Written Submission

for the

Royal Society for the Protection of Birds

ANNEX 1

Flamborough and Filey Coast SPA

19 November 2021

Planning Act 2008 (as amended)

In the matter of:

Application by Norfolk Vanguard Limited for an Order

Granting Development Consent for the Norfolk Vanguard Offshore Wind Farm

Response to October 2021 consultation on further information

Planning Inspectorate Ref: EN010079

Registration Identification Ref: 20012785

1 Introduction

Scope of submission

1.1 This document and its annexes set out the RSPB's comments on key elements of the following submissions by the Applicant:

- In Principle Habitats Regulations Derogation Provision of Evidence: Appendix 1, Flamborough and Filey Coast SPA In Principle Compensation ("Appendix 1").

1.2 Our response will also cover related aspects of the Applicant's submission "Response to the Requests for Additional Information (dated 2 August 2021)".

RSPB submissions to Norfolk Boreas examination

1.3 We have, where relevant, referred to RSPB submissions made during the Norfolk Vanguard post-examination comprised:

- RSPB Written Submission dated 27 February 2020 to Secretary of State BEIS; and
- RSPB Written Submission dated 22 April 2020 to the Secretary of State BEIS's Consultations on Hornsea Project Three Offshore Wind Farm and Norfolk Vanguard Offshore Wind Farm (here included for reference as Annex 3).

Contents of the RSPB's submission

1.4 The RSPB's submission comprises the following:

- RSPB position on adverse effect on integrity of Flamborough and Filey Coast SPA;
- Compensation measures – general comments;
- RSPB detailed comments on the Applicant's kittiwake compensation proposals;
- RSPB detailed comments on the Applicant's guillemot and razorbill compensation proposals;
- Conclusion.

2 RSPB position on adverse effect on integrity of Flamborough and Filey Coast SPA

Position at end of the Norfolk Vanguard post-examination consultation

2.1 The RSPB's overall conclusions with regards the potential adverse effect on integrity of the Norfolk Vanguard scheme on the Flamborough and Filey Coast SPA and Alde-Ore Estuary SPA were in section 4 (paragraphs 39-58 and Table 4) of the RSPB's April 2020 submission to the Secretary of State (here included as Annex 3).

2.2 The RSPB considered that due to in-combination impacts with other plans or projects adverse effects on integrity exist for kittiwake, gannet, guillemot and razorbill from the Flamborough and Filey Coast SPA and lesser black-backed gull from the Alde-Ore Estuary SPA; and that adverse effects on the integrity cannot be ruled out on the seabird assemblage of the Flamborough and Filey Coast SPA. The RSPB considered there to be sufficient certainty in the data presented by the Applicant to support this conclusion.

2.3 In Table 1 below we have repeated the Norfolk Vanguard contents of Table 4 (see Annex 3) relevant to the Flamborough and Filey Coast SPA.

Table 1: the RSPB's position on Norfolk Vanguard impacts on the Flamborough and Filey Coast SPA at the end of the Norfolk Vanguard post-examination consultation

Feature	SPA	In-combination with other plans or projects
Kittiwake	FFC	Adverse effect on site integrity exists (irrespective of whether Hornsea Project Three figures are included) due to collision risk
Gannet	FFC	Adverse effect on site integrity exists (when mortality from Hornsea Project Three included)
Guillemot	FFC	Adverse effect on site integrity exists (when mortality from Hornsea Three included).
Razorbill	FFC	Adverse effect on site integrity exists (when mortality from Hornsea Three are included).
Assemblage	FFC	Not possible to rule out adverse effect on site integrity due to collision risk and displacement (based on combined impacts of: kittiwake, gannet, guillemot and razorbill).

Updated RSPB position based on information submitted by the Applicant

2.4 The RSPB has reviewed the information provided by the Applicant in its recent submissions, in particular:

- Norfolk Vanguard Updated information on cumulative and in combination effects with the Dudgeon and Sheringham Shoal Extension Projects ("the updated in-combination effects information", dated 2 August 2021).
- Norfolk Vanguard Updated Population Viability Analysis: Flamborough and Filey Coast SPA ("the updated PVA", dated August 2021).

2.5 As part of the post-examination consultation, Norfolk Vanguard presented proposed mitigation measures to reduce collision risk with seabirds, which the RSPB welcomed. These are set out in Table 3 in Annex 3 of this submission.

2.6 The RSPB welcomed these changes and agreed with the Applicant that they reduced the predicted collision mortality. We note that these changes do not alter the displacement assessment for razorbill and guillemot. Furthermore, these changes do not substantially alter the in-combination assessment for kittiwake or gannet, which predicts unacceptable levels of mortality.

2.7 The Applicant has now presented four amendments to the in-combination assessment in its July 2021 submission (Appendix 1). These are:

- Removal of Thanet Extension from the assessment;
- Omission of Hornsea Project Three from the kittiwake assessment, as these are subject to compensation measures;
- Inclusion of updates to the East Anglia One North and East Anglia Two projects;
- Addition of preliminary collision estimates for the Dudgeon Extension and Sheringham Extension wind farms.

2.8 The RSPB welcomes the changes made with regard to Thanet Extension, East Anglia One North, East Anglia Two and Dudgeon Extension and Sheringham Extension. However, we do not agree with the omission of the Hornsea Project Three figures. This is because the adverse effect arising from Hornsea Project Three will not be avoided and because it considers the effectiveness of the Hornsea Project Three compensatory measures to be highly uncertain.

2.9 The reasons for this were included in the RSPB's responses to the East Anglia North One and East Anglia Two Examining Authority's Third Round of Written Questions: answer to Question 3.2.5 (presented as Annex 4 of this submission). However, in summary, there is no guarantee that the Hornsea Project Three compensation scheme will successfully recruit the (estimated) requirement of 73 breeding adult kittiwakes per annum deemed to be necessary to offset the losses at the FFC SPA arising from Hornsea Project Three. Furthermore, kittiwake population

ecology means there can be no biological certainty that any breeding adults so recruited will choose to breed at the FFC SPA itself. Consequently, it cannot be assumed Hornsea Project Three kittiwake compensation will "offset" the predicted population losses due to Hornsea Project Three. This means some or all of the population reduction at FFC SPA will remain. As such, this population reduction must remain as part of the in-combination assessment.

2.10 In their revised assessment, the Applicant does not consider recent revisions to Avoidance Rates, as recommended by the British Trust for Ornithology, in the most recent review of evidence of avoidance and collision available[1]. This report recommends a revised avoidance rate for kittiwake of 0.9874, lower than the previous recommended rate, resulting in a greater number of predicted collisions. While there needs to be further consideration of the validity of these revisions, this is indicative that the Applicant's continual assertion that the approach they have taken is overly precautionary is not correct.

Comments on the updated in-combination effects information and the updated PVA

2.11 The RSPB welcome the updated in-combination effects analysis, both with and without the preliminary collision and displacement estimates for Hornsea Project Four Offshore Wind Farm and the Dudgeon Extension Project (DEP) and Sheringham Extension Project (SEP).

2.12 For kittiwake, the impacts of these in-combination effects, if Hornsea Project Four and DEP and SEP are included, are predicted to result in the annual population growth rate at Flamborough and Filey Coast SPA declining in a ratio of impacted to unimpacted population growth rate of 0.9930. This means that after the 30-year lifetime of Norfolk Boreas, the population size of Flamborough and Filey Coast SPA is expected to be **80.52%** of what it would have been in the absence of these cumulative effects. As such, **it is impossible to rule out an adverse effect on the site integrity**.

2.13 For gannet, the impacts of these in-combination effects arising from collision and displacement, if Hornsea Project Four and DEP and SEP are included, are predicted to result in the annual population growth rate at Flamborough and Filey Coast SPA declining in a ratio of impacted to unimpacted population growth rate of 0.9814. This means that after the 30-year lifetime of

[1] Cook A.S.C.P., (2021) Additional analysis to inform SNCB recommendations regarding collision risk modelling. BTO Research Report 739 ISBN: 978-1-912642-30-4 Available here

Norfolk Boreas, the population size of Flamborough and Filey Coast SPA is expected to be **55.82%** of what it would have been in the absence of these cumulative effects. As such, **it is impossible to rule out an adverse effect on the site integrity**.

