DBS Offshore Wind

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

The Applicants' Responses to RSPB's Deadline 3 Additional Submission

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Contents

Tables

Glossary

Term	Definition
Collision	The act or process of colliding (crashing) between two moving objects.
Habitats Regulations Assessment (HRA)	The process that determines whether or not a plan or project may have an adverse effect on the integrity of a European Site or European Offshore Marine Site.
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).

Acronyms

Term	Definition
ANS	Artificial Nesting Structure
BTO	British Trust for Ornithology
COWSC	Collaboration on Offshore Wind Strategic Compensation
DAS	Digital Aerial Survey
DBS	Dogger Bank South
ExA	Examining Authority
ES	Environmental Statement
ExQ	Examining Authority Questions
FFC SPA	Flamborough and Filey Coast Special Protection Area
HPAI	Highly Pathogenic Avian Influenza
HRA	Habitats Regulations Assessment
NE	Natural England
QA	Quality Assurance
RR	Relevant Representation
RSPB	Royal Society for the Protection of Birds
WR	Written Representation

1 Introduction

1. This document presents the Applicants' responses to the Royal Society for the Protection of Birds (RSPB's) **Response to the Examining Authority's First Written Questions (ExQ1) questions OR.1.12, OR.1.15, OR.1.28, OR.1.31, OR.1.40 and OR.1.51** [AS-173]. The Applicants response to OR 1.51 has been split into responses 1.51 a) to 1.51 e) in this document for ease of reference.

2. The Applicants provided comments to the RSPB's previous responses to the **Examining Authority's First Written Questions (ExQ1)** [REP3-066] at Deadline 4. Due to the late submission of the RSPB's document on the 3rd of April, after the close of Deadline 3, the Applicants delayed responding to these points until Deadline 5 to allow for more considered responses to be provided.

1.1 RSPB

Table 1-1 – The Applicants' Comments on RSPB's Responses to EXQ1 [AS-173]

I.D.	Question	RSPB Response	Applicants' Response
Offshore and intertidal ornithology and relevant Habitats Regulations Assessment (HRA) aspects			
AS-173: OR.1.12	**Kittiwake and auk compensation quantum** The ExA notes that Appendix H1 to NE's Deadline 1 Submission, NE's Advice on Seabird Compensation Calculations [REP1-065], maintains its advice that the Hornsea 3 Stage 2 method should be used for all compensatory measures where it is necessary to calculate the requirement in terms of the number of breeding pairs as it is considered the most ecologically realistic. 1.Can you provide a response to the Applicants' statement [REP1-049] and [AS-158] that the Hornsea Three Stage 2 method recommended by NE to be used to calculate the scale of kittiwake and auk compensation required is unsuitable as: i) the method is not freely available in full such that it can be readily replicated; ii) it is unnecessarily complicated and extremely difficult to interpret; and iii) results in double-counting of the effects of mortality and thus an overestimation of compensation quantum? 2.Can you provide a response to the Applicants' concern in their Deadline 2 cover letter [AS-158] that the Hornsea 3 stage 2 method was developed for kittiwake, a species for which there is demographic information available which is not available for auks.	Answer to (1) and (2) The RSPB has reviewed Natural England's answer to question OR.1.12 (REP3-057) and agrees with its response that: -the Hornsea 3 Part 2 method is the most ecologically complete for compensatory measures where it is necessary to calculate the number of breeding pairs required to compensate for a specified mortality impact; and -In respect of calculating the compensation requirements for auks, the RSPB notes that it is a member of the COWSC Offshore ANS Implementation Group and, through this, has had sight of a draft of the BTO report on compensation calculations referred to by Natural England. They conclude that the approaches reviewed for Kittiwake could be applied for other species but note that the demographic information available to construct models will vary between species. Given this the RSPB is content that the NE response be followed here i.e. using the Hornsea 4 method with associated stipulations (based on upper 95% confident limit impact values and with an appropriate compensation ratio to address uncertainty in success of the measure).	The Applicants have provided compensation calculations in line with Natural England's advice on this matter (REP4-020 and REP4-024) and therefore consider this matter is not a source of ongoing disagreement between the parties.
AS-173: OR.1.15	**Kittiwake and auk compensation quantum** 1.Can the Applicants provide compensation quanta at ratios of 1:1, 1:2 and 1:3 for kittiwake, guillemot and razorbill according to both the Hornsea 3 part 2 and Hornsea 4 approaches, as advised by NE [AS-160] and in its Risk and Issue Log [AS-161, point H6]? This is required so that the SoS has the complete information in order to make a decision on the compensation quanta required if they were to decide AEoI	The RSPB's general position on ratios is set out under "Extent" in Table 1, Section 5 of its Written Representation (REP1-087) i.e.: "Any identified uncertainty in success should be factored in to increased ratios. 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 to address uncertainty risks giving a false level of confidence."	The Applicants have provided compensation calculations with the application of ratios of 1:1, 1:2 and 1:3 as requested by Natural England and the Applicants have provided their rationale and basis for what they consider to be appropriate ratios. With respect to specific details, the kittiwake compensation measure is secured and will be delivered through the construction of an offshore Artificial Nest Structure (ANS) for which candidate locations have been submitted in **Appendix 1 - Project-Level Kittiwake Compensation Plan (Revision 5)** [REP4-020]. For guillemot and razorbill, the agreed measure is predator eradication/reduction. Both the strategic route for delivery the Isles of Scilly (as detailed in **Appendix 2 -**

