



**NORTH FALLS**

*Offshore Wind Farm*

# **HRA Derogation: Provision of Evidence**

Annex 1A HRA Compensation Consultation

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## Glossary of Acronyms

AEol	Adverse effect on integrity
AOE	Alde-Ore Estuary
CRM	Collision Risk Modelling
DCO	Development Consent Order
Defra	Department for Environment, Food & Rural Affairs.
DEP	Dudgeon Extension Project
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
FFC	Flamborough and Filey Coast
HAT	Highest Astronomical Tide
HRA	Habitats Regulation Assessment
IFCA	Inshore Fisheries and Conservation Authorities
LBBG	Lesser black-backed gull
MMO	Marine Management Organisation
MPA	Marine Protected Area
MHWS	Mean High Water Spring
NE	Natural England
NSN	National Site Network
OTE	Outer Thames Estuary
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
RTD	Red-throated diver
SAC	Special Areas of Conservation
SACO	Supplementary Advice on Conservation Objectives
SEP	Sheringham Shoal Extension Project
SNCB	Statutory Nature Conservation Body's
SPA	Special Protection Area
SSSI	Sites of special scientific interest

## Glossary of Terminology

Array area	The offshore wind farm area, within which the wind turbine generators, array cables, platform interconnector cable, offshore substation platform(s) and/or offshore converter platform will be located.
European Site	Any site which would be included within the definition at Regulation 8 of the Conservation of Habitats and Species Regulations 2017 and Regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017 for the purpose of those regulations, including candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation, Special Protection Areas and any relevant marine sites.
National Site Network	The network of European sites in the UK.
The Applicant	North Falls Offshore Wind Farm Limited (NFOW).
The Project or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.

## 1 Introduction

1. The Applicant has consulted extensively throughout the pre-application process. The process has involved the iterative development of the proposed compensatory measures in consultation with Natural England and the RSPB.
2. Feedback from consultation is detailed in Table 1, along with responses from the Applicant showing how this feedback has been used to inform the development of the compensatory measures.

**Table 1.1 Compensation Consultation comments and responses**

Species	Date	Consultation	Comment	Applicant Response
Auks; Gannet; Lesser Black-backed Gull; Kittiwake; Red-throated Diver	17/03/2022	Offshore Ornithology Expert Topic Group Meeting March 2022	<p>Topics covered:</p> <ul style="list-style-type: none"> <li>- Project update, onshore site selection, national grid site selection, PEIR plan</li> <li>- Baseline data collection and analysis, increase in analysis coverage</li> <li>- RTD baseline results</li> <li>- RTD assessment (HRA)</li> <li>- RTD Assessment (EIA)</li> <li>- Compensation introduction</li> <li>- Compensation Kittiwake</li> <li>- Compensation LBBG</li> <li>- Compensation RTD</li> <li>- Scoping/Screening comments</li> </ul>	This meeting discussed the draft In Principal Options review and further written feedback was received from Natural England and RSPB, with the detailed feedback and responses to the written feedback discussed below. Feedback from this meeting and the subsequent written feedback has been considered in developing the compensation proposals.
N/A	22/03/2022	RSPB Review of in-principle compensation measures	The legal test on the appropriate authority is that the necessary compensatory measures must be secured – not can be secured. It is a higher standard.	The legal test (as set out in the Conservation of Offshore Marine Habitats and Species Regulations 2017) is: “The appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of [the national site network] is protected”. This will be secured through the Project’s DCO for the relevant species where an adverse effect on integrity is concluded in the Appropriate Assessment.
N/A	22/03/2022	RSPB Review of in-principle compensation measures	We advise that no reliance is placed on a consultation draft Defra consultation document setting out best practice guidance for developing compensatory measures in relation to Marine Protected Areas]. We consider it has several fundamental flaws in its approach, some of which we touch on immediately below. We are attaching a copy of the RSPB’s comments on the Defra consultation document so that you are aware of our concerns and how we will be approaching this issue.	RSPB’s position on the draft Defra (2021) compensatory measures document is noted. Defra has since released its Consultation on policies to inform updated guidance for Marine Protected Area (MPA) assessments (Defra, 2024b), in response to feedback on the 2021 draft guidance and an update to the guidance has not yet been released by Defra. The Applicant’s compensation proposals have been developed in consultation with RSPB and Natural England, with consideration of available guidance where applicable, including Defra, 2021 and 2024.
N/A	22/03/2022	RSPB Review of in-principle compensation measures	<p>Please note that the RSPB has objected strongly to this element of the Defra consultation document. Below is our comment on this point:</p> <p>“Our starting point is that we fundamentally disagree with the concept of compensation of “comparable ecological function” as defined in paragraph 49. Compensation must be targeted at the impacted feature(s) of the protected area and repairing the loss of coherence to the site network for the impacted feature(s). For the record, we are also concerned by use of the phrase “This is usually the same species, feature or habitat” in the definition of “Same ecological function” in paragraph 48. This appears to suggest that habitats and species are interchangeable: this is contrary to the need to recover declining species and habitats. One species or habitat cannot and should not be considered in place of another.</p> <p>We consider Defra’s suggested approach is unacceptable in respect of compensating for impacts on SPAs and SACs as it equates to “substitution”. In simple terms, a kittiwake does not provide “similar environmental benefit” to a guillemot or a gannet in respect of the coherence of the SPA network (the same can be said for different SAC features). We consider the suggested approach would undermine the purposes of the legislation to ensure the SPA or SAC network fulfils its role in helping to maintain each feature at favourable conservation status, is legally flawed and should be withdrawn from the guidance”</p>	As above
N/A	22/03/2022	RSPB Review of in-principle compensation measures	The RSPB rejects levels 3 and 4 [of the compensation hierarchy, Table 2.2] for the reasons given above and requests that they are deleted and no longer considered by the ETG/project. For reasons given above [these] should be rejected as unacceptable at this stage in discussions.	As above
N/A	22/03/2022	RSPB Review of in-principle compensation measures	[in relation to compensation options which may benefit a range of species, such as fisheries closure or management] However, the focus of the discussion must be on demonstrating the benefit to the impacted species (for the reasons given above)	This option is not considered further by the Applicant. However, should this or any other measure become available as a strategic option, the Applicant may give this further consideration.
N/A	22/03/2022	RSPB Review of in-principle compensation measures	[in relation to the timescale for securing compensation measures] However, the starting point must be to meet the objective of having fully ecologically functioning compensation in place in sufficient time to ensure: “the overall coherence of the National Site Network is protected” for the impacted species. This means that the loss of integrity to the National Site Network as a consequence of the plan or project is avoided. This affects lead in times for the compensation measures, reflecting the ecological requirements to be met.	Timing of the compensation proposals is described in the Lesser black-backed gull, Kittiwake, Red throated diver and Guillemot and Razorbill Compensation Documents (Document Reference: 7.2.2, 7.2.3, 7.2.4 and 7.2.5, respectively).
Lesser Black-backed Gull; Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[in relation to current status and specific targets for SPA qualifying features in Natural England’s designated sites view] We suggest these are incorporated here as highly relevant context. Both Kittiwake and LBBG have restore objectives which means there is a need for conservation (not compensation) measures designed to restore their SPA populations to a favourable level. This is directly relevant to the issue of additionality in respect of compensation. It is also directly relevant to the need to understand the pressures currently operating on those populations and which are the cause of any observed declines in productivity and population.	Consideration has been given to additionality in developing the compensation proposals, in consultation with Natural England and RSPB. None of the compensatory measures proposed by the Applicant are reasonably expected to be undertaken in the management of the relevant species, should North Falls not proceed and are therefore additional measures.

