Written Submission

for the

Royal Society for the Protection of Birds

Response to the Examining Authority's First Written Questions

(ExQ1)

Additional Submission

22 April 2025

Planning Act 2008 (as amended)

In the matter of:

Application by Dogger Bank South (West) Limited and Dogger Bank South (East) Limited for an Order

Granting Development Consent for the Dogger Bank South Offshore Wind Farms

Planning Inspectorate Ref: EN010125

RSPB Registration Identification Ref: 20050122

Contents

1. Introduction

1.1. The RSPB's response to the Examining Authority's First Written Questions (ExQ1), as updated by its Rule 17 letter (dated 3 March 2025) are set out in the table below.

1.2. This submission is further to our letters of 14 March 2025 and 1 April 2025, REP3-066 and AS-173. The latter contained responses to questions: OR.1.12, OR.1.15, OR.1.28, OR.1.31, OR.1.40 and OR.1.51

1.3. Below we provide answers to the following questions: OR.1.3, OR.1.5, OR.1.6, OR.1.9, OR.1.18, OR.1.37, OR.1.50 and OR.1.52.

ExQ1	Question to:	Question	RSPB response
Offshore and intertidal ornithology and relevant Habitats Regulations Assessment (HRA) aspects			
OR.1.3	NE RSPB	**Displacement, mortality and apportionment values for razorbill and guillemot on the FFC SPA** For the assessment in the Guillemot [and Razorbill] Compensation Plan [AS-089] relating to the razorbill and guillemot features of the FFC SPA, which values of displacement, mortality and apportionment presented in the RIAA [AS-085], should the ExA rely on for its recommendation and ultimately the SoS rely on were they to decide AEoI for razorbill and guillemot on the FFC SPA? Justify your response with evidence.	The RSPB does not believe that a single value can be used in assessment for displacement and mortality rates and believes that the use of a range of values follows the correct application of the precautionary principle. As such, we consider that the approach advocated by Natural England to be a measured and reasonable response to the considerable uncertainty inherent in the assessment procedure and that the spurious accuracy of single estimates of displacement and mortality is contrary to the European Commission's Precautionary Principle guidance. The precautionary principle exists for situations where scientific data does not exist or is incomplete and therefore it is not possible to complete a full evaluation of the possible risks a plan, project or activity may cause to the environment, including possible danger to humans, animal or plant health, or to the environment in general. The European Commission's Precautionary Principle Guidance[1] states that it should apply when a phenomenon, product or process may have a dangerous effect, identified by a scientific and objective evaluation, if this evaluation does not allow the risk to be determined with sufficient certainty. As such the degree of precaution applied to an

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52000DC0001&from=EN

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			evaluation, or assessment, can be seen to be directly proportional to the extent of scientific uncertainty inherent in that assessment. As the guidance goes on to recommend, "The implementation of an approach based on the precautionary principle should start with a scientific evaluation, as complete as possible, and where possible, identifying at each stage the degree of scientific uncertainty." As there can be "almost as many definitions of uncertainty as there are treatments of the subject"[2], following Masden et al. (2015)[3], the RSPB defines it as a lack of knowledge, or incomplete information about a particular subject. Masden et al., (*Ibid.*) and subsequently Searle et al. (2023)[4] identified a hierarchy of uncertainty in offshore wind farm assessment. This included not only the uncertainty arising from scientific knowledge but uncertainty arising more strategically from the process of assessment itself, such as uncertainty within language and decision-making. Included within this process, uncertainty can be considered as anything that increases the difficulty in reaching firm and robust conclusions, including linguistic uncertainty such as where doubt is raised as to the robustness of

[2] Argote, L. (1982). Input Uncertainty and Organizational Coordination in Hospital Emergency Units. Administrative Science Quarterly, 27(3), 420-434. doi:10.2307/2392320

[3] Masden, E. A., McCluskie, A., Owen, E., & Langston, R. H. (2015). Renewable energy developments in an uncertain world: the case of offshore wind and birds in the UK. Marine Policy, 51, 169-172.