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	2.Which compensation ratio do NE and the RSPB believe should be applied for each of these species?	Therefore, the RSPB supports the response to this question provided by Natural England (REP3-057) that a compensation ratio should be set on a case-by-case basis following the considerations set out by them. We particularly highlight NE's point: "We further note that ratios are only one way of addressing the uncertainty associated with measuring success and consider that well-designed and located measures based on agreed targets, with appropriate associated monitoring plans, may be a surer way to achieve success." The RSPB strongly agrees that ratios are not an alternative to well thought out, well evidenced and carefully designed compensation measures. Uncertainty in likelihood of ecologically successful delivery should be reduced as far as is practicable first, then ratios set based on any residual uncertainty. Ratios will usually need to be more than 1:1, as there will remain some uncertainty even when this has been minimised as far as possible. Given the lack of specific details associated with either the Kittiwake or Auk compensation measures, we cannot advise on an appropriate ratio for either species at this time. For example, we refer to our answer on OR.1.29 (REP3-066) in respect of the current lack of evidence in respect of the Applicant's auk compensation measures.	**Guillemot [and Razorbill] Compensation Plan (Revision 5)** [document reference 6.2.2] for which the Applicants have conducted feasibility work (including site surveys as detailed in the **Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment** [REP4-097]) and Project-led options are being considered by the Applicants. See the **Appendix 2 - Guillemot [and Razorbill] Compensation Plan (Revision 5)** [document reference 6.2.2] submitted at Deadline 5.
AS-173: OR.1.28	**Dealing with any accrued compensation deficit** Section 6.3.6, paragraph 205 of the Project-Level Kittiwake Compensation Plan [REP2-010] refers to the concept of 'compensation deficit accrued' should there be a delay to the delivery of the offshore ANS for kittiwakes. The Applicants suggest that this would be so small that it would be paid off over the lifespan of the Proposed Development, or that the scale of compensation could be increased, or alternative measures could be relied on to offset any deficit accumulated during the early years of operation. 1.Can the Applicants provide an update to refine their position on this and provide quantitative evidence to support their confidence for a worst-case delay between the commencement of operation of the Proposed Development and the availability of compensation measures? 2.Does the confidence equally apply to the scenario for the development of two offshore array sites simultaneously rather just one or the other, for one or	The RSPB refers to its response to OR.1.26 (REP3-066) and notes that the Applicant did not set out any further detail in respect of the foreseeable risks in its response to OR.1.24 and how it would mitigate those in order to avoid the need for further changes as experienced by Hornsea Four. As we noted in our response to OR.1.26, four full breeding seasons is an acknowledgement of the need to mitigate some of the risk arising from the predicted adverse impact occurring immediately upon first operation and of there being both an inherent delay in the compensation working, and the risk of it not working or not working successfully. It does not remove all risk. Even if successful it is likely to take many years for the ANS population to grow to sufficient size that it begins to offset fully the predicted annual mortality of kittiwakes. Therefore, the RSPB remains of the view that the offshore ANS should be provided four full breeding seasons before operation of the first turbine.	The Applicants refer RSPB to **Reduction in Kittiwake Breeding Seasons Prior to Artificial Nesting Structure Installation (Revision 2)** [REP4-083] which sets out in comprehensive detail the logistical challenges which make delivering an offshore ANS four years prior to operation infeasible. **Reduction in Kittiwake Breeding Seasons Prior to Artificial Nesting Structure Installation (Revision 2)** [REP4-083] demonstrates that, even at low colonisation rates and low productivity, the ANS would adequately compensate the lifetime collision mortality of the Projects, in most scenarios. In the worst case scenarios, the ANS would be unlikely to compensate for the lifetime collision mortality as calculated, whether the structure is installed either two, or four years in advance of wind farm operation. Given that most scenarios show the measure adequately compensating, as well as the presence of the onshore tower, and the potential option for adaptive management, the Applicants are confident that a reduction in breeding seasons from four to two ahead of operation does not materially affect the delivery of the compensation requirement and furthermore, is necessary to ensure the security of the Projects.