Species	Date	Consultation	Comment	Applicant Response
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[in relation to compensation seeking to offset the predicted mortality to the kittiwake breeding population at the SPA] Based on recent experience, we would recommend that there is very early discussion on how this “objective” can be proven and how that translates into detailed compensation objectives. These would then frame the search for possible compensation solutions. Important to start with what is “ecologically effective” to address the ecological functions affected by the predicted impacts. Please see p4-5 of our response to Defra’s consultation document. If we can reach agreement on that, it will help frame the discussion on possible compensation options, from which we can then apply a logical hierarchical approach, and apply any additional analysis that may help with that e.g. meta-population analysis. This applies to all species under consideration, not just kittiwake.	The ecological effectiveness of the kittiwake without prejudice compensatory measure is described in the Kittiwake Compensation Document (Document Reference: 7.2.4).
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[in relation to provision of artificial colonies in areas where kittiwakes are unable to breed due to lack of natural nesting habitat] However, what has <u>not</u> been robustly demonstrated by any of those OWFs is whether or not lack of suitable nesting sites is a limiting factor on kittiwakes in those locations and therefore whether the compensation measure will be additional. We consider this is an essential step before bringing forward yet another proposed nesting structure. It aligns with the need to identify what is “ecologically effective”.	RSPBs position on this matter is noted. However, the Applicant considers that the principle of provision of artificial nest sites for kittiwakes is established as a suitable compensatory measure (assuming that the feature is appropriately designed and located), given its acceptance for a number of consented OWFs. In addition, the Kittiwake Compensation Document (Document Reference: 7.2.4), describes the pool of birds available in the population which could utilise artificial nesting structures.
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[in relation to three UK OWFs consented subject to compensation measures for kittiwake] Notwithstanding these consents and the other projects proposing the same measure, there remains the same underlying question of whether there is evidence of lack of nesting sites being a limiting factor. Most of these projects have simply adopted the same measure as it is potentially within their control to deliver.	As above
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	We consider this approach to calculating the potential benefits of a closure of regional sandeel fisheries to be too simplistic. We recommend that wherever this measure is pursued then appropriate population modelling work is agreed by specialists and applied to a range of agreed realistic scenarios to more properly assess the benefit.	This option is not considered further by the Applicant. However, should this or any other measure become available as a strategic option, the Applicant may give this further consideration.
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[provision of artificial nesting structures for kittiwake] See comments above on need to demonstrate lack of suitable nesting sites is a limiting factor. Likely needs strategic research to be carried out to identify if there is anywhere in the species’ range where this is a constraint.	The Kittiwake Compensation Document (Document Reference: 7.2.4), describes the pool of birds available in the population which could utilise artificial nesting structures. It is therefore the Applicant’s position that there is evidence of the suitability and ecological effectiveness of artificial nesting sites.
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[provision of artificial nesting structures as an established compensation measure agreed by regulators] It may be “established” but it remains unproven as a compensation measure, and likely to remain that way for at least 10 years – even at the basic level of construction and monitoring first few years of colonisation. Therefore we would guard against seeing it as “established” as a proven compensation measure. This has to be distinguished from evidence that kittiwakes will utilise artificial structures (which is what the cited 2013 report focused on).	The Applicant considers that the principle of provision of artificial nest sites for kittiwakes is established as a suitable compensatory measure (assuming that the feature is appropriately designed and located), given its acceptance for a number of consented OWFs.
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	See comments above. We consider there is a need for further work to establish [whether alternative compensation measures would be required for kittiwake] and have said so for each of the consented cases and those currently unconsented.	See response above.
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	The RSPB opposes managing specialist avian predators to provide compensation for windfarm losses. This is underlined when each of the species mentioned are birds of conservation concern. Kittiwake is red-listed (severe decline). Great skua is amber listed and the UK population is internationally important.  Seabirds have always co-existed with avian predators. Given adequate environmental conditions (e.g., breeding habitat, food supply, manageable additive mortality), that coexistence shows that specialist avian predators are not a long-term conservation threat. Windfarms pose an additional mortality risk to seabirds beyond the background mortality (which includes native predators). Overall, we do not believe that removing natural background mortality to tackle additional windfarm driven mortality is ecologically sensible. In contrast, non-native mammal predators on islands are different as they are not native and were introduced by people. As such only eradication of these species and biosecurity are appropriate elements of compensation packages.	This option is not considered further.
Kittiwake	22/03/2022	RSPB Review of in-principle compensation measures	[designating other SPAs for a given species to compensate for adverse effects on a species at an existing SPA] Please note that this is not legally possible for SPAs and so should be dropped now. Any site that “should be an SPA” is legally required to be classified as an SPA. Therefore there would be no additionality. This is distinct from classifying a compensation site as an SPA as that is specifically designed to restore the coherence of the damaged SPA network for the impacted species.	This option is not considered further.
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	None of these reports [on proposed compensation measures for lesser black-backed gull] took proper account of the current situation at the Alde-Ore Estuary SPA in respect of the LBBG colony located at RSPB Havergate. Please refer to the RSPB’s Norfolk Vanguard submission (Nov 21) which outlines the current declines in productivity and population and for which the issue of mammalian predation and human disturbance are not relevant. Therefore, other factors are at play which require research to understand.	Consideration is given to RSPB’s Norfolk Vanguard submission with regards to the main breeding ecology requirements for a successful lesser black-backed gull colony. This is discussed in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).



