach identified through consultation with the RSPB, in the event the Examining Authority or the Secretary of State is not minded to accept the evidence presented by the Applicant.

Table 2.1: Issues raised by Natural England in relation to displacement analysis and the approach taken by the Applicant to address each issue

Issue raised by Natural England	Approach to addressing issue
Baseline data	The Applicant presented an approach to the hierarchical data selection that was assumed to be Natural England's position based on discussions held as part of Expert Working Group meetings (REP1-141). REP1-141 also presents further information in support of the meta-analysis approach and the position of the Applicant. REP4-049 provides a summary of the assumed position of Natural England as interpreted by the Applicant during the examination.
Seasonal definitions	REP4-049 presents displacement analysis incorporating Natural England's advocated seasonal definitions.
Apportioning	REP4-049 presents displacement analysis incorporating a range of apportioning rates as advocated by Natural England. REP5-014 presents an apportioning approach for immature auks as developed through consultation with the RSPB.
Combination of seasonal impacts	The Applicant has presented information that would enable other parties to calculate annual impacts if required. The Applicant has also incorporated this approach in this report noting the caveats associated with annual impacts.
Lack of confidence intervals	The Applicant's approach to displacement analysis follows SNCB guidance (JNCC *et al.,* 2017). The use of confidence intervals in the way suggested by Natural England is not in accordance with this guidance. JNCC *et al.* (2017) states that the use of seasonal mean-peak populations (as used by the Applicant) allows for year-to-year variation in the timing and magnitude of peak abundance to be taken into account
Mortality and displacement rates	The Applicant has presented a range of displacement and mortality rates throughout all analyses to allow other parties to use their preferred rates. The Applicant's assessments use displacement and mortality rates identified through literature review, an approach encouraged by JNCC *et al.* (2017).
Inclusion of immature impacts	The Applicant considered immature impacts qualitatively in APP-051 and APP-065 with quantitatively consideration provided in REP5-014 following the development of an appropriate approach through consultation with the RSPB.
Cumulative and in-combination assessments	Negligible impacts have been identified for a number of species and therefore any contribution of Hornsea Three is considered by the Applicant to be immaterial. The impact from other projects cumulatively or in-combination would not alter this conclusion. The Applicant has included data for all projects where information is in the public domain. Any contribution of Hornsea Three is considered by the Applicant to be immaterial in any case.
Combining effects	The Applicant has presented information that would allow other parties to conduct this analysis if deemed necessary.

3. Methodology

3.1 The methodology applied by the Applicant in relation to displacement follows SNCB guidance (JNCC *et al.*, 2017). The Applicant has used seasonal mean-peaks to estimate the likely displacement mortality and presented displacement analyses using the displacement matrix approach across a range of displacement and mortality rates. As encouraged in JNCC *et al.* (2017) the Applicant has sought to identify the likely magnitude of impact by reviewing relevant literature sources to identify more precise displacement and mortality rates or where evidence in relation to these rates is variable a range of displacement and/or mortality rates.

3.2 The approach to displacement analysis presented in the Hornsea Three application (APP-108) has not changed during the examination phase.

3.3 In the following sections the Applicant has provided displacement impacts on seasonal and annual bases. The use of an annual impact however, is considered by the Applicant to potentially over-estimate any potential impact as it is possible that the impact may incorporate an element of double counting due to birds being present in the same area in different seasons. In addition, the summing of these impacts is arbitrary and can be influenced by the number of seasons defined. An annual impact is therefore presented here solely to aid other parties who may wish to utilise an annual impact.

4. Results

Project alone

4.1 The Applicant's position in relation to displacement mortality is presented in REP4-049 and has not changed since the Hornsea Three application (APP-051 and APP-065). Displacement mortality for species on an EIA basis is summarised in Table 4.1 with these impacts incorporating all age classes. Displacement mortality for species on an RIAA basis is summarised in Table 4.2. Table 4.2 presents impacts on both breeding adult and immature age classes for guillemot, razorbill and puffin with impacts on immature birds presented in brackets.