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	two offshore ANSs, and if only two or three breeding seasons were stipulated in any Requirement to provide compensation ahead of operation, rather than four? If so, demonstrate why. 3.Do NE and the RSPB wish to provide anything further in relation to the timing of the implementation of compensation or the compensation deficit accrued?		
AS-173: OR.1.31	**Connectivity between the proposed sites and the FFC SPA and the National Site Network** Whilst welcoming the Applicants' assessment of connectivity with the National Site Network that was included in the Guillemot and Razorbill Compensation Plan [AS-089], NE states [AS-160] that, whilst there is a pathway from the potential sites of Worms Head and Middle Mouse for birds to recruit and contribute to the National Site Network, it is likely to be limited, and this uncertainty should be reflected in the level of compensation provision. 1.Can the Applicants, RSPB and the Wildlife Trusts suggest a suitable factor to be applied to the compensation quanta to account for this level of uncertainty? 2.Can NE advise a factor to be applied to the compensation quanta to account for this level of uncertainty?	Please see our answer to OR.1.15 above. We agree with Natural England's answer to this question (REP3-057) in respect of the critical questions with respect to both Worms Head and Middle Mouse i.e. (i) are rats present at each location? and (ii) if they are, are they having any meaningful impact on Guillemot and/or Razorbill populations? This aligns with the concerns relating to each location set out in section 6 the RSPB's Written Representation (REP1-087), which also adds whether control of any rats present would have a beneficial impact on the populations of Guillemot and/or Razorbill, and whether that would be sufficient to compensate for the impacts of the Dogger Bank South project. Therefore, the RSPB is not in a position to advise on a suitable factor (ratio) to be applied to the compensation quanta to account for the level of uncertainty associated with the connectivity of each site with the UK National Site Network for each species. As a general principle, and in line with our response to OR.1.15 above, consideration of ratios in this context should consider what proportion of birds resulting from the compensation are expected to recruit into the National Site Network. If this is considered to be low and is highly uncertain, then more compensation should be delivered. We set this against our general approach to ratios set out in our Written Representation and repeated in our answer to OR.1.15 above.	The Applicants acknowledge RSPB's position on the application of ratios and have addressed this in the response to OR.1.15. With regards to the 'critical questions' the Applicants have undertaken surveys which found that rats are present on Worms Head but were inconclusive for Middle Mouse. These are reported within the **Guillemot and Razorbill Compensation Site Shortlist Refinement Report (Redacted) (Revision 2)** [REP3-019]. Worms Head is no longer available to the Applicants as a project-led compensation site and therefore no further surveys will be undertaken at this location. Further surveys at Middle Mouse can only be undertaken after the seabird breeding season, to avoid disturbance, therefore the Applicants will reassess the need for further surveys at this location closer to that time. See the **Appendix 2 - Guillemot [and Razorbill] Compensation Plan (Revision 5)** [document reference 6.2.2] submitted at Deadline 5
AS-173: OR.1.40	**Consideration of Highly Pathogenic Avian Influenza (HPAI) in the assessment of effects on marine bird species** The Applicants have added a section to consider how HPAI has been considered in the assessment of effects on marine bird species into Chapter 12 of the ES [AS-057, section 12.5.2]. Has this adequately addressed your concerns on this issue? If not, what is outstanding and what could the Applicants do to address your remaining concerns?	The RSPB set out three key points to consider with respect to how HPAI could affect the assessment (REP1-087, para 4.30): "Consideration of how the HPAI outbreak will influence the representativeness of the baseline characterisation. This should include the direct influence of population size and through changes in space use; -Alterations of the extent of interactions with wind farms, potentially related to physiological changes, and in the lethal and sub-lethal consequences of those interactions; and	The Applicants consider they have set out their position on this matter (e.g. REP2-057, REP3-028, REP4-087) and where they remain in disagreement with the RSPB's and Natural England's positions. Please note that the Applicants have presented the assessment in line with Natural England's advice and, the above disagreements notwithstanding, the Applicants do not think that agreement is likely to be reached between the parties on this matter. Furthermore, Natural England (REP3-057) has stated: *Natural England considers that sufficient information has been included with respect to HPAI, however we disagree with the Applicant's characterisation of HPAI impacts. We do not consider any further action is required by the Applicant to address this.*