2.14 For guillemot, the impacts of these in-combination effects, using the Applicants preferred displacement and mortality rates, if Hornsea Project Four and DEP and SEP are included, are predicted to result in the annual population growth rate at Flamborough and Filey Coast SPA declining in a ratio of impacted to unimpacted population growth rate of 0.9925. This means that after the 30-year lifetime of Norfolk Boreas, the population size of Flamborough and Filey Coast SPA is expected to be **79.11%** of what it would have been in the absence of these cumulative effects. As such, **it is impossible to rule out an adverse effect on the site integrity**.

2.15 For razorbill, the impacts of these in-combination effects, using the Applicants preferred displacement and mortality rates, if Hornsea Project Four and DEP and SEP are included, are predicted to result in the annual population growth rate at Flamborough and Filey Coast SPA declining in a ratio of impacted to unimpacted population growth rate of 0.9960. This means that after the 30-year lifetime of Norfolk Boreas, the population size of Flamborough and Filey Coast SPA is expected to be **88.41%** of what it would have been in the absence of these cumulative effects. As such, **it is impossible to rule out an adverse effect on the site integrity**.

Comments on the updated PVA

2.16 The RSPB welcome the presentation of the updated PVA results, using the Natural England PVA tool. However, alongside this the Applicant present somewhat spurious arguments as to the greater utility of the Counterfactual of Population Growth Rate (CPGR) output metric as opposed to the Counterfactual of Population Size (CPS). This argument distracts from the usefulness of the metric, as they are best used in combination. This was a specific recommendation of a review of output metrics commissioned by JNCC and carried out by the BTO[2], recommending the ratio of growth rates are presented to quantify the consequence of impacts at a population level and the ratio of population sizes to present these impacts in an easily understandable context. The ease of understanding of the Counterfactual of Population Size is crucial; the numbers given by the Counterfactual of Population Growth Rate are less

[2] Cook, A.S.C.P. & Robinson, R.A. (2016) Testing sensitivity of metrics of seabird population response to offshore wind farm effects, JNCC Report No. 553, JNCC, Peterborough, ISSN 0963-8091.

understandable outwith a population modelling context. To use the theoretical example quoted by the BTO, a CPS of 0.515 means the population size of a Breeding Colony is expected to be 51.5% (i.e. half) of what it would have been in the absence of the development after 25 years, which is easy to understand. Whereas the corresponding CPGR, 0.973, means that the annual population growth rate at the breeding colony declines from 0.994 to 0.967. The actual scale of the consequence of this is hard for a non-specialist to comprehend, that of the CPS is not.

2.17 Not withstanding the above, it is wrong to disassociate the two metrics; aside from the question of comprehension, they are very similar, the only key difference is that CPGR does not include the length of time that the wind farm will be operational, as acknowledged by the Applicant, who state the CPGR is:

"time invariant; the value is the same whether the simulation runs for 20 years, 30 years or 100 years".

2.18 While the Applicant presents this as a strength of CPGR, it is actually an argument for the use of CPS, which does include the operational time. As we have highlighted elsewhere, there is considerable uncertainty surrounding most of the aspects of the assessment. However, the length of time that the development is operational is fixed and a crucial consideration into the scale of impact. The effect of using CPGR in isolation is to remove important contextual information, operational time, complicating the interpretation of impact, thereby increasing uncertainty and the need for precaution.

Comments on the issue of avoidance rates

2.19 As stated above, a review of Avoidance Rates for use with the Band collision risk model has been carried out by the British Trust for Ornithology[3]. The RSPB welcome this review, but note that there are unresolved issues with the rates recommended, particularly for kittiwake. As such, until the issues are resolved, which may involve re-examination of some of the data underpinning the recommendations, we consider impacts predicted by the default rates

[3] Cook, A.S.C.P. 2021. *Additional analysis to inform SNCB recommendations regarding collision risk modelling* BTO research report no. 739

recommended by the SNCBs[4] be considered, although these should be presented alongside those calculated using the recent recommendations.

2.20 These issues highlight the large amount of uncertainty inherent in the assessment and the consequent need for precaution, both in consideration of that assessment and in the design of any compensation measure arising from the predicted impact.

Summary of position on adverse effect on site integrity of the FFC SPA

2.21 Therefore, the RSPB's conclusions for each species from the FFC SPA remain as they were at the end of the Norfolk Boreas examination, now with the confirmation that Hornsea Project Three has been consented:

- **Kittiwake:** no adverse effect on site integrity alone; adverse effect on site integrity exists in combination due to collision risk;
- **Gannet:** no adverse effect on site integrity alone; adverse effect on site integrity exists in combination due to collision risk and exacerbated by displacement;
- **Guillemot:** no adverse effect on site integrity alone; adverse effect on site integrity exists (when mortality from Hornsea Three and Four are included) in combination due to displacement;
- **Razorbill:** no adverse effect on site integrity alone; adverse effect on site integrity exists (when mortality from Hornsea Three and Four are included) in combination due to displacement;
- **Seabird assemblage:** no adverse effect on site integrity alone; not possible to rule out adverse effect on site integrity due to collision risk and displacement (based on combined impacts of: kittiwake, gannet, guillemot and razorbill).

[4] Joint Nature Conservation Committee (JNCC), Natural England (NE), Natural Resource Wales (NRW), Northern Ireland Environment Agency (NIEA), Scottish Natural Heritage (SNH) 2014 *Joint Response from the Statutory Nature Conservation Bodies to the Marine Scotland Science Avoidance Rate Review*

3 Compensation measures – general comments

Level of detail

3.1 At the recent examination into the East Anglia One North and East Anglia Two offshore wind farm schemes, the Examining Authority sought interested parties' views on the level of detail that should be provided by the Applicant in respect of compensation measures (see Question 3.2.8 in the Examining Authority's Third Written Questions[5]). This was in response to the Secretary of State's request for further environmental information for Norfolk Boreas[6] and Natural England's view that greater detail about the design and implementation of [the EA1N/EA2] compensatory measures was needed to provide the SoS with the necessary confidence that those measures can be secured.

3.2 Below, we set out a slightly edited and updated (for context) version of our response to the EA1N/EA2 Examining Authority's question as we consider it directly relevant to the Norfolk Vanguard compensatory measure submissions.

3.3 The RSPB's general position on the level of detail provided by offshore wind farm (and other) developers to date was set out in its response to the Hornsea Project Three "minded to consent" consultation at paragraph 1.1 of the RSPB's submission dated 2 November 2020:[7]

"1.1 Whilst we appreciate the substantial additional information presented by the Applicant and the constructive discussions held, the RSPB considers there remain significant uncertainties with regards to the proposed compensation package, which remains experimental in nature. The number of further agreements, consents and permissions that will be required to deliver the proposed compensation measures post-consent remains profoundly worrying, as there is no certainty that those can be agreed or granted. Consistent with our views expressed on other offshore wind farm compensation proposals, it is therefore not clear that sufficient information is available to be confident ecologically, financially nor legally that all necessary compensation measures will be secured in order to maintain the overall coherence of the Natura 2000 network."

[5] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-005101-ExQ3-May-2021-APPROVED.pdf

[6] See letter dated 28 April 2021: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010087/EN010087-002810-NORB-Secretary-of-State-letter.pdf

[7] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-003259-RSPB.pdf

3.4 Therefore, we consider there are requirements that should be subject to scrutiny and settled before consent is granted in order to be confident any compensation measure has/can be secured and will have a reasonable guarantee of success. These, with some adaptation, are common to all such measures. The key issues are listed below:

- **Nature/magnitude of compensation**: Agreement on the scale of compensation required in relation to the predicted impacts and best estimate of the timeline by which the proposed compensation measure will achieve its objectives, the latter to work out the lead-in time necessary to ensure the overall coherence of the National Site Network is protected;
- **Location:** legal securing of proposed compensation sites with ability to scrutinise (a) compensation design (b) evidence of relevant consents being secured and (c) evidence of relevant legal agreements to secure land to ensure compatibility with compensation objectives;
- **Monitoring and review:** detailed monitoring and review packages agreed in advance including terms of reference and ways of working for any "regulators group" to oversee implementation of measure, review periods, feedback loops etc.