Table 4.1: Seasonal and annual displacement impacts for species considered at an EIA scale

Species	Seasonal displacement mortality				Annual mortality	% increase in baseline mortality
	Breeding	Post-breeding	Non-breeding	Pre-breeding		
Fulmar	3-9	1-3	0-1	1-2	5-14	0.01-0.02
Gannet	8-19	3-7	N/A	1-3	12-28	0.03-0.08
Guillemot	134-669	N/A	89	N/A	223-758	0.19-0.65
Razorbill	5-25	16	15	10	46-80	0.07-0.13
Puffin	3-13	N/A	1	N/A	3-13	0.01-0.06

Table 4.2: Seasonal and annual displacement impacts for features and associated SPAs considered at an RIAA scale

SPA	Species	Seasonal displacement mortality for breeding adult birds (immature auk mortality)				Annual mortality	Designated SPA population (individuals)	% increase in baseline mortality for breeding adult birds[1]
		Breeding	Post-breeding	Non-breeding	Pre-breeding			
Flamborough and Filey Coast	Fulmar	1-2	0	0	0	1-2	2,894	0.33-0.99
	Gannet	3-8	0	N/A	0	3-8	16,938	0.25-0.59
	Guillemot	0 (85-425)	N/A	4 (3)	N/A	4 (88-428)	83,214	0.14-0.39
	Razorbill	0 (4-21)	1 (0)	0 (0)	0 (0)	1 (5-21)	21,140	0.06
	Puffin	0 (0-1)	N/A	0 (0)	N/A	0 (0-1)	1,960	<0.01
Coquet Island	Fulmar	0	0	0	0	0	125	-
Farne Islands	Fulmar	0	0	0	0	0	542	-
Forth Islands	Fulmar	0-1	0	0	0	0-1	1,596	0.97

[1] The percentage increase in the baseline mortality for immature birds is provided in the species-specific sections below

Fulmar

EIA scale

Project alone

4.2 Displacement analysis for fulmar predicts a total annual impact of 5-14 birds/annum if seasonal impacts are totalled noting that this total potentially contains an element of double counting (Table 4.1). This impact represents 0.01-0.02% of the largest BDMPS population for fulmar (957,502 birds in the post- and pre-breeding season (Furness, 2015)).

4.3 In APP-065, the sensitivity of fulmar was considered to be medium and the impact magnitude was deemed to be negligible - low. The effect will, therefore, be of negligible – minor adverse significance, which is not significant in EIA terms.

Cumulative

4.4 While fulmar is considered prone to displacement from operational wind farm areas, albeit assigned a low vulnerability by Wade *et al.* (2016), the consequences of displacement on fulmar are considered to be trivial. Fulmar has vast foraging areas in all seasons and particularly high degrees of habitat flexibility (Wade *et al*., 2016). Further to this, it is not considered that the impact predicted (5-14 birds/annum) for fulmar at Hornsea Three would materially contribute to the current level of cumulative mortality predicted for this species.

RIAA scale

Project alone

4.5 For FFC SPA, displacement analysis and apportioning based on the proportional contribution of the FFC SPA population to the total breeding population that may interact with Hornsea Three based on the foraging range of the species (Thaxter *et al.,* 2012) predicts a total annual impact of 1-2 birds (Table 4.2). This level of mortality represents a 0.33-0.90% increase in the baseline mortality of the FFC SPA population of fulmar.

4.6 Displacement analysis and apportioning predicts mortality of less than one bird at both Coquet Island SPA and the Farne Island SPA. For the Forth Islands SPA mortality of up to one bird is predicted (Table 4.2).

4.7 APP-051 concluded that due to the low proportion of the SPA populations affected by displacement (representing a very small increase in background mortality) that there would be no adverse effect on the integrity of the fulmar populations of these SPAs.

In-combination

4.8 Due to the negligible level of impact predicted for all four SPAs considered for fulmar it was considered unlikely that the predicted impacts would materially alter the current in-combination displacement impact for fulmar at these SPAs. On this basis, there is no indication that, at the level of mortality predicted to arise from Hornsea Three, this will result in an adverse effect on the site integrity of all SPAs considered alone or in-combination with other plans and projects.