Species	Date	Consultation	Comment	Applicant Response
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	See the above comment. We do not consider predator exclusion fencing can be assumed to solve the underlying problems affecting the Alde-Ore Estuary SPA population. The problems it solves only address a subset of the factors suspected to be affecting this population and, based on RSPB Havergate, would not address current unknowns which are resulting in the described declines in productivity and population. Understanding these is critical to considering whether this part of the Suffolk coast is an appropriate location to consider deploying compensation measures for this species.	As above
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	The evidence base for this [bycatch management for lesser black-backed gull] is currently weaker than that for guillemot and razorbill, plus there is no proven measure to reduce bycatch for this species. It would require detailed research of the level and location of bycatch, along with reduction trials to identify a reliable bycatch reduction measure that could be implemented. The RSPB is not aware of any such research being in place at this time.	This option is not considered further.
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	See comments above which apply to the proposed measures adopted by Norfolk Boreas/Vanguard and others [for lesser black-backed gull at Alde Ore Estuary SPA]	Noted. See responses to each comment
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	Please see RSPB comments on this putative measure [bycatch reduction proposal for East Anglia ONE North and TWO] to the Hornsea 4 examination (Annex B, Deadline 2). We do not consider the described proposal as acceptable given the lack of any evidence base for effective bycatch mitigation measures at this time. Substantive scientific, peer-reviewed evidence is required. The measures and timetable described here are inadequate	This option is not considered further.
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	[Galopper OWF mitigation for lesser black-backed gull] With the exception of the RSPB who consistently argued at the time that it was compensation.	Noted, the Applicant cannot comment on the consenting process of an existing OWF.
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	We welcome agreement on the need to understand what factors are driving declines in productivity and population at the Alde-Ore. Until this is properly understood, we do not consider it safe to rely on the predator fencing solution that has been adopted to date.	
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	RSPB November 2021 submission to Norfolk Vanguard consultation updates this information [decline of lesser black-backed gull at Alde-Ore Estuary SPA] and counters the narrative that it is mainly foxes driving the current decline. We note that this fails to reference the RSPB research carried out in 2010/11 which highlighted a number of potential factors (including fox predation) but concluded that further research was required to identify the key factors. This research was first referenced by the RSPB in its submissions to the Galopper OWF examination yet is persistently ignored.	Consideration is given to RSPB's Norfolk Vanguard submission with regards to the main breeding ecology requirements for a successful lesser black-backed gull colony. This is discussed in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	Another factor ignored by all of these suggestions for locating the compensation in the Alde-Ore area is that it would expose any birds using the compensation to the same risk of collision as the current SPA population. This questions the sustainability of it as a compensation measure.	The Applicant does not accept this point. Although it is the case that 'new' birds arising from compensation could be exposed to collision risk, such a risk remains extremely low, and this would not limit the ability to compensate for any population loss. This is particularly the case as compensation would be required at a level above a 1:1 ratio, and that loss calculations are considered to be precautionary.
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	We consider this figure (which has somehow survived several iterations across several wind farm projects) is wholly unrealistic. Unfortunately no wind farm developer has yet amended their calculations in light of the information the RSPB presented on this matter going back to 2020. This is what we set out in our response to the original Norfolk Vanguard compensation consultation in April 2020 based on our experience of managing the main colony at RSPB Havergate Island. It argues for a more realistic approach to calculating LBBG breeding density. "Norfolk Vanguard base their area calculations on an assumption that LBBG nest density at the SPA probably averages less than 1 pair/m2. Unfortunately, this is a gross over-estimate based on the RSPB's Havergate Island experience. Breeding densities range from approximately 0.005 pairs/m2 (or 200 pairs in 4ha) in good quality habitat (Doveys) to approximately 0.002 pairs/m2 across 100ha of mixed habitat currently used by c.1500-2000 pairs of LBBG across Havergate Island as a whole." It would be sensible to review the range of breeding LBBG densities at key SPA colonies, and where possible an assessment of productivity levels in different habitats to get a more sensible assessment of likely breeding densities.	Consideration is given to the RSPB's advice on breeding densities is included in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	[Reduction of fisheries bycatch] See above – this requires significant targeted multi-year, peer-reviewed research and trials before it can be considered a viable compensation option.	This option is not considered further.
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	See comments above. We do not accept this level of confidence given the current situation with the main colony at RSPB Havergate and the need to understand the other factors driving declines there.	Consideration is given to RSPB's advice regarding the main breeding ecology requirements for a successful lesser black-backed gull colony. This is discussed in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).