3.5 We will comment on these issues under the respective compensation proposals.

4 RSPB detailed comments on the Applicant's kittiwake compensation proposals

Introduction

4.1 The RSPB's detailed comments on the Applicant's kittiwake compensation proposals are set out in the following sections:

- Summary of RSPB comments on kittiwake compensation proposals during the post-examination consultation;
- RSPB response to new information provided by Applicant: productivity improvement – construction of artificial nesting sites.

Summary of RSPB comments on kittiwake compensation proposals during the post-examination consultation

4.2 The RSPB's comments on the Applicant's compensation proposals for kittiwake were set out in our April 2020 submission (here included as Annex 3).

4.3 Overall, the RSPB's April 2020 comments on the original Norfolk Vanguard compensation proposals for kittiwake continue to apply. They should be read alongside the comments set out in the rest of this section.

4.4 Some key points from our earlier submissions are set out below (with particular reference to our April 2020 submission included here as Annex 3):

- We supported the proposal to carry out a structured review to identify potential compensation measures that would have a "reasonable guarantee of success" (prior to consent);
- summarised our position on the preferred option to create an artificial nesting structure (at that stage to be located offshore):
    - there is little or no evidence to demonstrate that creation of a de nouveau artificial nesting structure will successfully attract and sustain a population of breeding kittiwakes;
    - concern that any birds that did colonise such a structure would be exposed to two known negative pressures: poor food availability and collision risk;

- any proposal to over-compensate to address these issues should only be considered on the basis of a fuller understanding of the implications of each pressure on the likely outcome, including appropriate population modelling.

- We considered the Applicant's decision not to provide additional information on the proposed compensation was at the Applicant's own risk and means the Secretary of State has no detailed evidence as to:
  - Whether the compensation measures will be sufficient, if the Secretary of State were to conclude an adverse effect on integrity of an SPA feature could not be ruled out; and
  - That those compensation measures had been secured.
- As set out in Annex 3 to this submission, we considered critical issues had not been addressed by the Applicant and remained unresolved. They include, among other things, a secure food supply (e.g. additionality, technical feasibility, extent and location criteria) and population dynamics (e.g. technical feasibility, location, timing, long-term implementation criteria), as well as any collision risk that may be introduced by the proposed measures

RSPB response to new information provided by Applicant: productivity improvement – construction of artificial nesting sites

4.5 The RSPB has reviewed the updated information provided by the Applicant in respect of its compensation proposals for kittiwakes. We have concentrated on new or amended information.

4.6 Overall, we note that that there are no substantive new proposals contained within the updated information. The chosen compensation option remains an artificial nesting structure. We note that the Applicant states that it has switched to an onshore option and is no longer pursuing an offshore option (e.g. paragraph 110 of Appendix 1).

4.7 While we accept this is the thrust of the new material, there remains ambiguity as to whether or not this is the case. Various paragraphs continue to allude to the possibility of an offshore location. The ambiguity of most concern is set out in clause 4 of the revised draft DCO condition (see the Draft DCO compensation extracts dated 25 August 2021) which states that:

"*in the event that the* [kittiwake compensation delivery] *strategy proposes the construction of artificial nest structures it must include*…" (emphasis added)

4.8 This underlines the lack of a clear and robust compensation proposal with a specific location and associated substantive detail which can be properly scrutinised. The proposal remains

substantially as submitted to the examination with no precise location and associated land secured, and all key details to be worked out post-DCO consent, for example:

- Detailed designs of the compensation measure in the selected location;
- Details of the terms of any legal agreements or options associated with the above to ensure they are consistent with the successful delivery of the compensation measures and will not act to undermine them;
- Evidence that the relevant planning and other consents have been secured;
- Assessment of collision risk with existing and planned offshore wind farms;
- Evidence on available food supply for breeding kittiwakes at the proposed location(s), including evidence on interaction/competition with existing colonies, especially SPA colonies;
- A meta-population analysis carried out to clarify dynamics between potential purpose-built artificial nest sites and SPA and other colony populations (see para 3.10 in the RSPB's submission to the Hornsea Project Three "minded to consent" consultation[8]).

4.9 Therefore, the majority of the RSPB's concerns remain. Below we set out our comments on key issues arising from the review of the updated information under the relevant headings from Appendix 1.

FFC SPA

4.10 At paragraph 24, the Applicant raises the issue of the kittiwake population of the FFC SPA. The RSPB refers the Secretary of State to the comprehensive report on this issue produced by Natural England: "Natural England Evidence Statement Regarding Kittiwake Count Data Used to Classify the Flamborough Head & Bempton Cliffs SPA".[9]

Section 4.5.1: update in response to SoS request for additional information

4.11 At paragraph 109, the Applicant claims that by providing a "surplus" of nesting space the (nesting) structure will ensure over-compensation for Norfolk Vanguard's predicted collision

[8] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-003259-RSPB.pdf

[9] [redacted]

mortality by a ratio of at least 3:1. The RSPB simply repeats its comments on this matter made in respect of similar statements by the Applicant in respect of Norfolk Boreas. This cited the RSPB Norfolk Boreas Deadline 17 submission (see Annex 5 in this submission):

"*…we note the discussion of different ratios to address time lags between installation, growth in population to achieve the required population level etc. Ratios need to be used where they make ecological sense and will help secure a successful outcome by providing more of something. Simply multiplying capacity in the nest structure to address uncertainty over the rate of population growth and the scale of population likely to be achieved risks giving a false level of confidence. Key questions that arise include whether the provision of more nest sites will increase the chances that birds will:*

- *Colonise;*
- *Breed successfully to enable the colony to grow and reach the required level;*
- *Recruit the requisite numbers of breeding birds into the population; and*
- *Achieve and maintain the required population level and other population parameters e.g. productivity, survival.*"

Section 4.5.2: overview

4.12 At paragraph 114, the Applicant provides a range of examples of where kittiwakes <u>have colonised</u> artificial nest sites. Critically, there is no information provided or analysis carried out in respect of the many, many more man-made structures where kittiwakes <u>have not colonised</u>. This is critical to understand in the context of a proposal which comprises the deliberate installation of a new man-made structure into the environment and the assumption that it will be colonised successfully. Understanding the reasons why kittiwakes colonise some locations and not others, and what influences their breeding success at those locations, is critical evidence in determining whether this compensation measure has a reasonable guarantee of success.

Section 4.5.3: delivery mechanism

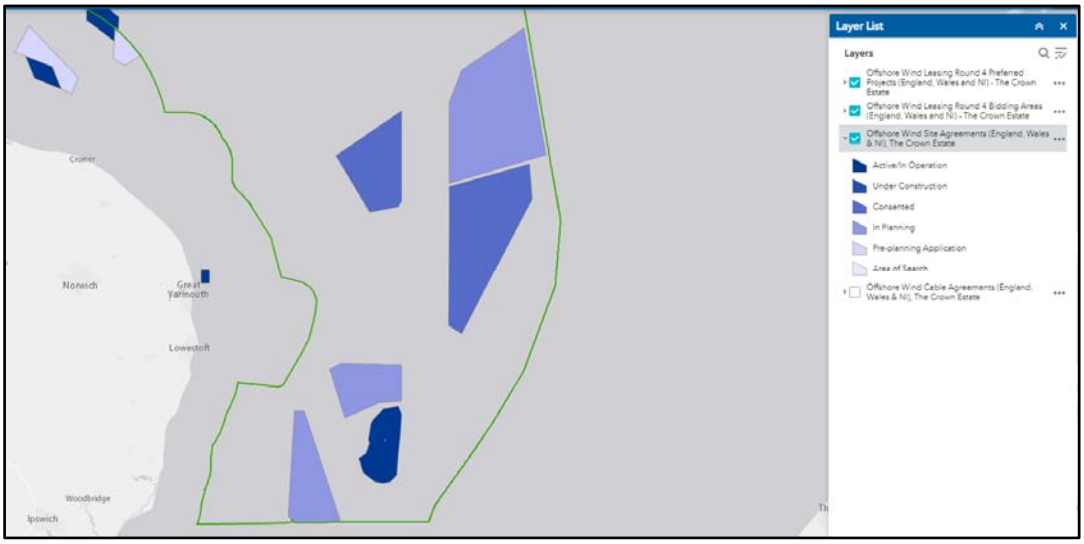
4.13 We have a number of comments on this section and set them out in sequential order:

- **Paragraph 116 – food supply:** the Applicant appears to be relying on Dogger Bank as a key food supply for kittiwakes which might colonise its artificial nesting structure (which we note later has a preferred location of Lowestoft). We make three simple points and suggest it would be inappropriate for the Secretary of State to rely on the Dogger Bank as a food supply in this context:

- Dogger Bank lies a significant flying distance from the Applicant's preferred location of Lowestoft, so it is unlikely to be a preferred feeding area;
- Dogger Bank is already known to be one of several feeding areas for kittiwakes from the FFC SPA, so if the Applicant is correct this would increase competition for the same food resource;
- Phases 1-3 of the Hornsea offshore wind farm zone lie in a direct path between Lowestoft and the Dogger Bank, which would result in collision risk.

- **Paragraphs 117 & 146:** at paragraph 117 the Applicant acknowledges that any birds which either colonise or are recruited from the proposed artificial nest structure will themselves be at risk of collision with offshore wind farms. However, at paragraph 146, the Applicant counters this argument by claiming that birds breeding in Norfolk and Suffolk are likely to forage closer to their nests (c.f. reliance on Dogger Bank above) and are at lower risk of encountering wind farms. This is plainly incorrect as any review of a map of current, consented and planned offshore wind farms adjacent to the East Anglia coast would show. Given the Norfolk Vanguard scheme is one of 5 such schemes in the East Anglia zone itself, we are surprised such a claim would be made. In fact, we consider this to be an area of high risk of collision with turbines for kittiwakes from this stretch of coast over the medium to long-term particularly if further East Anglia zone schemes are consented. A simple review of The Crown Estate's map of offshore wind farm zones (Figure 1 below) confirms that the East Anglia zones are all within the known maximum foraging range for kittiwakes and several within or close to the mean foraging range. This is further reason why the precise details on the location of the compensation measure are essential: to enable collision risk to be discussed, and as far as practicable, assessed in the context of the proposed new colony.

Figure 1: map showing location of East Anglia zone wind farm schemes in relation to Lowestoft[10]



- **Paragraph 121 – stakeholder discussions:** the Applicant refers to discussions with Natural England and other relevant stakeholders in respect of site selection. The RSPB can confirm it was not invited to be part of such discussions.

- **Paragraphs 122 and 123 – potential locations:** the Applicant describes ongoing discussions with both Associated British Ports and other landowners in respect of securing a location for an artificial nesting structure. Despite the reassurances given by the Applicant, the RSPB remains extremely concerned that no location has been secured since the now quashed decision on Norfolk Vanguard in July 2020 (some 12 prior to submission of this recent information). We consider this to be a fundamental pre-requisite in order to be able to properly assess any compensation proposal and to build confidence that a compensation measure could proceed. As we have stated elsewhere, this would also need to be accompanied by detailed designs and relevant consents. No such information has been submitted by the Applicant.

  These concerns are reinforced by paragraph 123 in which the Applicant states it will

[10] Taken from The Crown Estate's Offshore Wind Leasing Round 4 – Preferred Projects Viewer [redacted] (accessed 19 August 2021)

continue to engage with Natural England (and unspecified local planning authority) on the final location, acknowledging the need to "*consider the suitability of the location to successfully deliver compensation both currently and in the future"*.

This highlights the uncertainty surrounding the location of the compensation measure and whether or not it will prove suitable. Such information is so fundamental to consideration of a proposed compensation measure that it needs to be made available for public scrutiny before any decision to grant consent for the DCO.

We further note that in June 2021 Associated British Ports, owners of the Port of Lowestoft, announced its own plans to restore the former kittiwake nesting structure within its port as part of its preparations for the Lowestoft Eastern Energy Facility.[11]

- **Paragraphs 124-127 – design of artificial nesting structure:** the Applicant states that it has commissioned concept designs for artificial nesting structures but does not provide any details of those designs. Notwithstanding this being another example of lack of detailed information, there is an intrinsic relationship between the selected location, the design options that are feasible in that location and an assessment of whether or not the design is likely to work in respect of the compensation measure's objectives. Once again, this information should be being made available now for scrutiny.
- **Paragraph 128 – study of kittiwake breeding success at existing artificial colonies:** the RSPB welcomes this work. As we have noted elsewhere, such information is important in understanding the factors affecting breeding success at man-made structures. It is clear that the Applicant currently only intend to share such information with Natural England as part of post-consent discussions. We consider, again, that this is crucial evidence that should be made available for public consultation as part of the evaluation of the Applicant's compensation measures.
- **Paragraph 130 – timescale to install structure:** the Applicant claims that it will be able to have the artificial nesting structure installed by February 2022. In simple terms, we consider

[11] [redacted]

this timescale to be exceedingly optimistic: it is based on a timescale (set out in Table 4.4 of Appendix 1) that requires securing the (as yet unknown) site, detailed design, and associated stakeholder consultation to have been completed by October 2021 when a planning application would be submitted. It also appears to take no account of its own DCO condition that requires (i) a DCO consent and (ii) a delivery strategy to have been drafted and submitted to the Secretary of State for approval. It would be more helpful if a realistic implementation schedule was described.

- **Paragraphs 130-132 and Figure 1- predicted colony growth:** The Applicant has presented a graph, Figure 1 of Appendix 1, of predicted colony growth alongside cumulative mortality for the kittiwake population of the FFC SPA. This is claimed to show that the "mortality debt" will be "paid back" in eleven years. However, this illustration is dependent on a number of entirely questionable and uncertain assumptions. These include, inter alia, the scale of compensation required, the likelihood of colonisation and the timescale to achieve the required population levels, as detailed in the RSPB's Deadline 17 submission to the Norfolk Boreas examination (see Annex 5). Most importantly, in presenting this graph, the Applicant implies a degree of precision and certainty that is not present in their proposals for a compensation scheme as they currently stand. For example, it is impossible to be sure that, as claimed by the Applicant, that 50 pairs of birds will colonise a novel structure in the first years. **On this specific point we consider it necessary to draw the attention of the Secretary of State to the inconsistency that the same Applicant suggests a lower starting point of only 25 pairs for its Norfolk Boreas artificial nesting structures for kittiwakes – see paragraph 138 of the equivalent Appendix 1 to the Norfolk Boreas scheme. This appears to be to ensure the claimed payback duration is kept to a minimum**.

  Notwithstanding the Applicant's utilisation of markedly different colonisation rates, the RSPB's central point is that it could take a large number of years to reach this, or it may not happen at all. The biological uncertainty is further exacerbated by the fact that no detail has been provided yet as to the location of this unspecified structure, as detailed below.

- **Paragraph 133 – ABP planned port improvements:** the RSPB welcomes the provision of information in relation ABP's planned improvements to the Port of Lowestoft and the Applicant's recognition of the potential implications of such work for a nesting structure located within or adjacent to the port which may require mitigation. However, we have seen no evidence that the suggested 50m buffer around all construction activity would be

sufficient to mitigate the nesting structures against the impacts of the port redevelopment. However, this reinforces our concerns over the lack of detail on exactly what location the Applicant intends to site the nesting structures. Understanding the potential impacts (construction and ongoing) of any such port developments on the proposed compensation measure is critical information to determine whether or not it is appropriate. This includes the views of ABP itself on whether any proposed mitigation measures suggested by the Applicant are compatible with its own plans. There can be no guarantees they will.