Gannet

EIA scale

Project alone

4.9 Displacement analysis for gannet predicts a total annual impact of 12-28 birds/annum if seasonal impacts are totalled noting that this total potentially contains an element of double counting (Table 4.1). This impact represents 0.03-0.08% of the largest BDMPS population for gannet (456,298 birds in the post-breeding season (Furness, 2015)).

4.10 In APP-065, the sensitivity of gannet was considered to be medium and the impact magnitude was deemed to be negligible. The effect will, therefore, be of negligible or minor adverse significance, which is not significant in EIA terms.

Cumulative

4.11 While gannet is considered prone to displacement from operational wind farm areas, the consequences of displacement on gannet are considered to be trivial. Gannet has vast foraging areas in all seasons and particularly high degrees of habitat flexibility (Wade *et al*., 2016). On this basis, no quantitative cumulative displacement assessment for gannet was conducted in APP-065.

RIAA scale

Project alone

4.12 For FFC SPA, displacement analysis and apportioning based on age class data and published literature predicts a total annual impact of 3-8 birds (Table 4.2). This level of mortality represents a 0.25-0.58% increase in the baseline mortality of the FFC SPA population of gannet.

4.13 APP-051 concluded that, due to the low proportion of the SPA population affected by displacement (with no SPA birds affected in the pre- and post-breeding seasons), the small increase in background mortality and the extensive foraging range of gannet, there would be no adverse effect on the integrity of the gannet population of the FFC SPA.

In-combination

4.14 Due to the negligible level of impact predicted for gannet at FFC SPA it was considered unlikely that the predicted impacts would materially alter the current in-combination displacement impact for gannet at FFC SPA. On this basis, there is no indication that, at the level of mortality predicted to arise from Hornsea Three, this will result in an adverse effect on the site integrity of FFC SPA considered alone or in-combination with other plans and projects.

Guillemot

EIA scale

Project alone

4.15 Displacement analysis for guillemot predicts a total annual impact of 223-758 birds/annum if seasonal impacts are totalled noting that this total potentially contains an element of double counting (Table 4.1). This impact represents 0.19-0.65% of the largest BDMPS population for guillemot (19,160 birds in the post- and pre-breeding season (Furness, 2015)).

4.16 In APP-065, the sensitivity of guillemot was considered to be medium and the impact magnitude was deemed to be low. The effect will, therefore, at most be of minor adverse significance, which is not significant in EIA terms.

Cumulative

4.17 A cumulative breeding season impact of 7,102-7,637 birds was predicted when including impacts from Tier 1 and 2 projects (APP-065) and Norfolk Vanguard, Thanet Extension and Moray West (REP1-005) with a non-breeding season impact of 481 birds. This provides a total annual impact of 7,583-8,118 birds noting that it is highly likely that this includes an element of double counting due to the large number of projects, some of which are close together, across which these impacts will occur. The total annual impact represents a 7.7-8.2% increase in the baseline mortality of the largest BDMPS population for guillemot (1,617,306 individuals; Furness, 2015). APP-065 considered the cumulative impact to be of moderate adverse significance. In REP1-005, the increase in cumulative displacement mortality as a result of the inclusion of Norfolk Vanguard, Thanet Extension and Moray West was not considered to alter the conclusions reached in APP-065, which remain moderate adverse significance.

4.18 As part of their conclusions for the Hornsea Project Two offshore wind farm Natural England were able to conclude no significant effects using displacement mortality values for guillemot larger than that predicted here (Natural England, 2015; Appendix 24 to the Applicant's submission for Deadline 9).

RIAA scale

Project alone

4.19 It is not predicted that Hornsea Three will cause any impact on breeding adult birds from the FFC SPA during the breeding season due to a lack of connectivity between the colony and the wind farm during this season, although immature birds could be affected (see below). In non-breeding seasons, the impact from Hornsea Three was predicted to be four breeding adult birds and three immature birds (Table 4.2). The level of mortality predicted for breeding adult birds represents a 0.08% increase in the baseline mortality of the FFC SPA population of guillemot.