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		-Consequences in changes in the robustness of protected population to additional mortality arising through the presence of wind farms. " The Applicant has considered the first point above with the additional section to the revised relevant ES chapter (Chapter 12 of the ES [AS-057, section 12.5.2]). Their analysis sets the survey results in the context of other datasets on seabird abundances in this region and compares their survey data between pre- and post- HPAI outbreak. The second two points are not considered in this section and will still need to be considered when evaluating the assessment. In their response to question OR.1.41 Part (3) (see page 48, REP3-057) NE have set out their concerns to the Examining Authority on how HPAI impacts are considered. We agree with them that "…the impacts of HPAI and the potential for future population impacts highlights the need for precaution when assessing the significance of impacts of additional pressures such as offshore wind farms."	
AS-173: OR.1.51a	**Digital aerial survey methodology** In its RR [RR-049] and again in its WR [REP1-087], the RSPB raised a number of concerns about a perceived lack of methodological detail in relation to the digital aerial survey, and further signposting was provided by the Applicants in response [PDA-013]. Are there any matters outstanding in relation to this? If so, please state what they are and how they could be resolved by the close of the Examination.	The RSPB welcomes the Applicant's detailed responses to the points raised. While these go some way to addressing our original points, we have these remaining concerns: 1. The Applicant asserts that their DAS methods used follow those that have been standard "over the last >10 years and have followed the statutory guidance in these matters". The NatureScot review [redacted] was published January 2023. Therefore, it was produced after the most recent version of NE's guidance around baseline site characterisation (Parker et al. 2022, v1.1. published July 2022[1]). As such, current statutory guidance in England does not yet reflect the findings of the NatureScot review. The review was published after the majority of the Applicant's Digital Aerial Survey's had been completed (conducted between March 2021 – February 2023), however, it is still relevant in interpretation of the data collected and how methods are presented.	1. The Applicants followed the relevant statutory guidance (Parker *et al.* 2022) and contrary to the RSPB's suggestion that this does 'not yet' reflect the findings of the review to which they refer, there is no certainty that the Natural England guidance will in fact be updated in this regard. Furthermore, it is necessary to adopt a pragmatic approach to data collection, analysis and assessment in the face of emerging guidance and it is not realistic to expect updates to be conducted whenever new studies become available. In addition, the methods used are well established and have been used for offshore wind farm application assessments for at least ten years. Therefore, the Applicants consider the RSPB's suggestion that updates should be applied at this stage in the application to be both unhelpful and inappropriate, especially as the Applicants have followed the statutory advice provided by Natural England on this matter.
AS-173: OR.1.51b		2. We noted "Insufficient consideration of potential biases in the survey and analysis methods." The Applicant details the Quality Assurance (QA) process used by the survey operator (APEM). This goes some way to addressing our concerns around analysis methods. However, this QA process only accounts for potential biases or inconsistencies between	2. The survey method used was a grid-based approach which samples the survey area more evenly when compared to transect surveys and is less prone to missing areas of possible significance. A more even coverage of the survey area is especially important in the detection of species with a significant flocking tendency. Flocks located within gaps between transects may not be detected and so reduce the

[1] Parker, J., Banks, A., Fawcett, A., Axelsson, M., Rowell, H., Allen, S., Ludgate, C., Humphrey, O., Baker, A. & Copley, V. (2022). Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase I: Expectations for pre-application baseline data for designated nature conservation and landscape receptors to support offshore wind applications. Natural England. Version 1.1. 79 pp.