- **Paragraph 137 – rival artificial nesting structures and Lowestoft:** the Applicant notes that other developers (wind farms plus Sizewell) are exploring the deployment of kittiwake nesting structure measures in Lowestoft and the surrounding area. This raises the legitimate concern of over-supply of structures within a discrete area and how this could affect the success of any single proposal (see ABP's plan to restore the Lowestoft Harbour Kittiwake Wall noted above). It reinforces the need for more detailed information on the Applicant's proposal so that this issue can be properly considered. We also note that the importance of community support in e.g. Lowestoft is an important issue to take in to account given the range of local opinions with respect to urban nesting kittiwakes.[12] This is another key matter that has not been fully considered by the Applicant.

Section 4.5.4: spatial scale

4.14 The RSPB agrees with Natural England that compensation measures should aim to compensate for the number of annual kittiwake collisions represented at the upper 95% confidence interval of the calculation of mortality. This is necessary to account for the considerable uncertainty inherent throughout the calculations, from the modelling of predicted collisions through to the likelihood of colonisation and colony growth. For reasons given elsewhere in this and our 2020 submissions, we disagree with the Applicant that the precautionary nature of the assessment means that this is "over-compensation".

Section 4.5.5: timescale

4.15 For the reasons set out in our comments in paragraph 4.13 above (paragraphs 130-132 and Figure 1- predicted colony growth), we do not agree that there can be any confidence over the

[12] See for example: [redacted]

general timescales for colonisation and growth of a new artificial nesting structure, as set out in section 4.5.5.

4.16 At paragraphs 148-154, the Applicant sets out its argument that new structures are readily colonised by kittiwakes. It accepts at paragraph 149 that some new structures have not been colonised and attributes this to examples where attempts were being made to attract birds away from established nest sites. The successful examples it describes appear to relate where existing nest structures have been destroyed and the displaced birds forced to move (see paragraph 150, 152 and 153). We would argue that these are also not comparable to the situation faced with a compensation proposal which is, as the Applicant describes, intended to provide nesting capacity for additional nesting pairs to those already nesting. The evidence on new breeding birds occupying new structures is either absent or equivocal.

Section 4.5.6: maintenance and monitoring

4.17 We welcome the monitoring suggestions outlined at paragraphs 158-162. As a minimum, a detailed monitoring strategy should be made available for public consultation now. This is in keeping with Natural England's advice on what should be included in a compensation plan, which we have recommended (see section 2 in Overview and Summary) should be the basis for proper consideration of the Applicant's compensation proposals before any decision on the DCO consent. The RSPB's submission at Deadline 17 of the Norfolk Boreas examination (see para 2.9 in Annex 5) set out a minimum monitoring requirement for all species requiring compensation measures. Each measure would require bespoke consideration to ensure it is properly tailored to the requirements.

Section 4.5.7: feasibility

4.18 The Applicant states it considers the provision of artificial nest sites for kittiwakes is a feasible measure. However, for all the reasons set out elsewhere in this response, we consider there is no substantive proposal in front of the Secretary of State and available for public scrutiny that would enable the feasibility of the measure to be confirmed. It is therefore not possible to determine if the measure is feasible and can be delivered to an as yet to be agreed standard.

Section 4.6.1: stakeholder engagement

4.19 The RSPB welcomes the Applicant's offer of stakeholder engagement with the RSPB. We consider the offer should apply to serious engagement on the details of the proposed compensation measures prior to the Secretary of State making a decision on the DCO consent.

Section 4.6.2: implementation timetable

4.20 At paragraph 170, the Applicant sets out a list of measures to implement the proposed artificial nesting structure. Consistent with the RSPB's arguments elsewhere, we consider all the measures down to "planning approved" should be subject to consultation and necessary consents before any decision on the DCO consent. This would provide the Secretary of State with the confidence that an appropriate compensation measure had been properly secured.

Section 4.6.2.1: DCO condition

4.21 The RSPB has set out its key concerns with the Applicant's approach to its DCO wording in section 2 of the Overview and Summary part of this submission and why it is seriously flawed. We do not consider it fit for purpose. Table 5 in the RSPB's Deadline 17 submission[13] to the Norfolk Boreas examination (here included as Annex 5) also included detailed comments on a previous iteration of a kittiwake compensation DCO wording. While that wording was different to the current proposal, the RSPB's response includes relevant information for any reformulation of the DCO wording.

4.22 There is one specific issue we draw attention to and that is the proposed objective to increase the number of adult kittiwakes to recruit to the FFC SPA. We were critical of this approach during the Norfolk Boreas examination and support the approach taken by Orsted and the Secretary of State in respect of Hornsea Project Three where the objective was to contribute to an increase of breeding adults to the Eastern Atlantic kittiwake population (paragraph 3.34 of the Hornsea Project Three Kittiwake Compensation Plan).

4.23 Our main reasons are as follows:

- it is accepted by the RSPB and Natural England (and Hornsea Project Three) that kittiwake population ecology means there can be no biological certainty that any breeding adults so recruited will choose to breed at the FFC SPA itself;
- Consequently, it cannot be assumed kittiwake compensation will "offset" the predicted population losses due to the Norfolk Vanguard scheme. This means some or all of the population reduction at FFC SPA will remain.

[13] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010087/EN010087-002549-DL17%20-%20RSPB%20-%20Deadline%20Submission.pdf

Section 4.6.3: proposed content of kittiwake compensation plan

4.24 See section 2 in the RSPB's Overview and Summary document for overarching comments on Natural England's advice on the proposed content of a species' compensation plan and the RSPB's advice on the additional information required before deciding whether to grant consent for the Norfolk Vanguard scheme.

5 RSPB detailed comments on the Applicant's guillemot and razorbill compensation proposals

Introduction

5.1 This section assesses the Applicant's proposals to carry out island restoration (IR) as compensation for impacts on guillemots and razorbills from the FFC SPA, should the Secretary of State require such measures. At this stage we have chosen not to comment on the Applicant's consideration of bycatch mitigation as a possible compensation measure, but the reserve the right to do so if it is put forward as compensation proposal.

5.2 Island restoration is a complex and highly specialised conservation measure. For this reason, we have taken time below to provide the Secretary of State with an introduction to IR in the UK and an outline of the critical matters that need to be addressed in evaluating whether an IR scheme can be assessed as feasible, planned in sufficient detail and is capable of being implemented successfully over the long term. We consider this necessary to help the Secretary of State determine whether the Applicant's proposal is fit for purpose. We then go on to evaluate the (essentially identical) compensation proposals submitted by the Applicant for both guillemot and razorbill.

5.3 In this section we set out the following:

- Overview of IR in the UK and relevance to the Applicant's proposals. This includes sections on:
  - Key considerations in developing a successful IR scheme (including the critical importance of securing community support)
  - Prioritising IR in the UK – a short summary of Stanbury et al 2017[14]
  - Island restoration in the UK to date and the main seabird species targeted
  - How vulnerable are guillemot and razorbills to predation by Invasive Non-Native Species;

[14] Stanbury, A., Thomas, S., Aegerter, J., Brown, A., Bullock, D., Eaton, M., Lock, L., Luxmoore, R., Roy, S., Whitaker, S. and Oppel, S. (2017) *Prioritising islands in the United Kingdom and crown dependencies for the eradication of invasive alien vertebrates and rodent biosecurity*. European Journal of Wildlife Research 63: 31.

- Summary of pre-requisites to assess an island restoration compensation proposal;
- Assessment of the Norfolk Vanguard island restoration compensation proposals;
- DCO drafting;
- Guillemot and razorbill compensation plans.

Overview of island restoration in the UK and relevance to the Applicant's proposals

5.4 Below, we set out an overview of IR in the UK based on the RSPB's considerable experience in this field from scientific, conservation, community relations and practical implementation and monitoring perspectives.