Species	Date	Consultation	Comment	Applicant Response
Lesser Black-backed Gull	22/03/2022	RSPB Review of in-principle compensation measures	We consider [measures to increase productivity and breeding numbers of lesser black-backed gulls at sites more distant from the Alde-Ore SPA] this should be an early part of the discussions given our concerns.	The compensation proposals have been developed in consultation with Natural England and the RSPB and the Applicant proposes a search area in response to the stakeholder advice.
Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	We welcome the in-principle compensations options review provided by North Falls. We note that before considering any compensation options, North Falls should focus on the top of the mitigation hierarchy and ensure that options for avoidance/reduction of impacts has been exhausted first (e.g. by ensuring best practice mitigation in terms of raising turbine draught heights by as much as possible, maximising buffer between array and boundary of OTE SPA by as much as possible, routing of vessels from North Falls to avoid OTE SPA).	Significant further commitments have been made by the Applicant regarding the mitigation hierarchy, such as reduction in the array area. This is reflected in the HRA Derogation Provision of Evidence (Document Reference: 7.2), in relation to the Assessment of Alternative Solutions.
Auks; Kittiwake; Lesser Black-backed Gull; Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	We welcome that the key designated sites and features likely to require in-principle compensation proposals by North Falls of Flamborough and Filey Coast (FFC) SPA kittiwake, Alde-Ore Estuary (AOE) SPA lesser black-backed gull (LBBG) and Outer Thames Estuary (OTE) SPA red-throated diver (RTD) have been included in the compensation options review. We note that the Hornsea 4 project has submitted its DCO application and the examination for this project is currently ongoing. The auk numbers (particularly guillemot) appear to be particularly high at this site, especially during the post-breeding season, and there is the potential that NE's advice could be that an adverse effect on integrity (AEoI) cannot be ruled out for in-combination auk displacement during that examination. Therefore, there may be the requirement for any future projects in the North Sea contributing to the auk displacement in-combination total, which likely includes North Falls, to consider in-principle compensation options for FFC SPA auk features as well. Therefore, we recommend that North Falls keep up to date on development of advice on these matters during the Hornsea 4 examination.	The Applicant has monitored developments in the industry throughout the pre-application process, including the consenting of Hornsea 4, Sheringham Shoal Extension Project (SEP) and Dudgeon Extension Project (DEP). This, along with extensive consultation with Natural England, has informed the development of the North Falls compensatory measures.
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	Potential Compensation for North Falls for Kittiwake from FFC SPA. Closure of sandeel fisheries. We consider that improving sandeel abundance and hence availability to kittiwakes would probably be the most ecologically effective compensation measure. Such a measure also has significant value as a long-term, strategic measure. We agree that there is currently no obvious mechanism available at present for OWF developers to adopt this as a compensatory measure, however, such a mechanism may appear in future. Therefore, we agree that there is merit in North Falls investigating the extent to which the OWF industry has engaged with Government on such matters, including progress on identifying mechanisms for strategic delivery of compensation. We also consider that improving prey availability could form the basis of adaptive management measures for the compensatory measure in the longer term, which we consider should be incorporated into the proposals.	Since this consultation, the Applicant notes that a permanent closure of sandeel fisheries in English North Sea waters has been introduced from April 2024 (Defra, 2024a) and that the Energy Act provides the powers to allow this measure to be allocated as compensation for offshore wind projects. The process whereby sandeel closures can be used as compensation is still in development and at this stage, it is not considered further as a potential compensatory measure for North Falls. However, the Applicant recognises that sandeel closures could be a compensatory measure that the Secretary of State could rely on in the future to provide compensation either for North Falls alone or as part of a strategic approach to compensation.
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	Provision of artificial nesting structures: We note that there are a number of recently consented OWFs (Hornsea 3, Norfolk Vanguard and Norfolk Boreas) that are required to provide compensation for FFC SPA kittiwakes and who propose to achieve this by provision of coastal artificial nesting structures along the English North Sea Coast (Hornsea 3 proposing c. 1,800 nests, the two Norfolk projects proposing c. 900 nests at Lowestoft). Additionally, East Anglia One North and East Anglia Two are proposing to partner up with the Norfolk projects. We also understand that there is a planning requirement for alternative nest spaces to be provided when the Sizewell rigs are decommissioned. So, it appears likely that c. 3,000 new nest spaces will be required to be provided for by these projects. We note that it has always been unclear what the 'pool' of non-breeding or poorly-breeding kittiwakes is, and given the numbers of nests already proposed it is really hard to justify any more onshore structures. By contrast, it seems much more likely that availability of high-quality nest spaces offshore is limited. Therefore, we would recommend North Falls prioritise the development of potential offshore structures and locations. This could be either through repurposing and augmenting an existing structure scheduled for decommissioning, or through installation of a new structure.	Evidence regarding the remaining pool of kittiwakes available to utilise artificial nesting structures is described in the Kittiwake Compensation Document (Document Reference: 7.2.4)
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	However, if the predicted impacts from a project are very small (e.g. 1-2 birds), it is unlikely to be sensible for that project to undertake compensation in the form of a structure alone. In such instances it may be more practical for that project to contribute to enhancing an existing scheme e.g. increasing the benefits of something existing or planned. However, we note that this could also be complicated. So, in such circumstances it may be wiser for such projects to look to collaborate with those developments with broadly overlapping timescales, as well as any wider industry plans. Whilst we have not yet seen the number of predicted kittiwake collisions attributed to the FFC SPA from North Falls, if the predicted numbers were to fall into this category, then it may be wise for North Falls to consider/investigate at an early stage any potential to collaborate with projects such as Five Estuaries and possibly Rampion 2.	Collaboration with other projects is outlined in the Compensatory Measures Overview (Document Reference: 7.2.1). Detail of collaboration with other projects is described in the Kittiwake Compensation Document (Document Reference: 7.2.4).
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	North Falls have also suggested creation of artificial structures in alternative locations, e.g. the North Sea coast of Scotland, or potentially the UK west coast. We note that consideration of any locations outside of England will require discussion of the appropriateness of any option with the relevant authorities and SNCBs before progressing any further. Consideration would also need to be given as to whether nest site availability is a limiting factor at any such locations, and also to whether there are any kittiwake SPA colonies in close proximity to such locations where there may be a risk that a structure may simply re-distribute birds away from the SPA(s).	Following review of the pool of kittiwakes available to utilise artificial nesting structures in the southern North Sea, described in the Kittiwake Compensation Document (Document Reference: 7.2.4), it is considered that artificial nesting structures in this region can be utilised