4.20 Both Natural England and the RSPB identified the potential for impacts on immature auks (see REP1-211 and RR-113). As part of APP-051 the Applicant considered potential impacts on immature birds at FFC SPA in all seasons in addition, to the impact on breeding adult birds, all of which will occur outside of the breeding season. The Applicant assessed potential impacts on immature birds associated with FFC SPA qualitatively due to the difficulties in defining immature populations and the proportion of any population that may be associated with FFC SPA. Due to the negligible impact on breeding adults birds from FFC SPA and the negligible impact on immature birds and large populations from which immature birds may derive, APP-051 concluded that the predicted impacts would not result in an adverse effect on the integrity of FFC SPA.

4.21 Through consultation with the RSPB during the examination, an approach to immature apportioning was identified that would allow for a quantitative appraisal of the potential risk of displacement to immature auks associated with FFC SPA and this is presented in REP5-014.

4.22 REP5-014 estimated that the impact on immature birds associated with FFC SPA would be 85-425 birds in the breeding season and three birds in the non-breeding season. This compares to a baseline mortality amongst all immature bird age classes associated with FFC SPA of approximately 15,500 birds. This assumes that the number of immatures is directly linked to the breeding adult population at FFC SPA and has been calculated using the stable age structure used for PVA modelling. The predicted immature impact at Hornsea Three would therefore represent a 0.57-2.76% or 0.43-2.11% increase in baseline mortality of the immature population associated with FFC SPA depending on the demographic parameters used.

4.23 Increases in baseline mortality should be considered against the baseline mortality rates already operating on relevant age classes for context. Baseline mortality rates for immature age classes are higher than those for adult birds ranging from 44% for first year birds to 8.3% for third year birds. This compares to a survival rate of 6.2% for adult birds. Impacts on immature birds, when compared to those on adult birds, will have less of an impact on the overall FFC pSPA than impacts on adult birds due to differences in survival rates (fewer immature birds are expected to survive from one year to the next) and reductions in overall productivity of the population in a given year if breeding adult birds are lost.

4.24 The quantification of the potential impacts on immature birds and the updates to PVA modelling presented during the examination are not considered to alter the conclusions reached in APP-051 and therefore there is no indication of an adverse effect on the site integrity of FFC SPA.

In-combination

4.25 An in-combination breeding season impact of 118-590 breeding adult birds was predicted when including impacts from Tier 1 and 2 projects (APP-065) and Norfolk Vanguard, Thanet Extension and Moray West (REP1-005) with a non-breeding season impact of 21 breeding adult birds. This provides a total annual impact of 139-611 breeding adult birds noting that it is highly likely that this includes an element of double counting due to the large number of projects, some of which that are close together, across which these impacts will occur. The total impact represents a 2.7-12.0% increase in the baseline mortality of the FFC SPA population.

4.26 PVA modelling outputs produced for Deadline 4 (REP4-092) indicate that an annual in-combination impact of 139-611 breeding adult birds would translate to PVA outputs of 0.782-0.940 in relation to counterfactual of final population size and 0.993-0.998 in relation to counterfactual of population growth rate.

4.27 The PVA models produced for FFC SPA as part of the Hornsea Three assessments present outputs that look at the likely change in the number of breeding adult birds. The model does take into account mortality on immature age classes, these being calculated, within the model, based on the stable age structure of the population being modelled. It is not possible, using these models, to include mortality only for immature birds, or for that matter, any specific age class alone. Other ways have, therefore, been sought to explore the likely effect of immature mortality on the breeding population. The simplest of these is to treat immature birds as if they were adults and to input immature mortality into the PVA model as adult mortality.

4.28 The annual impact on immature birds at Hornsea Three was predicted to be 88-428 birds. This translates to an annual breeding adult impact of 126-613 birds if applying demographic rate set 1 as incorporated into PVA modelling or 97-469 birds if applying rate set 2. The assessment presented in APP-051 considered the potential population level implications if a breeding adult impact of 1,600 birds (translating to approximately 1,000-1,100 immature birds) was assumed. PVA metrics identified that even when using, what can be considered to be a considerable over-estimate based on the approach conducted in REP5-014, both for breeding adult birds and immature birds, there would be no adverse effect on the population of guillemot at FFC SPA (see paragraphs 7.7.2.42 to 7.7.2.58 of APP-051).