5.5 Island restoration has become a mainstream conservation measure to restore locally extinct or declining seabird populations. It comprises the eradication of invasive non-native species (INNS), the subsequent management for ecosystem recovery and scrupulous attention to biosecurity.[15] In the UK, the greatest impacts come from a removal of a range of invasive predatory mammals: these include black rat, brown rat, feral ferret, feral cat, and American mink.

Key considerations in developing a successful IR scheme

5.6 To succeed, IR needs the effective targeting of 100% of the INNS to achieve eradication, supported by comprehensive measures to keep the risk of reinvasion low and ongoing capacity to respond effectively to any biosecurity breach. The complete support of the affected island communities is critical to avoid weak links in the eradication and biosecurity chains.

5.7 Therefore, it requires the feasibility of removing the INNS for each island to be restored to be firmly established, rather than assumed, combined with ongoing commitment among key stakeholders. This is to ensure successful eradication is sustained through implementation of biosecurity and (48-hour) emergency response plans and securing the resources necessary to implement these measures in perpetuity.

[15] Thomas, S., Brown, A., Bullock, D., Lock, L., Luxmoore, R., Roy, S., Stanbury, A. and Varnham, K. (2017) *Island restoration in the UK -past, present and future*. British Wildlife (April 2017): 231-242.

5.8 The level of detailed information and assessment described below is critical to bottom out before deciding whether an IR scheme is feasible to proceed to implementation. In the context of determining whether a compensation measure is feasible and therefore DCO consent should be granted, this is particularly important. For the reasons set out below, it cannot be assumed it will sort itself out and that all the key detail can be worked out later.

5.9 To have confidence IR will succeed in restoring the seabird species it is intended to benefit requires:

- A good understanding of the vulnerability of the beneficiary seabird species to the INNS to be targeted for removal i.e. to be confident that INNS removal will support an increase in the seabird's population;
- An understanding of the risk of reinvasion by the target INNS (assuming they have been successfully eradicated). Each species has a varying capacity to swim between islands. Published maximum potential swimming distances for a selection of INNS are:
    - 2.0 km brown rat
    - 0.75 km black rat
    - 0.5 km house mouse
    - 6.5km American mink.
- A detailed assessment of the selected island(s) that in addition to the above:
    - Establishes the presence/absence of the beneficiary seabird species and its historic and current population status. Restoring an existing colony is easier than seeking to reinstate a species that is locally extinct;
    - Habitat suitability survey to determine the extent of unoccupied but suitable habitat available to the beneficiary seabird species;
    - Up to date survey to establish the presence of INNS of concern, on both target islands and areas where they could reinvade from;
    - A <u>full-scale Feasibility Study carried out by a suitable eradication expert contractor to international best practice standards</u>. This must be against the 7 feasibility criteria set

out in Table 1 on page 18 of the Manual of the UK Rodent Eradication Best Practice Toolkit (2018)[16] i.e.:

- Technically feasible
- Sustainable
- Socially acceptable
- Politically and legally acceptable
- Environmentally acceptable
- Capacity
- Affordable.

5.10 Successful IR requires meticulous and detailed preparation and planning to ensure that it is feasible at the selected location. This is why detailed feasibility studies and preparation are required. As summarised above, these take account of factors such as interactions between different predators, the risk of anthropogenic reinvasion, views of residents (social feasibility) and costs.[17]

Critical importance of securing community support to ensure successful island restoration

5.11 A critical factor in the success of an IR scheme is securing the support of the affected human communities. Without this, IR schemes are at considerable risk of failure as it can result in weakness in key elements of an IR scheme, especially the eradication itself and then the ongoing biosecurity measures. Securing such support is a highly skilled job.

5.12 In island communities, this will involve not just the main landowners, but all property owners or occupiers, boat launch and flight locations (both on relevant islands and any mainland access points) etc.

[16] See: [redacted]

[17] Stanbury, A., Thomas, S., Aegerter, J., Brown, A., Bullock, D., Eaton, M., Lock, L., Luxmoore, R., Roy, S., Whitaker, S. and Oppel, S. (2017) *Prioritising islands in the United Kingdom and crown dependencies for the eradication of invasive alien vertebrates and rodent biosecurity*. European Journal of Wildlife Research 63: 31.

5.13 Stanbury et al 2017[18] point out that this key element of IR schemes has often been underestimated. They give the example of the (now successful) IR scheme for St. Agnes and Gugh in the Isles of Scilly which took more than 10 years of preparatory work with the island communities involved. They considered 10 years a reasonable timescale for similar projects.

5.14 The Secretary of State will understand why the RSPB considers this is a key consideration in assessing any IR compensation proposal. It is directly relevant to the aim to have compensation in place and effective before damage occurs. Any suggestion by an applicant that securing community support is straightforward, or that it could either be short-circuited or completed within a couple of years, risks undermining the proposal and could result in failure and/or hostility to the IR scheme.

Prioritising island restoration in the UK – a short summary of Stanbury et al 2017

5.15 A paper by Stanbury et al 2017 has been used by the Applicant (and other offshore wind farm developers) to try and identify possible island locations that could be suited to IR. To assist the Secretary of State we thought it would be helpful to provide a brief summary of what the Stanbury et al 2017 seeks to do and what it does not seek to do.

- Stanbury et al 2017 aimed to assist the effective targeting of IR in the UK to maximise conservation gain given limited resources.
- It drew on existing IR prioritisation methods and compiled data on the presence of almost 100 vertebrate species (seabirds, mammals) and subspecies of conservation interest for all 9,688 islands in the UK (including crown dependencies).
- 955 of these islands were identified as having both species of conservation interest and invasive invertebrates.
- They assessed the ecological importance of the native invertebrates and the anticipated impact of the INNS present to estimate the benefit of restoration. This was based on the feasibility and sustainability of INNS eradications in relation to island size, human

[18] Stanbury, A., Thomas, S., Aegerter, J., Brown, A., Bullock, D., Eaton, M., Lock, L., Luxmoore, R., Roy, S., Whitaker, S. and Oppel, S. (2017) *Prioritising islands in the United Kingdom and crown dependencies for the eradication of invasive alien vertebrates and rodent biosecurity*. European Journal of Wildlife Research 63: 31.

population and risk of unassisted INNS reinvasion by swimming. They explored different levels of risk to assess priorities for IR.

- They identified 25 islands in Scotland, Northern Ireland and the Channel Islands as those that would benefit most from eradications.
- Importantly, they made clear that this was an initial guide only and that further, detailed feasibility studies would be needed before planning any eradication scheme.

5.16 Drawing on earlier work, Stanbury et al 2017[19] considered the breeding ecology of each seabird species. They assessed the likely severity of impact of the INNS on the beneficiary seabird species as follows:

- 0 = no apparent negative impact on the seabird species;
- 1 = small to moderate impact that would reduce population size but allow the seabird species to persist;
- 2 = severe impact that would eventually lead to local extinction of the seabird species.

5.17 As noted above, they considered the level of risk from reinvasion based on the swimming distances of the different INNS. The closer an island is to a source of INNS, the higher the risk of reinvasion in the absence of effective biosecurity measures and emergency response plans. Some islands are too close to ineradicable sources of INNS to ever achieve complete eradication.

5.18 Their "medium risk" approach was based on an assumption that natural reinvasion by the INNS would occur at up to half its maximum swimming distance. Their risk averse approach assumed natural reinvasion could occur up to an INNS maximum swimming distance.

5.19 This enabled Stanbury et al 2017 to produce different priority listings of islands for IR schemes depending on the level of risk accepted.

5.20 The priority listing which this Applicant (as well as other offshore wind farm proponents) has focused on is contained in Table 3 of Stanbury et al 2017. Table 3 lists the top 25 islands based

[19] Stanbury, A., Thomas, S., Aegerter, J., Brown, A., Bullock, D., Eaton, M., Lock, L., Luxmoore, R., Roy, S., Whitaker, S. and Oppel, S. (2017) *Prioritising islands in the United Kingdom and crown dependencies for the eradication of invasive alien vertebrates and rodent biosecurity*. European Journal of Wildlife Research 63: 31.

on the benefit of feasible and sustainable eradications and the medium risk approach to natural reinvasion described above.