Species	Date	Consultation	Comment	Applicant Response
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	Alternative measures: Predator (great skua) management – this option would require discussion of the appropriateness of any option with the relevant Scottish authorities and NatureScot before progressing further. We highlight that in many locations the great skuas in question will also be SPA features. The merit and applicability of this measure is therefore highly questionable.	This option is not considered further.
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	Extension or designation of additional SPA for kittiwake or species of comparable ecological function – we note that it is difficult to find new areas that could be designated as an SPA and designation of sites is not an easy or certain process. Additionally, any areas that meet the requirement to be designated as SPAs (as set out in the JNCC SPA selection criteria) should have been or should be designated. Therefore, we do not recommend this option is considered further.	This option is not considered further.
Lesser Black-backed Gull	05/04/2022	Natural England Review of in-principle compensation measures	Predator exclusion: We note that the SoS [Secretary of State('s)] decisions on Norfolk Vanguard and Boreas have said that their 'joint' compensation is for 4ha of land within the New Zealand-style predator exclusion fence. NE's advice at these projects has always been that 4ha is a minimum requirement, and that the AOE SPA needs to be put into good management regarding water levels and vegetation before the compensation can be installed. There is no agreement as yet on where within the land parcel of interest would be suitable for the exclusion fenced area to be located, or what targets for gull numbers should be on this land. Other constraints need to be duly addressed, such as avoiding impacts on SAC/SSSI habitats and on the Suffolk Coast and Heaths AONB. Hence there is no sense as yet as to whether an area of c. 4ha is sufficient for compensation for impacts from any more OWF projects beyond Norfolk Vanguard and Boreas. Indeed, Natural England's advice has questioned whether c. 4ha would be sufficient to compensate for the predicted impacts from Norfolk Vanguard and Boreas combined, let alone for the inclusion of impacts from further projects. We note that Vattenfall (Norfolk Vanguard and Boreas) and SPR (East Anglia One North and East Anglia Two) have both said that they would collaborate if compensation were required for this feature of the site for their projects: however it is unclear how the SoS will treat this proposed collaboration in any consent that might be granted to East Anglia One North/East Anglia Two. The issues highlighted above result in a highly uncertain situation for projects that follow in the planning system and will contribute to the in-combination collision total of LBBGs from the AOE SPA, such as North Falls and Five Estuaries. We recommend that North Falls be in close discussion with Vattenfall/SPR regarding their proposals. One additional option that could be considered by North Falls would be to collaborate with Five Estuaries on their own compensation scheme in another location, perhaps adjacent to but outside the SPA. We note that before settling on their compensation location, Vattenfall explored areas outside but adjacent to the AOE SPA that could be managed for LBBG. So, whilst we recommend North Falls to open discussions with Vattenfall regarding potential to collaborate with them, we also recommend North Falls also open discussions with Five Estuaries for collaboration and together begin their own explorations around where land might be secured, and habitat created for breeding LBBG adjacent to the AOE SPA.	Collaboration with other projects is outlined in Compensatory Measures Overview (Document Reference: 7.2.1). Detail of collaboration with other projects is described in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	05/04/2022	Natural England Review of in-principle compensation measures	Reduction of fisheries by-catch: It is unclear at this stage whether SPA LBBGs are at particular risk of by-catch, or indeed whether there are any remedies available for gull by-catch. In this context, by-catch seems unlikely to provide any opportunities for compensation.	This option is not considered further.
Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	[red-throated diver and the OTE SPA] Compensation for the reduction of available habitat due to displacement is difficult and before even considering compensatory measures, North Falls should focus on the top of the mitigation hierarchy and ensure that avoidance/reduction of impacts has been exhausted first before considering compensatory measures.	Significant further commitments have been made by the Applicant regarding the mitigation hierarchy, such as reduction in the array area. This is reflected in the HRA Derogation Provision of Evidence (Document Reference: 7.2), in relation to the Assessment of Alternative Solutions.
Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	A potential option for this issue would be to improve the quality of areas within the SPA e.g. through the creation of 'sanctuary' or 'reserve' areas, however, it is currently unclear as to what this might look like and how it would be secured. There is broad interest across the sector (including Defra and The Crown Estate) in a strategic approach where all developers (of all kinds) get together and try to rationalise/zone activities within diver SPAs to create sanctuary/reserve areas, both from individual cases and potentially also future leasing rounds. However, there is a significant amount of work required to achieve this strategic approach and as yet no ongoing project. We recommend North Falls tracks the progress of the East Anglia One North/East Anglia Two projects as well as engaging in cross-sector discussions regarding strategic initiatives.	The Applicant is in discussion with the East Anglia One North/East Anglia Two projects and the red-throated diver compensation includes the option of data collection to help inform the development this strategic initiative. The Applicant will also consider contributing to emerging strategic measures as they become available.
Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	Vessel management: North Falls have suggested engagement with developers of other consented OWFs identified as causing, or with the potential to cause, displacement effects within the SPA, for example Galloper and Greater Gabbard to see if there was potential to reach agreements to direct vessel traffic associated with existing OWFs outside the SPA boundary as far as possible. The current East Anglia One North/East Anglia Two offer regarding OTE SPA RTD compensation includes formal re-routing of vessels from East Anglia Three and East Anglia One to reduce the amount of transiting through the SPA. NE are not persuaded by the effectiveness of this aspect of the East Anglia One North/East Anglia Two proposal, and it is by no means clear whether addressing the impacts of ongoing projects should be considered compensation, particularly given the conservation advice for the SPA has a 'reduce' target as regards displacement within the site. Therefore, we do not recommend North Falls progress with this option as compensation, though clearly this could form part of an impact reduction/mitigation package.	This option is not considered further.