[4] Searle, K. R., S. H. O'Brien, E. L. Jones, A. S. C. P. Cook, M. N. Trinder, R. M. McGregor, C. Donovan, A. McCluskie, F. Daunt, and A. Butler. "A framework for improving treatment of uncertainty in offshore wind assessments for protected marine birds." ICES Journal of Marine Science (2023): fsad025

ExQ1	Question to:	Question	RSPB response
			the evidence underpinning the recommended assessment process. Crucial to the understanding of the application of the precautionary principle to the assessment of offshore wind farms is the need for precaution to be proportional to the scientific uncertainty. As there is considerable uncertainty at each stage of the assessment process, so there is a need for a proportionate degree of precaution to be applied. The Applicant argues that because there is application of precaution at each stage of the assessment that this is multiplied throughout the stages of assessment. While it is true that precaution can be magnified by the process, if handled incorrectly, a framework of end-to-end uncertainty can overcome this problem, as advocated by Searle et al (2023)[5]. However, rather than adopt this approach, the Applicant focuses on criticising, and sometimes misinterpreting, the scientific advice of Natural England. A key example of this is in the discussion of displacement. The Applicant highlights what they consider the overly precautionary nature of the displacement and mortality rates advocated by Natural England, but do not acknowledge that these are the upper limits of a range of impact scenarios. The reason for this range is the amount of

[5] Searle, K. R., S. H. O'Brien, E. L. Jones, A. S. C. P. Cook, M. N. Trinder, R. M. McGregor, C. Donovan, A. McCluskie, F. Daunt, and A. Butler. "A framework for improving treatment of uncertainty in offshore wind assessments for protected marine birds." ICES Journal of Marine Science (2023): fsad025

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			uncertainty inherent in displacement analysis, and currently the most suitable means of incorporating this uncertainty is by using a range of values. Much of the uncertainty in displacement rates comes from the variability in recorded displacement rates, which a recent meta-analysis described for auks in multiple studies as being between 0-70% (Lamb et al, 2024).[6] This range of values will be due to a number of factors, but it is likely the main driver will be the inherent dynamism of the marine environment. As such, reliance on studies carried out at a single site, should be avoided. For example, Trinder et al., (2024)[7] reported no displacement of auk species within a single site, Beatrice wind farm in the Moray Firth, whereas the above meta-analysis across 15 sites with auks present, reported that 65% of these studies detected an effect. So, while the current advice is to use a range of displacement rates to capture this inherent variability, the Applicant has highlighted only the upper limits of the range in order to highlight a perceived overly precautionary approach, whereas the Lamb et al (2024) study highlights that these are within the probable range of displacement effects.

[6] Lamb, J., Gulka, J., Adams, E., Cook, A. and Williams, K.A., 2024. A synthetic analysis of post-construction displacement and attraction of marine birds at offshore wind energy installations. *Environmental Impact Assessment Review*, *108*, p.107611.

[7] Trinder, M., O'Brien, S. H., & Deimel, J. (2024). A new method for quantifying redistribution of seabirds within operational offshore wind farms finds no evidence of within-wind farm displacement. *Frontiers in Marine Science*, *11*, 1235061.

ExQ1	Question to:	Question	RSPB response
			However, the RSPB understands the difficulty in the use of ranges of values to inform what is essentially a binary decision; whether or not to consent a development. The inherent uncertainty in the prediction is crucial contextual information in interpreting model outputs and deciding on the significance of impacts. To aid the examination, the RSPB advises that three sets of displacement rates should be considered, the 50% rate favoured by the Applicant, a *plausible* range of 30-70% advocated by Natural England and what can be considered a *probable* value of 60%, as reflected in advice to offshore wind farm developments in Scottish waters. This latter value, in combination with the range of mortality rates described will give a contextual range of mortalities that reflect the uncertainty in displacement assessment. Mortality rates used in the assessment of displacement may be in some circumstances be under precautionary. Mortality rate can be considered to be the number of birds subject to displacement or barrier effects that will die as a consequence of those effects. The metric is applicable only to fully sized individuals and as such, the method does not account for any effects of breeding success. For long lived, low fecundity species like seabirds, the most likely response to additional stressors during the breeding season is the abandonment of a breeding attempt, or chick death through poor attendance. As such, the omission of chick mortality can be seen as a major limitation of

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			the assessment approach and demonstrates the need to take a precautionary approach in determining the range of mortalities that may arise through distributional responses to the presence of a wind farm. As data on the actual mortality rates arising as a consequence of distributional change as a result of displacement or barrier effects are scant, a comprehensive modelling approach was taken by Searle et al., 2014, the most comprehensive assessment of the effects of displacement and barrier effects from offshore wind farms on breeding seabirds. There is a further extension to the model, SeaBORD (Searle et al., 2018) which represented a significant improvement on the previous model. Crucially, the model incorporates both displacement and barrier effects and translates these into projections of adult annual survival and productivity (i.e. chick survival/mortality). Including a measure of chick mortality is a great improvement on the matrix approach, which only accounts for adult mortality. As described above, intuitively it makes far more biological sense for nest failure to be the consequence of the additive energetic costs of barrier and displacement effects, rather than direct mortality of the adult. However, even when considering only direct adult mortality, the SeaBORD model outputs for auks from one of the SPAs considered show mean increases to adult mortality for birds that were affected by both barrier and