I.D.	Question	RSPB Response	Applicants' Response
		those processing the images (from what we understand this is a manual process with analysts tagging birds on images then adding metadata such as species identity). As such the Applicant has not addressed potential biases in the survey methods themselves, e.g. if resolution or image quality are insufficient for high detection rates for small or more cryptic species. As such this point is outstanding.	reliability of the population estimate. In a transect-based digital aerial survey, image footprints are connected along continuous transect lines. Each transect should therefore be treated statistically as a single data point. When using a grid-based survey design, images are collected in the same way as for a transect survey (i.e. abutting images along a transect) however images are then selected from the transect to create a grid. Grid cells are separated from each other, and each can therefore be treated as a separate and individual sample. The number of data points collected is therefore much greater, enabling greater confidence and precision in the resulting population estimates. The independence of the cells can be formally tested for to ensure that there is no pseudo-replication. Quality assurance during data capture includes both onboard and survey-wide procedures. An APEM-employed camera technician is present on each flight to continuously monitor imagery, adjust exposure settings as needed, ensure systems remain operational, confirm all images are captured to provide the required coverage and verify that the aircraft remains on transect. For multi-day surveys, such as those sometimes conducted in the Central North Sea, weather conditions are carefully assessed to allow for consecutive survey days. If imagery does not meet the required standards, partial or full transects are re-flown, ideally the following day. If the survey cannot be completed within seven days, the entire survey is re-flown to maintain data consistency. APEM have confirmed that they identify targets to species level only where there is high confidence in the underlying data. The Image Analysis team at APEM, with over ten years' experience in identifying species from aerial imagery, conducted the majority of the assessment work for the Projects. However, APEM also draw on a wider pool of experts, including specialist marine mammal analysts—some of whom have worked with Regulators—as well as ornithologists with strong credentials in species identification. APEM has acknowledged that detection of small or cryptic species is a valid concern. In their experience, using higher-resolution imagery such as 1.5cm ground sampling distance, as per the Projects' assessment, does improve detection rates. This is one of the reasons APEM advocate for higher-resolution surveys where key species like storm petrel are a focus. Furthermore, APEM's QA procedures (as previously described in the **Response to RSPB comments on Digital Aerial Surveys** [REP3-029] submitted at Deadline 3) ensures that all targets are detected within imagery. APEM has recently held workshops with NatureScot and Natural England to present their full methodology and have noted they would be willing to run a similar session with RSPB if this would be beneficial in understanding their survey methods and answer any questions in further detail.
AS-173: OR.1.51c		3. Regarding spatial autocorrelation, the Applicant refers to an analysis presented within the Five Estuaries application and states that "the method used for the Projects is identical to this". While this provides	3. The Applicants acknowledge that the survey methods used were not in fact identical and provide clarification below. While both projects used digital aerial

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		useful context, the level and nature of autocorrelation will be site and species specific. As such this does not fully address this point: "The assessment should explicitly demonstrate an analysis of the data showing whether spatial autocorrelation is present or not." The RSPB request clarification on the point that methods used are identical: from what we understand Five Estuaries used strip transect surveys rather than the grid approach used here.	surveys, the analysis methods differ due to the use of a **transect-based design** in Five Estuaries and a **grid-based design** in Dogger Bank South. Transect-based designs involve continuous strips of abutting imagery, enabling high survey coverage over a short period and offering some comparability with traditional boat-based transects. However, this approach has limitations. It is more sensitive to **spatial heterogeneity,** meaning it may not fully capture the variation in bird distribution particularly for flocking species, which may go undetected if located between transects. As transects are continuous, they are typically treated as single data points, which reduces the number of independent observations and results in less robust population estimates. There is also a risk of **oversampling or double-counting,** and this design is less flexible if wind farm boundaries change, as transects are not easily repositioned. In contrast, grid-based designs use a quadrat-style layout that divides the survey area into **spatially independent samples of populations.** This dramatically increases the number of independent data points, improving the statistical confidence and accuracy of abundance estimates. Grid designs sample the area more evenly, making them more resilient to spatial heterogeneity and better at detecting flocks across the full survey area. They also allow for greater flexibility if survey boundaries change. For these reasons, APEM recommends the grid-based DAS approach, which is widely used by offshore wind developers, including the Applicants for the Projects, and aligns with current best practice across the sector. It is important to note that while the designs are referred to as "grid" and "transect," in both cases for APEM's methodology, surveys are flown along transect lines. For grid-based surveys, imagery is collected along transects and then sampled post-flight to fit a grid layout, allowing for the statistical advantages of grid sampling while maintaining the efficiency of transect flying. In addition, it is important to note that the Five Estuaries data were analysed by a different company and calculation of abundance estimates referenced by Five Estuaries differs to how APEM's team has calculated abundances at the time of analysis for Dogger Bank South. For grid-based surveys such as those flown for Dogger Bank South, each node (i.e. each set of three abutting images taken at the same time) is considered an independent unit for resampling, resulting in higher sample units and a more robust approach to calculating abundance estimates. As noted above, APEM have noted they would be willing to run a similar session with RSPB if this would be beneficial in understanding their survey methods and answer any questions in further detail.
AS-173: OR.1.51d		4. We noted that while the data undergoes internal QA by the survey provider, there is "no detail of any independent external quality assurance appears to have been carried out". The Applicant accepts this and notes the NE guidance (Parker et al. 2022) does not include a requirement for external quality assurance. We think this statement does not fully reflect the NE guidance which notes: "Increasing clarity on the validation of data	4. The Applicants' survey contractor's (APEM's) identifications are based on high confidence identifications. All judgement on identifications is evidenced-based with respect to survey conditions/quality variations and are also grounded on sound knowledge of species phenology, behaviour and ecology.