4.29 The immature apportioning and PVA modelling conducted during the examination do not provide evidence that the assumed impact magnitude assumed in APP-051 would be exceeded and therefore the conclusions presented in APP-051 are considered to be unchanged. There is therefore considered to be no indication of an adverse effect on the site integrity of FFC SPA as a result of displacement impacts on guillemot from either the project alone or in-combination with other plans or projects.

Razorbill

EIA scale

Project alone

4.30 Displacement analysis for razorbill predicts a total annual impact of 46-80 birds/annum if seasonal impacts are totalled noting that this total potentially contains an element of double counting (Table 4.1). This impact represents 0.07-0.13% of the largest BDMPS population for razorbill (591,874 birds in the post- and pre-breeding season (Furness, 2015)).

4.31 In APP-065, the sensitivity of razorbill was considered to be medium and the impact magnitude was deemed to be negligible - low. The effect will, therefore, be of negligible or minor adverse significance, which is not significant in EIA terms.

Cumulative

4.32 A cumulative breeding season impact of 924-944 birds was predicted when including impacts from Tier 1 and 2 projects (APP-065) and Norfolk Vanguard, Thanet Extension and Moray West (REP1-005) with post-breeding, non-breeding and pre-breeding season impacts of 267, 75 and 221 birds in each season respectively. This provides a total annual impact of 1,486-1,506 birds noting that it is highly likely that this includes an element of double counting due to the large number of projects, some of which that are close together, across which these impacts will occur. The total annual impact represents a 2.39-2.42% increase in the baseline mortality of the largest BDMPS population for razorbill (591,874 individuals; Furness, 2015). REP1-005 considered the impact of cumulative displacement mortality, including that potentially arising from Norfolk Vanguard, Thanet Extension and Moray West, and concluded that the impact would be the same as that reached in APP-065 (minor adverse significance).

4.33 As part of their conclusions for the Hornsea Project Two offshore wind farm, Natural England concluded that an impact of this magnitude on razorbill was not significant (Natural England, 2015; Appendix 24 to Deadline 9).

RIAA scale

Project alone

4.34 It is not predicted that Hornsea Three will cause any impact on breeding adult birds from the FFC SPA during the breeding season due to a lack of connectivity between the colony and the wind farm during this season although immature birds could be affected (see below). In non-breeding seasons, the impact from Hornsea Three was predicted to be one breeding adult and one immature bird (Table 4.2).

4.35 Both Natural England and the RSPB identified the potential for impacts on immature auks (see REP1-211 and RR-113). As part of APP-051 the Applicant considered potential impacts on immature birds at FFC SPA in all seasons in addition, to the impact on breeding adult birds, all of which will occur outside of the breeding season. The Applicant assessed potential impacts on immature birds associated with FFC SPA qualitatively due to the difficulties in defining immature populations and the proportion of any population that may be associated with FFC SPA. Due to the negligible impact predicted for both breeding adult birds and immatures across an annual cycle, APP-051 therefore concluded that this would not result in an adverse effect on the integrity of FFC SPA.

4.36 Through consultation with the RSPB during the examination, an approach to immature apportioning was identified that would allow for a quantitative appraisal of the potential risk of displacement to immature auks associated with FFC SPA and this is presented in REP5-014.

4.37 REP5-014 predicted an annual impact on immature birds of 5-21 birds (Table 4.2). This compares to a baseline mortality amongst all immature bird age classes associated with FFC SPA of approximately 15,600 birds. This assumes that the number of immatures is directly linked to the breeding adult population at FFC SPA and has been calculated using the stable age structure used for PVA modelling. The impact on immature birds (5-21 birds) therefore represents an increase in the baseline mortality of the immature population associated with FFC SPA of 0.19-0.81%.