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			displacement effects of between 0.33% and 5.66%. Despite these results being highly informative for assessment, the approach is constrained by only being applicable during the breeding season, so has not been widely adopted in England and Wales. To further aid the examination, the RSPB advises the use of three sets of mortality rates; the 1% rate favoured by the Applicant, a plausible range of 1-10% as advocated by Natural England; and what can be considered a *probable* range of 3-5% for the breeding season and 1-3% for the non-breeding season, as reflected in advice to offshore wind farm developments in Scottish waters. The RSPB presents these mortality and displacement rates as an aid to examination, this is not to contradict the position that the presentation of a range of displacement and mortality rates, as advocated by Natural England, can be considered to be the most appropriate way to describe the uncertainty inherent in the assessment of distributional responses to offshore wind farms. As such, it would be entirely wrong to characterise it as overly precautionary. The RSPB agrees with the apportioning values recommended by Natural England as these are reflective of the need for precaution due to the high levels of uncertainty inherent in this part of the assessment. The uncertainty arises in part through natural variability in overall bird usage of the area, in

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			connectivity of birds using the area and in the age structure of birds using the area. This variability will arise largely as a function of the inherent dynamism of the marine environment. The above highlights the complexities in understanding the potential impacts on birds in such an inherently dynamic system, the consequent uncertainty and the need for a precautionary approach. There are uncertainties at each of the stages of assessment, whether relating to data collection, which is subject to inherent variability and biases in measurement or modelled impact, which will always be a simplified abstraction of reality. All these elements of precaution must be considered in the assessment. As concluded by Searle et al (2023), "A failure to recognize or quantify these uncertainties in models and data results in poorly informed decision - making where the rationale is unclear, rather than providing transparent, objective, evidence-based decision-making informed by proportionate risk assessment".
OR.1.5	NE RSPB	**Seasonal abundance, apportioning and displacement risk for guillemot** Can you respond to the Applicants' statement in the RIAA [AS-085, paragraph 236] that based on NE's guidance to estimate seasonal abundance and apportioning for guillemot?	The distribution of seabirds at sea is neither evenly spread nor static. Digital Aerial Surveys capture a snapshot of bird usage of a relatively small area within the wider ocean in one moment of time. It does not capture the dynamism of the birds usage of the ocean, which will be influenced by both location of breeding areas and location of foraging sites. The

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		'…over 73% of the FFC SPA guillemot population is apparently present on all UK wind farms through the course of the year and at risk of displacement, despite the fact that offshore wind farms actually make up approximately 6% of the area within 300km of the FFC SPA…. It is not difficult to envisage that, with the addition of a small number of wind farms the current assessment methods could predict more birds are at risk of displacement than are present in the population.'	latter will be subject to a suite of drivers, including water depth, temperature, stratification, benthic substrates and oceanic currents. This means that the birds captured within the snapshot will be in constant movement across large areas of the ocean and it is entirely plausible that the birds will at some point be at risk of the consequences of distributional change in response to the presence of a number of, or even all, windfarms in the North Sea. It is somewhat misleading to imply that the recommended guidance means that 73% of the population will be present within a wind farm at a given point in time. An important source of uncertainty in assessment arises through turnover; that is, variation in space use over time between individuals, and patterns of nest attendance within breeding pairs. This means a key limitation in the current approaches to assessment is that estimates of abundance derived from at-sea survey data are liable to underestimate the true population of birds likely to be at risk of displacement and barrier effects from an offshore wind farm as a result of turnover. For instance, interactions between seabird populations and wind farms may be driven by a limited number of individuals from a population interacting frequently with a wind farm (large impacts on a small proportion of the population), as

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			indicated by Peschko et al. (2020[8]; 2021[9]) in guillemots and gannets, or alternatively by many individuals interacting only occasionally with an offshore renewable development (small impacts on a large proportion of the population), as indicated in kittiwakes by O'Hanlon et al. (2023)[10]. Quantifying and reducing this source of uncertainty requires empirical data on the turnover of individuals in key locations within and around wind farms and on how turnover is driven by the level of fidelity in foraging locations within and across individuals. It is therefore critical to estimating how wind farms may potentially generate population-level impacts through their impacts on individual birds. However, at-sea surveys do not collect individual-based data and so cannot capture information on temporal change at the individual level. As a consequence, the approaches used in assessments attempt to adjust for these uncertainties and potential under-estimates by, for example, when calculating inputs to the Displacement Matrix, using the seasonal maximum of monthly abundance estimates. This means that the estimates of usage can on first glance seem implausible (73% of the population present on 6% of

[8] Peschko, V., Mercker, M., and Garthe, S., 2020. Telemetry reveals strong effects of offshore wind farms on behaviour and habitat use of common guillemots (*Uria aalge*) during the breeding season. *Marine Biology*, 167, 118.