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Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	Reduction of fisheries by-catch: A previous study by Kent & Essex IFCA indicated no significant concerns regarding the level of diver by-catch within the SPA. It is therefore rather unlikely that diver by-catch reduction offers any opportunity for compensatory measures, and so we do not recommend North Falls progress this option further.	This option is not considered further.
Kittiwake	05/04/2022	Natural England Review of in-principle compensation measures	Closure of sandeel and sprat fisheries in OTE area – as noted above regarding FFC SPA kittiwake, there is no obvious mechanism available at present for OWF developers to adopt this as a compensatory measure, however, such a mechanism may appear in future. Therefore, there is merit in North Falls investigating the extent to which the OWF industry has engaged with Government on such matters. However, as noted in the review, the extent to which wintering divers are affected by prey availability in the SPA is unclear.	Since this consultation, the Applicant notes that a permanent closure of sandeel fisheries in English North Sea waters has been introduced from April 2024 (Defra, 2024a) and that the Energy Act provides the powers to allow this measure to be allocated as compensation for offshore wind projects. The process whereby sandeel closures can be used as compensation is still in development and at this stage, it is not considered further as a potential compensatory measure for North Falls. However, the Applicant recognises that sandeel closures could be a compensatory measure that the Secretary of State could rely on in the future to provide compensation either for North Falls alone or as part of a strategic approach to compensation.
Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	Provision of nesting rafts for breeding RTDs in the UK – RTDs breeding in the UK (Scotland) do not overwinter in the OTE SPA, the birds wintering in the OTE SPA are from Fenno-Scandia. Therefore, this proposal would not benefit the impacted site or the birds that use it. Additionally, the key concern is regarding habitat loss and redistribution of birds within the SPA rather than mortality, and hence providing more divers does not address the issue. Therefore, we do not recommend that North Falls prioritise this option.	Consultation has progressed with Natural England on this topic and subsequent advice from Natural England (15/12/23, see below) stated " <i>Scotland currently represents the only realistic option for project-delivered measures and that it could deliver legitimate conservation benefits to the species and to some extent the National Site Network (NSN)</i> ". Compensatory measures in Scotland and Fennoscandia are likely to be ecologically effective in benefitting the coherence of the National Site Network and therefore in accordance with Defra (2024b) compensation policies so this measure is included in the Red Throated Diver Compensation Document (Document Reference: 7.2.3).
Kittiwake; Red-throated Diver	05/04/2022	Natural England Review of in-principle compensation measures	Extension or designation of additional SPA for RTD or species of comparable ecological function – as noted above regarding FFC SPA kittiwake, we note that it is difficult to find new areas that could be designated as an SPA and designation of sites is not an easy or certain process. Additionally, any areas that meet the requirement to be designated as SPAs should have been or should be designated. Therefore, we do not recommend this option is considered further.	This option is not considered further by the Applicant. However, should this or any other measure become available as a strategic option, the Applicant may give this further consideration.
Red-throated Diver	19/04/2023	Natural England comments on North Falls Third ETG, Presentation and Minutes	<p>Natural England's position is that existing displacement pressures within the site mean that adverse effects on integrity are arising on RTD using the OTE SPA. Natural England therefore considers any additional displacement would add to the in-combination impact. It is stated that a total area of 149.4 km<sup>2</sup> (representing 3.8% of the SPA) may be subject to displacement impacts when considering a 12km buffer for North Falls OWF. This buffer distance is considered appropriate as it is informed by evidence from the nearby London Array OWF.</p> <p>Natural England advises that the evidence base strongly suggests that the project alone will exert a displacement effect on red-throated divers in the Outer Thames Estuary SPA, which will inevitably impact the availability of supporting habitat and the distribution of RTD in the site, which has the potential to undermine the relevant conservation objectives. Further, Natural England consider that the North Falls project will therefore contribute to the in-combination impact at the SPA.</p> <p>Natural England strongly suggest that the East Anglia 1N and East Anglia 2 HRAs and SoS decisions are reviewed, and that all options for avoiding, mitigating and compensating the impacts on RTD at OTE SPA are fully considered. Natural England would welcome further engagement and the opportunity to input collaboratively on this difficult issue.</p>	Natural England's position is understood, and the offer of collaboration is welcomed. The Applicant has also reviewed the HRAs for East Anglia ONE North and TWO (BEIS 2022a, b) and the position of the Secretary of State. It is considered that the situation with North Falls is somewhat different to EA1N and EA2, as the areas of overlap between the 12km buffers of these sites and the OTE SPA are not in close proximity to designated shipping lanes and other OWFs, as is the case for North Falls. As noted above, it is still considered valid to consider the extent of additional displacement that might be caused by North Falls array area, given other sources of disturbance to RTDs in this area and their relative location in relation to North Falls. Without prejudice compensatory measures for RTD are presented alongside the RIAA.
Lesser Black-backed Gull	19/04/2023	Natural England comments on North Falls Third ETG, Presentation and Minutes	Lesser Black-backed Gull Draft RIAA, Alde-Ore Estuary SPA, Operational Collision Risk. We welcome your conclusions regarding the SPA and look forward to the North Falls OWF without prejudice compensation plans for lesser-black backed gull.	Natural England's comment is noted. In principle compensatory measures have been developed in consultation as part of the EPP.
Kittiwake	19/04/2023	Natural England comments on North Falls Third ETG, Presentation and Minutes	Kittiwake Draft RIAA, Flamborough and Filey Coast SPA, Operational Collision Risk. We welcome your conclusions regarding the SPA and look forward to the North Falls OWF without prejudice compensation plans for kittiwake.	Natural England's comment is noted. In principle without prejudice compensatory measures have been developed in consultation as part of the EPP.
N/A	14/07/2023	Natural England comments on PEIR	<p>Natural England welcomes the commitment to an increased air gap above the minimum standard. We note that the airgap for all design scenarios is stated as 27m above MHWS (26.6m above HAT) and that this air gap increase of 5m over that required for navigational purposes is proposed as embedded mitigation to reduce collision risk.</p> <p>In relation to the consultation response included on pg. 36-37 of Appendix 13.1, Natural England notes, with respect to increasing the air gap further, it is suggested that that installation vessel options for larger turbines are limited, and compensatory measures for lesser-black backed gull will be proposed to support a Habitats Regulations Assessment (HRA) derogation case.</p> <p>Natural England highlights that increasing the rotor clearance further would give greater reductions in collision risk estimates generated by the project.</p>	<p>Following PEIR, refinements to the project design envelope have been made in accordance with the mitigation hierarchy, described in ES Chapter 13 (Document Reference: 3.1.15), Section 13.3.3 and RIAA Part 4 (Document Reference: 7.1.4), Section 4.2.3.</p> <p>Evidence to support an HRA derogation case is provided with the DCO application. The derogation case includes an assessment of alternative solutions to reduce effects on the national site network, such as alternative air gap. The derogation case also includes compensatory measures for lesser black-backed gull at the Alde-Ore Estuary SPA.</p>