4.38 The quantification of the potential impacts on immature birds during the examination is not considered to alter the conclusions reached in APP-051 and therefore there is no indication of an adverse effect on the site integrity of FFC SPA.

In-combination

4.39 APP-051 considered that Hornsea Three would not materially alter the current level of in-combination mortality for razorbill at FFC SPA. The work undertaken by the Applicant during the examination including in relation to baseline survey data and immature apportioning has not changed this conclusion.

4.40 There is therefore no indication of an adverse effect on the site integrity of FFC SPA as a result of displacement impacts on razorbill from either the project alone or in-combination with other plans or projects.

Puffin

EIA scale

Project alone

4.41 Displacement analysis for puffin predicts a total annual impact of 3-13 birds/annum if seasonal impacts are totalled noting that this total potentially contains an element of double counting (Table 4.1). This impact represents 0.01-0.06% of the largest BDMPS population for puffin (231,957 birds in the post- and pre-breeding season (Furness, 2015)).

4.42 In APP-065, the sensitivity of puffin was considered to be medium and the impact magnitude was deemed to be negligible - low. The effect will, therefore, be no greater than minor adverse significance, which is not significant in EIA terms.

Cumulative

4.43 A cumulative breeding season impact of 168-178 birds was predicted when including impacts from Tier 1 and 2 projects (APP-065) and Norfolk Vanguard, Thanet Extension and Moray West (REP1-005) with a non-breeding season impact of 68 birds. This provides a total annual impact of 236-246 birds noting that it is highly likely that this includes an element of double counting due to the large number of projects, some of which that are close together, across which these impacts will occur. The total annual impact represents a 1.08-1.12% increase in the baseline mortality of the largest BDMPS population for puffin (231,957 individuals; Furness, 2015). In REP1-005, the increase in cumulative displacement mortality as a result of the inclusion of Norfolk Vanguard, Thanet Extension and Moray West was not considered to alter the conclusions reached in APP-065. APP-065 considered the cumulative impact to be of minor adverse significance.

4.44 As part of their conclusions for the Hornsea Project Two offshore wind farm Natural England were able to conclude no significant effects using displacement mortality values for puffin larger than that predicted here (Natural England, 2015; Appendix 24 to Deadline 9).

RIAA scale

Project alone

4.45 It is not predicted that Hornsea Three will cause any impact on breeding adult birds from the FFC SPA during the breeding season due to a lack of connectivity between the colony and the wind farm during this season, although immature birds could be affected (see below). In the non-breeding season, the impact from Hornsea Three was predicted to be less than one breeding adult and less than one immature bird (Table 4.2).

4.46 Both Natural England and the RSPB identified the potential for impacts on immature auks (see REP1-211 and RR-113). As part of APP-051 the Applicant considered potential impacts on immature birds at FFC SPA in all seasons in addition, to the impact on breeding adult birds, all of which will occur outside of the breeding season. The Applicant assessed potential impacts on immature birds associated with FFC SPA qualitatively due to the difficulties in defining immature populations and the proportion of any population that may be associated with FFC SPA. Due to the negligible impact predicted for both breeding adult birds and immatures across an annual cycle, APP-051 therefore concluded that this would not result in an adverse effect on the integrity of FFC SPA.

4.47 Through consultation with the RSPB during the examination, an approach to immature apportioning was identified that would allow for a quantitative appraisal of the potential risk of displacement to immature auks associated with FFC SPA and this is presented in REP5-014. REP5-014 predicted an annual impact on immature birds of up to one bird (Table 4.2).

4.48 The quantification of the potential impacts on immature birds during the examination is not considered to alter the conclusions reached in APP-051 and therefore there is no indication of an adverse effect on the site integrity of FFC SPA.

In-combination

4.49 APP-051 considered that Hornsea Three would not materially alter the current level of in-combination mortality for puffin at FFC SPA. The work undertaken by the Applicant during the examination including in relation to baseline survey data and immature apportioning has not changed this conclusion.

4.50 There is therefore no indication of an adverse effect on the site integrity of FFC SPA as a result of displacement impacts on puffin from either the project alone or in-combination with other plans or projects.

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