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		and results would increase overall confidence in the dataset and provide assurance in the interpretation, which could reduce the need for precaution during examination." While that does not specifically suggest a need for external QA it does raise the need for increased clarity on QA and data validation – an obvious way of doing this would be to introduce independent external QA.	APEM's team of image analysts are hand-picked based on their skills and experience and then receive further ongoing training from their experienced QA team to ensure they provide excellent quality. In addition, APEM's analysts receive on-going training in identification from APEM's internal QA Manager. These analysts also have access to the in-house Image Archive Library, which is regularly updated. This is a comprehensive guide compiled from previously identified individuals in aerial images. Analysts also measure the body length and wingspan (for birds) as input parameters for species identification. On-going advances in digital imagery have removed many of the uncertainties in species identification that have existed in the past through poor resolution and image smear. With respect to independent validation of data, the Applicants consider that the RSPB should engage with Natural England directly if they consider there to be a need for the latter's guidance to be revised and made more explicit.
AS-173: OR.1.51e		5. We welcome inclusion of the survey timings (Table 1-2). The surveys are primarily conducted during late morning and the middle of the day. As such this does raise concerns on the extent that any diel variation in bird activity was sufficiently captured in the survey data. Particularly for the Summer months there does not appear to be data collected in the hours around sunrise and sunset, which are periods when foraging activity is often at its highest for seabirds. Therefore, we consider it would be helpful for the Applicant to set out its views of the implications of this for how ES (and HRA) findings should be interpreted and what level of precaution should be applied.	With respect to the timing of aerial surveys, given the location and size of the two sites and the need to balance data collection with safe flying requirements, there are limits to the survey window that can be flown. Furthermore, obtaining high quality aerial survey images when the sun is lower in the sky is also challenging and would run the risk that survey data would be compromised. However, the distance of the wind farms from the coast (and hence breeding colonies) also affects the seabirds. The wind farms are too far offshore (from the nearest coastline DBS West is approximately 100-130km offshore and DBS East is approximately 120-145km offshore) for most species to make regular usage of, and this can be seen in the lower abundances recorded in the breeding months. As the Applicants have submitted elsewhere, it is very likely that a large proportion of the birds recorded during the breeding season are in fact nonbreeding birds (either sub-adult age classes or birds on sabbatical years). While pairs may show a dawn peak in changeover at the nest during incubation (e.g. Coulson 2011) this does not necessarily mean that their at sea activity follows the same pattern. In addition, as their chicks get larger and require increasingly frequent provisioning of food, the adults must forage more or less round the clock with a reduction in the presence of any apparent peaks in activity. In the nonbreeding season seabirds are not constrained to return to land and while they may forage more actively at certain times of day, they will also remain present in offshore areas outside periods of active foraging. Finally, the purpose of undertaking monthly aerial surveys for a two year period is to obtain representative data on seabird activity at the site, rather than peaks. The Applicants consider that the aerial surveys, conducted between 9am and 5pm across the survey campaign, provide this. In addition, it is important to note that the surveys were conducted in accordance with Natural England's guidance (Parker *et al.* 2021), and this does not make any recommendations about survey timing (with the exception of locations at which particular species such as Manx shearwater may be present – but that is not the case with DBS).

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