[9] Peschko, V., Mendel, B., Mercker, M., Dierschke, J. and Garthe, S., 2021. Northern gannets (*Morus bassanus*) are strongly affected by operating offshore wind farms during the breeding season. *Journal of Environmental Management*, 279, 111509

[10] O'Hanlon, N. J., C. B. Thaxter, G. D. Clewley, J. G. Davies, E. M. Humphreys, P. I. Miller, C. J. Pollock, J. Shamoun-Baranes, E. Weston, and A. S. C. P. Cook. "Challenges in quantifying the responses of Black-legged Kittiwakes Rissa tridactyla to habitat variables and local stressors due to individual variation." *Bird Study* 71, no. 1 (2024): 48-64.

ExQ1	Question to:	Question	RSPB response
			the sea!), but in the context of the dynamic nature of seabird distributions and the issues around turnover, represent an appropriate method to account for uncertainty and provide a proportionate level of precaution.
OR.1.6	NE RSPB	**Seasonal abundance, apportioning and displacement risk for razorbill** Can you respond to the Applicants' comment in the RIAA [AS-085, paragraph 314] that based on NE's guidance to estimate seasonal abundance and apportioning for Razorbill? '*…suggests that 40% of the FFC SPA razorbill population is apparently present on UK wind farms through the course of the year and at risk of displacement. This highlights the precautionary basis of the methods used to estimate seasonal abundance and apportioning since offshore wind farms make up approximately 6% of the area within 300km of the FFC SPA… Indeed, it is not difficult to envisage that, with the addition of a small number of wind farms the current assessment methods could predict more birds are at risk of displacement than are present in the population.'*	Please refer to the RSPB's response to OR.1.5. above.
OR.1.9	The Applicants NE RSPB	**PVAs** 1. Are NE and the RSPB satisfied with the PVAs undertaken for kittiwake from the FFC SPA and presented by the Applicants in the RIAA [AS-085]? Can you explain your response? 2. Can the Applicants respond to NE's advice [AS-159] that you should:	The RSPB acknowledge that the Applicant has provided an updated PVA in Annex A of RIAA HRA Part 4 of 4 – Marine Ornithological Features (Revision 3) [AS-085], that to some extent supersedes the version that NE's advice is related to.

ExQ1	Question to:	Question	RSPB response
		a) Check the results of all PVA scenarios run for the assessment? b) Use the most recent population estimate for kittiwake at the FFC SPA as the starting population for PVAs run for this population? c) Clearly present the inputs and outputs for all PVA scenarios so that the specification and parameterisation of the models can be fully understood and assessed, including the log files for all PVA scenarios undertaken? d) Consider realistic assessments of current and future seabird population trends, considering all relevant evidence, when assessing the significance of the predicted impacts of the projects, such as the approach taken by Sheringham and Dudgeon Extension Projects Offshore Wind Farm (OWF) Development Consent Order (DCO) application in considering a range of potential future growth rates?	However we note from the Applicant response in REP3-027 that they are carrying out further review of their results and will report on this review at Deadline 4. The RSPB will respond fully to this question after we have the opportunity to review the relevant Applicant's submissions at Deadline 4. The RSPB do however agree with the Applicant that as the kittiwake population of the Flamborough and Filey Coast SPA is already subject to Adverse Effect on Integrity due to in-combination impacts, the results of the PVA will not materially affect conclusions as to the significance of impacts.
OR.1.18	NE RSPB	**Kittiwake compensation quantum** 1. Can you provide comment on the Applicants' apportioned impact as presented in the RIAA [AS-085] and Project-level Kittiwake Compensation Plan [REP2-010]? 2. Could NE elaborate on the evidence for the case of using the upper 95% upper confidence limit vs the mean, and 100% vs 53% adult apportionment?	The RSPB welcomes the Applicants presentation of apportioned impacts both in alignment with Natural England's advice, with 100% adult apportioning to SPA colonies, and using their own, preferred, stable age structure approach. The RSPB agree with the approach of 100% SPA apportionment and believe it to provide a level of precaution proportionate to the extent of uncertainty. The RSPB also agree with Natural England's recommended approach of using 95% upper