5.21 We have partially reproduced Table 3 below, showing the ranked list of islands and the INNS confirmed or thought to be present on each island.

Table 2: simplified version of Table 3 (Stanbury et al 2017): Top 25 islands prioritised for invasive alien invertebrate eradication in the UK based on the eradication benefit of feasible and sustainable eradications and a medium-risk approach from natural reinvasion.

Note: only Rank position, island name and INNS presence shown

Rank position	**Island name**	**INNS presence** (confirmed or *probable*) Species in **bold** are considered ineradicable on that island
1	Foula, Shetland	Feral cat, House mouse, European rabbit, Wood mouse, European hedgehog
2	Fair Isle	Feral cat, House mouse, Wood mouse, European rabbit
3	Westray, Orkney	Feral cat, House mouse, **European rabbit, European hedgehog**
4a	Garbh Eilean and Eilean an Taighe, Shiant Islands	Black rat
4b	Rousay, Orkney	Brown rat, Feral cat, House Mouse, **European rabbit**
4c	Rathlin Island, Northern Ireland	Brown rat, Feral cat, Feral ferret, Feral goat, House mouse, Wood mouse, European rabbit
7a	Colonsay & Oronsay, Inner Hebrides	Brown rat, Feral cat, Feral goat, House mouse, Wood mouse, **European rabbit**
7b	Unst, Shetland	Brown rat, Feral cat, House mouse, **European rabbit, European hedgehog**
9	Yell, Shetland	Feral cat, **House mouse, European hedgehog, European rabbit**
10	Rum, Small Isles	Brown rat, Feral goat, House mouse, Wood mouse
11	Papa Westray, Orkney	House mouse, European rabbit, *Feral cat*
12a	Fetlar, Shetland	Feral cat, House mouse, Wood mouse, European rabbit, **European hedgehog**
12b	Inchkeith, Forth Estuary	Brown rat, House mouse, European rabbit
14	Hoy, Orkney	Feral cat, **European rabbit, Brown rat, European hedgehog, House mouse, Wood mouse**
15	Flotta, Orkney	Brown rat, Feral cat, House mouse, European hedgehog, European rabbit
16a	Tiree, Inner Hebrides	*Brown rat, Feral cat,* Wood mouse, *House mouse*, **European hedgehog**
16b	Inchmarnock, Clyde Islands	*Brown rat, House mouse, American mink, European rabbit*
18a	Stronsay, Orkney	Brown rat, Feral cat, House mouse, Wood mouse, European rabbit, **European hedgehog**
18b	Eilean Mhuire, Shiant Islands	Black rat
20a	Gairsay, Orkney	Feral cat, Brown rat, European rabbit
20b	North Ronaldsay, Orkney	Feral cat, House mouse, Wood mouse, European hedgehog, European rabbit
22	Muck, Small Isles	Brown rat, Wood mouse, *Feral cat, House mouse*

Rank position	Island name	INNS presence (confirmed or *probable*) Species in **bold** are considered ineradicable on that island
23	Housay, Outer Skerries	Brown rat, *Feral cat, House mouse, European rabbit*
24	South Havra, Shetland	*Feral cat*
25	Herm, Channel Islands	Black rat, Brown rat, Wood mouse, *Feral cat, House mouse, European rabbit*

5.22 It is important to note that most islands have multiple INNS that would need to be considered i.e. not just rats. As we note below, some of these islands have already been subject to IR schemes e.g. Shiant Islands and others are in planning e.g. Rathlin Island.

5.23 At all times, Stanbury et al 2017 emphasise this was an initial prioritisation exercise for which **"more detailed assessments can be undertaken before planning an eradication**". The RSPB considers those detailed assessments are essential. Stanbury et al 2017 further note that "**closer inspection of some islands may reveal that the eradication of one or several [INNS] currently considered feasible and likely to deliver ecological benefit may still not be possible."**

5.24 This underlines the need for the detailed studies outlined above before deciding whether a particular IR scheme is both feasible and capable of delivering the desired ecological benefit.

Island restoration in the UK to date and the main seabird species targeted

5.25 As Thomas et al (2017)[20] set out, the importance of UK islands for seabirds has meant that IR in the UK has focused almost exclusively on removing predatory mammals. The focus to date has been on brown rats, but on Lundy and the Shiant Islands, black rats were also targeted (see paragraphs 5.33 to 5.40 below for more on these species). A small number of feral cats were removed from Ramsey Island, complementing its rat eradication scheme.[21]

5.26 Burrow nesting seabirds have been the top priority for IR schemes in the UK due to their known vulnerability to predatory mammals and the strong likelihood of a positive response to removal of INNS i.e.:

- Manx shearwaters;

[20] Thomas, S., Brown, A., Bullock, D., Lock, L., Luxmoore, R., Roy, S., Stanbury, A. and Varnham, K. (2017) *Island restoration in the UK -past, present and future*. British Wildlife (April 2017): 231-242.
[21] Thomas, S., Brown, A., Bullock, D., Lock, L., Luxmoore, R., Roy, S., Stanbury, A. and Varnham, K. (2017) *Island restoration in the UK -past, present and future*. British Wildlife (April 2017): 231-242.

- Storm petrels; and
- Puffins.

5.27 Thomas et al (2017)[22] set out the 12 IR schemes that have taken place in the UK to date, starting in 1968 on Cardigan Island (Ceredigion) and most recently, the Shiant Islands (Hebrides). Most of these IR schemes were focused on brown rats but black rats were also included for Lundy and The Shiants. As noted above, a few feral cats were removed on Ramsey to complement the brown rat eradication.

5.28 Some of these have been spectacularly successful notably Lundy and Ramsey (see below) but others less so because the eradication failed, the island was reinvaded or the eradication did not produce the expected response from the key species.

- For seabird species where productivity is driven by food availability and the state of the marine ecosystem, the removal of land-based predators may only benefit where food is not limited. This underlines the need to understand whether there is a good food supply available to the beneficiary seabird species which are the focus of the IR proposal.
- For some sites, lack of monitoring data before and after eradication limits the understanding of the impacts of the eradication.

5.29 For long lived seabirds, the benefits of an IR scheme may not be clear until a decade after eradication i.e. the benefits for some of the IR schemes may not yet be clear. However, the recovery on Lundy and Ramsey islands has been very strong, particularly for the burrow nesting species like Manx shearwater.

What evidence is there that island restoration benefits guillemot and/or razorbill?

5.30 Razorbill and guillemot have also increased on Lundy as noted by the Applicant at paragraph 217 and 275 citing Booker et al (2019).[23] However, the RSPB is also aware that there has been a more general increase in the populations of these species elsewhere in south-west England and south Wales. Further research and analysis is required to:

[22] Ibid

[23] Booker, H., Price, D., Slader, P., Frayling, T., Williams, T. and Bolton, M. (2019). *Seabird recovery on Lundy population change in Manx shearwaters and other seabirds in response to the eradication of rats*. British Birds 112: 217-230.

- quantify how much the increase in the populations of these species on Lundy is down to rat eradication (and the influence of black rat versus brown rat (see next section); and/or
- how much is due to other factors such as food supply.

5.31 What the UK experience does show is a mixed picture of success, with good evidence to show the benefits for Manx shearwater and storm petrel but limited information demonstrating benefits for guillemot and razorbill.

How vulnerable are guillemots and razorbills to predation by INNS

5.32 As noted in paragraphs 5.9 and 5.16 above, understanding the vulnerability of a seabird species to predation by INNS requires a knowledge of the species' breeding habitat requirements and the potential for an INNS to access that habitat and predate the species.

5.33 In Table 3 below, we set out a summary description of the breeding habitat of each species: guillemot and razorbill. Using the scoring system from Stanbury et al 2017 (see paragraph 5.16 above), we have also indicated the RSPB's assessment of the likely severity of impact from (i) black rat and (ii) brown rat for each auk species.