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			<p>We do not consider it appropriate to suggest that compensatory measures are considered at an early stage of project design when the full extent of all mitigation options are not fully explored. We remind the Applicant that compensating for impacts should only be considered as a last resort and that it will be necessary to demonstrate no satisfactory alternatives should adverse effects be identified.</p> <p>We also draw the Applicant's attention to the significant difficulties encountered to date by projects seeking to compensate for ornithological impacts, including for lesser black-backed gull. This gives further weight to the requirement to exhaust the mitigation hierarchy.</p>	
Lesser Black-backed Gull; Red-throated Diver	14/07/2023	Natural England comments on the draft RIAA produced to accompany the PEIR	<p>Natural England highlights the underdeveloped and high-level nature of documents relating to compensatory measures. This is of significant concern given the apparent early reliance on compensatory measures from a consenting perspective.</p> <p>We highlight the significant difficulties experienced by other projects where compensatory measures have been required. Designing and siting measures, as well as evidencing likely effectiveness and connectivity to the impacted SPA or the national site network all present significant challenges.</p> <p>It remains unclear that an appropriate compensatory measure can be identified, secured, and delivered by the project for RTD.</p> <p>We advise the project work collaboratively using the Expert Topic Group (ETG) process to accelerate the development of compensatory measures prior to submission. This is a particular priority for RTD and lesser black-backed gull (LBBG), although it should be noted that Natural England does not yet believe all options to avoid, reduce and mitigate impacts on these species have been exhausted. Compensatory measures should be considered a last resort once the mitigation hierarchy is exhausted.</p> <p>Where compensatory measures are likely to be required, or there is a level of uncertainty pre-examination, Natural England advises that the Examination period will be insufficient for measures to be adequately developed and secured. This could carry significant consenting risk.</p>	Further work has been undertaken to progress compensatory measures, in consultation with Natural England, through the EPP. See Lesser black-backed gull Compensation Document (Document Reference: 7.2.2) and Red-throated diver Compensation Document (Document Reference: 7.2.3), as well as Kittiwake Compensation Document (Document Reference: 7.2.4) and Guillemot and Razorbill Compensation Document (Document Reference: 7.2.5).
Red-throated Diver	14/07/2023	Natural England comments on the draft RIAA produced to accompany the PEIR	<p>Compensatory measures are proposed for RTD at the OTE SPA. Natural England highlights our concerns that it will not be possible to deliver effective compensation at the project level. It should also be noted that compensation is a last resort once the mitigation hierarchy has been exhausted and that it will be necessary to demonstrate no satisfactory alternatives in any derogation case. Again, Natural England advises that identifying avoidance and mitigation measures should be given the highest priority prior to submission.</p> <p>See comment on RIAA Para 1246.</p>	The comments on the mitigation hierarchy are noted and this issue has been considered and is addressed in the derogation case. Project level compensation has been developed in consultation with Natural England through the EPP, and options for contribution to strategic compensatory measures are also presented.
Lesser Black-backed Gull	14/07/2023	Natural England comments on the draft RIAA produced to accompany the PEIR	<p>Natural England welcomes the early consideration of compensatory measures. Until the impact assessment has been completed it is unclear what scale of impact these measures will need to compensate for. We highlight the inherent difficulties in evidencing and securing acceptable compensatory measures for SPA seabirds that satisfy the requirements of the Habitats Regulations.</p> <p>We advise that the mitigation hierarchy is followed, which should be exhausted before considering the provision of compensatory measures.</p>	Significant further commitments have been made by the Applicant regarding the mitigation hierarchy, such as reduction in the array area. This is reflected in the HRA Derogation Provision of Evidence (Document Reference: 7.2), in relation to the Assessment of Alternative Solutions.
Kittiwake	14/07/2023	Natural England comments on the draft RIAA produced to accompany the PEIR	<p>We note that without prejudice compensatory measures have been included for kittiwake, but that we are awaiting updates to the modelling, which will provide updated figures (see comment above on Ch.13 Para. 230).</p> <p>Natural England will provide further comments when the updated figures are available and would welcome further discussion on this through the ETG process.</p>	The kittiwake CRM has been updated for the DCO submission. As above, in consultation with Natural England, through the EPP, North Falls has developed compensatory measures for kittiwake.
Auks; Lesser Black-backed Gull; Kittiwake; Red-throated Diver	14/07/2023	Natural England comments on the draft RIAA produced to accompany the PEIR	<p>We note that many of our previous comments included in Table 2.1 remain unaddressed. We have not repeated those comments here, but they remain valid.</p> <p>Revisit Natural England's advice on the options review and incorporate into compensation package.</p>	Natural England's comments on the Draft In Principle Compensation Options Review (Ref 004290164-04) have been taken account of in further development of compensatory measures for lesser black-backed gull and without prejudice compensatory measures for red-throated diver, kittiwake, guillemot and razorbill. All compensatory measures presented have been subject to consultation with Natural England through the EPP.
N/A	14/07/2023	RSPB comments on PEIR	<p>The RSPB welcomes consideration of compensation measures but has not had an opportunity to fully review these (including Draft In Principle Compensation Options Review). However, currently we do not consider there has been full consideration of the mitigation hierarchy nor that there is sufficient evidence for the effectiveness of any of the proposed measures. We will provide more detailed comments when the final proposals are submitted.</p>	RSPB's position is noted. For the DCO submission, refinements have been made to the project design envelope in accordance with the mitigation hierarchy. This is discussed further in the HRA Derogation Case. Compensatory measures have been further developed in consultation with the ETG, with evidence presented for success.