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			confidence limits as opposed to the mean as this provides a level of precaution proportionate to the extent of uncertainty.
OR.1.37	The Applicants NE MMO RSPB	**NPS EN-3 in relation to offshore ornithology** Looking at the evidence in front of the Examination at this time, what is your position in respect of the following tests in NPS EN-3 (which the ExA must consider in its recommendation to the SoS)? a) *'The Secretary of State may consider that monitoring of any impact is appropriate owing to the complex nature of offshore wind development, and the difficulty in establishing the evidence base for marine environmental recovery'.* NPS EN-3 paragraph 2.8.296. b) *'The Secretary of State must be satisfied that displacement assessments have been conducted to a satisfactory standard having had regard to the advice from the relevant statutory advisor'.* NPS EN-3 paragraph 2.8.315. c) *'The conservation status of seabirds is of relevance and the Secretary of State should take into account the views of the relevant statutory advisors and be satisfied that cumulative and in-combination impacts on seabird species have been considered'.* NPS EN-3 paragraph 2.8.316.	(a) The RSPB highlight the monitoring work being carried out in the Forth and Tay region of Scotland, overseen by the Forth and Tay Regional Advisory Group, as being the standard of monitoring that should be aspired to. This work includes: • Digital Aerial Survey, pre, during, and post construction; • Enhanced monitoring at SPA colonies potentially impacted; • Tagging and tracking of seabirds from impacted SPA colonies; • An integrated radar and camera monitoring system to record seabird reactive behaviour in the vicinity of turbines and collision events. (b) The RSPB notes that Natural England, as the relevant statutory adviser, has referred to its outstanding concerns with the in-combination and cumulative assessments (OR.1.37, REP3-057). The RSPB also highlight our own concerns, and the need for precaution in assessment, as described above. (c) The RSPB notes that Natural England, as the relevant statutory adviser, has referred to its outstanding concerns with the in-combination and cumulative assessments (OR.1.37, REP3-

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			057). The RSPB also refers the Examining Authority to its answer to OR.1.41 (REP3-066) in relation to the importance of understanding the population level status of relevant species of seabird. This provides general background to help understand the conservation importance and status of an SPA's breeding seabird features, placing the predicted impacts in proper context.
OR.1.50	NE RSPB The Wildlife Trusts	**Collision risk modelling and associated parameters in the draft DCO** Following on from written question OR.1.50, do you believe the rotor wind swept area should be included as a parameter in the draft DCO as per other made orders for other offshore windfarms such as Sheringham and Dudgeon and Awel y Môr?	The RSPB agree with Natural England that that the maximum rotor swept area should be secured in the DCO, as has been done on other offshore wind farm projects such as Sheringham and Dudgeon and Awel-y Môr. Any changes to the rotor swept area would affect all collision impacts, but particularly for kittiwake from FFC SPA, which is already subject to Adverse Effect on Integrity due to in-combination impacts.
OR.1.52	The Applicants NE RSPB	**New research findings** At least two scientific research papers that may be relevant to the offshore ornithology assessment have been published since the submission of the application - do either of these or any other recent research have any implications for the assessments reported by the Applicant for the EIA and HRA? (1: Davies, JG *et al*, Influence of wind on kittiwake *Rissa tridactyla* flight and offshore wind turbine collision risk. Marine Biology **171**, 191 (2024). 2: Pollock, CJ *et al*, Avoidance and attraction responses of kittiwakes to three offshore wind farms in the North Sea. Marine Biology **171**, 217 (2024).)	The RSPB welcome both these research papers. They report on valuable, rigorously designed research, carried out and reported well, using advanced technological and analytical methodologies. However, both papers highlight that current assessment methods are a simplification of a complex situation, and while they highlight and inform our understanding of that complexity, the results cannot be immediately incorporated into these assessment methods, a point explicitly acknowledged by the authors of Pollock et al. who say the results cannot "*feed directly into the way current impacts are assessed, due to their behaviours*

ExQ1	Question to:	Question	RSPB response
			being more nuanced than such assessments allow for". Both papers describe the complexity and nuance of kittiwake reactive responses to the presence of turbines and highlight the consequent uncertainty in impact prediction. These conclusions highlight the need for precaution in assessment, as a proportionate response to the uncertainty arising though variability in behaviours. Other recent and relevant research paper are included in above responses.