Table 3: summary description of the breeding habitat of guillemot and razorbill and the RSPB's general assessment of the likely severity of impact of black rat and brown rat on that species (based on scoring system in Stanbury et al 2017)

Species	Breeding habitat (from JNCC)	Likely severity of impact from black rat	Likely severity of impact from brown rat
Guillemot	Breeding areas are situated where the birds are safe from mammalian predators. This means that on the mainland, they are confined to sheer cliffs or in among boulders at the bases of cliffs where access is difficult even from the sea. On islands, cliffs and the tops of large stacks are preferred but where such habitat is absent they breed among rocks or even on flat open ground.[24]	Score = 1 Small to moderate impact that would reduce population size but allow the seabird species to persist	Score = 1 Small to moderate impact that would reduce population size but allow the seabird species to persist
Razorbill	Breed mainly on small ledges or in cracks of rocky cliffs and in associated scree, and on boulder-fields.[25]	Score = 2 Severe impact that would eventually lead to local extinction of the seabird species	Score = 2 Severe impact that would eventually lead to local extinction of the seabird species

5.34 The RSPB's general assessment is that guillemots are less vulnerable to rat predation than razorbills due to their general preference for sheer cliffs to nest. This should make them less accessible to both rat species.

5.35 In addition, based on practical knowledge of the two rat species, it is considered black rat is a higher risk to both species due to its greater agility and ability to access difficult nesting locations.

[24] See: [redacted]
[25] See: [redacted]

5.36 Therefore, in summary (and in general terms):

- Razorbills are thought to be more vulnerable than guillemots to predation by black and/or brown rat and risk of local extinction due to the accessibility of their nesting habitat;
- Black rat is a greater threat than brown rat to either guillemot or razorbill due to its greater agility and potential ability to access their nesting habitat.

5.37 Black rat has a highly restricted distribution in the UK and crown dependencies. Following its successful eradication from Lundy and the Shiant Islands it is the RSPB's understanding that it is now restricted to the following islands:

- Inchcolm (Firth of Forth);
- Channel Islands: black rats confirmed on Sark only and no black rats have been reported from Guernsey in recent years (J. Henney, States of Guernsey pers.comm.).

5.38 Since publication of the Stanbury et al 2017 article (see Table 2 above), small mammal trapping work has been carried out on Herm which found only brown rats present. Additional small mammal trapping would be required on Jethou and The Humps to provide up to date information for those islands.

5.39 As set out above, a detailed feasibility study of potential IR locations would be required before it could be determined what level of risk black rat, brown rat or other INNS pose to either guillemot or razorbill. This would include an assessment of the availability of suitable but unoccupied breeding habitat for each species to determine if there could be a benefit to either auk species from an eradication scheme.

Summary of pre-requisites to assess an island restoration compensation proposal

5.40 Based on the above, the RSPB considers the following elements are essential before a proposal to deploy IR as a compensation measure can be properly assessed to determine if it will have a "reasonable guarantee of success" in line with Defra and EC guidance on compensation. The following evidence should be available for public consultation before any decision to grant consent for an offshore wind farm scheme relying on IR as a compensation measure:

- **A full-scale Feasibility Study carried out by a suitable eradication expert contractor to international best practice standards in order to firmly establish that the removal of INNS for each island to be restored is feasible**. They would need expertise relevant to the chosen approach to bait laying: ground-based versus aerial. (This must be against the 7 feasibility criteria set out in Table 1 on page 18 of the Manual of the UK Rodent Eradication Best Practice Toolkit (2018)[26] i.e.:
    - Technically feasible
    - Sustainable
    - Socially acceptable
    - Politically and legally acceptable
    - Environmentally acceptable
    - Capacity
    - Affordable.
- The above will include but is not limited to detailed assessments of the selected islands regarding:
    - the presence/absence of the beneficiary seabird species and its historic and current population status;
    - Habitat suitability survey to determine the extent of unoccupied but suitable habitat available to the beneficiary seabird species;

[26] See: [redacted]

- Up to date survey to establish the presence of INNS of concern, on both target islands and areas where they could reinvade from;
- A good understanding of the vulnerability of the beneficiary seabird species to the INNS to be targeted for removal on the selected islands and evidence to show how they will benefit from the IR proposal i.e. to be confident that INNS removal on the specified islands will support any claimed increase in the seabird's population.

- It must also include:
  - Detailed biosecurity and emergency response plans, based on a proper understanding of the risk of reinvasion by the target INNS and to be funded in perpetuity;
  - Evidence that full community support for the IR scheme (eradication, biosecurity and emergency response) has been obtained;
  - Evidence that relevant landowner/occupier consents have been obtained;
  - Evidence that relevant legal consents to carry out IR have been obtained where required e.g. ASSI/SSSI consents from the relevant statutory nature conservation body; information for any accompanying Habitats Regulations Assessment if an SPA/SAC/Ramsar site is likely to be affected; and Health and Safety Executive/Defra consent (depending on bait type and delivery method used).

Assessment of the Norfolk Vanguard island restoration compensation proposals

5.41 We have assessed the Applicant's IR compensation proposal against the key evidence identified above that we consider is required for serious consideration of an IR scheme as a compensation measure. The RSPB considers the Applicant's proposals do not meet the standards necessary to be considered a feasible compensation measure at this time.

5.42 We consider the Norfolk Vanguard IR compensation proposals for both guillemot and razorbill are not fit for purpose. At their most basic level, they contain no clear proposals for any specific island to be restored, let alone the evidence we consider necessary to evaluate the feasibility and likely success of any such scheme in respect of restoring the populations of guillemots and razorbills.

5.43 Based on this, the RSPB's overall conclusions are that, in respect of guillemot and razorbill, Norfolk Vanguard has not presented compensation measures that:

- Have a reasonable guarantee of success based on the best scientific knowledge;

- Would be secured (legally, financially and technically) in advance of consent being granted;
- Would ensure the overall coherence of the Natura 2000 network was protected.

DCO drafting

5.44 The RSPB has set out its key concerns with the Applicant's approach to its DCO wording in section 2 of the Overview and Summary part of this submission and why it is seriously flawed. We do not consider it fit for purpose.

Guillemot and razorbill compensation plans

5.45 See section 2 in the RSPB's Overview and Summary document for overarching comments on Natural England's advice on the proposed content of a species' compensation plan and the RSPB's advice on the additional information required before deciding whether to grant consent for the Norfolk Vanguard scheme.

5.46 Our detailed advice in this section to a large extent replaces Natural England's advice in respect of an IR scheme for guillemot and razorbill given that it represents more specialist advice. However, as noted in the RSPB's Overview and Summary document, we support Natural England's general advice on this matter.

6 Conclusion

RSPB position on adverse effect on integrity

6.1 The RSPB's conclusions for each species from the FFC SPA remain as they were at the end of the Norfolk Boreas examination, now with the confirmation that Hornsea Project Three has been consented:

- **Kittiwake:** no adverse effect on site integrity alone; adverse effect on site integrity exists in combination due to collision risk;
- **Gannet:** no adverse effect on site integrity alone; adverse effect on site integrity exists in combination due to collision risk and exacerbated by displacement;
- **Guillemot:** no adverse effect on site integrity alone; adverse effect on site integrity exists (when mortality from Hornsea Three and Four are included) in combination due to displacement;
- **Razorbill:** no adverse effect on site integrity alone; adverse effect on site integrity exists (when mortality from Hornsea Three and Four are included) in combination due to displacement;
- **Seabird assemblage:** no adverse effect on site integrity alone; not possible to rule out adverse effect on site integrity due to collision risk and displacement (based on combined impacts of: kittiwake, gannet, guillemot and razorbill).

Compensation proposals in respect of FFC SPA for kittiwakes, guillemots and razorbills

6.2 Based on the RSPB's careful consideration of the Applicant's compensation proposals for kittiwake, guillemot and razorbill set out in Appendix 1, the RSPB's overall conclusions are that Norfolk Vanguard has not presented compensation measures that:

- Have a reasonable guarantee of success based on the best scientific knowledge;
- Would be secured (legally, financially and technically) in advance of consent being granted;
- Would ensure the overall coherence of the National Sites Network was protected.