Species	Date	Consultation	Comment	Applicant Response
Lesser Black-backed Gull; Red-throated Diver	13/11/2023	Offshore Ornithology Expert Topic Group Meeting November 2023	<p>Topics covered:</p> <ul style="list-style-type: none"> <li>- Project update</li> <li>- Key changes to project design and PEIR feedback</li> <li>- RIAA - RTD / OTE SPA</li> <li>- Responses to PEIR comments</li> <li>- Compensation in principle (RTD, OTE SPA)</li> <li>- Compensation - LBBG</li> </ul>	This meeting discussed the RSPB and Natural England's feedback on the In Principal Compensation Options Review submitted alongside PEIR and a red-throated diver technical note regarding compensation submitted ahead of the meeting. Written feedback was received from Natural England on the red-throated diver technical note after the meeting. Responses to the written feedback regarding the In Principal Compensation Options Review and red-throated diver technical note are discussed above. Feedback from this meeting and the subsequent written feedback has been considered in developing the compensation proposals.
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	<p>"Therefore, taking into account the partial overlap over the North Falls buffer area with other 12km buffers surrounding the existing Greater Gabbard and London Array wind farms, and overlap with international shipping lanes, there is no additional overlap of the North Falls 12km buffer with the SPA boundary."</p> <p>We propose commenting only on compensatory measures themselves during review of technical documents detailing them and will comment on the assessment and significance of impacts in the relevant documents. However, it is clearly important to consider the impact that compensatory measures seek to address if their potential utility and scale of implementation is to be determined. Thus, it may be useful to consider a realistic worst-case scenario when evaluating compensatory measures.</p> <p>It is noted that the total overlap of the projects 12km buffer with the SPA is now 108.42km<sup>2</sup> (2.8% of the SPA area).</p>	Noted the quantification of the effect to be compensated should the Secretary of State conclude an adverse effect on integrity is described in Section 3 of the Red-throated diver Compensation Document (Document Reference: 7.2.3), and the scale of compensation in Section 6.4 of the same document.
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	<p>Although it is considered that opportunities for conservation should ideally be sought to directly manage waterbodies so that they are optimal for breeding (Dewar and Lawrence in press), the use of artificial nest sites can improve red-throated diver productivity at sites where nesting on the shore is often unsuccessful (e.g. Mavor et al. 2004). Agreed. Ideally, such management opportunities should be identified at the site survey phase. The potential for implementation either as part of nesting raft provision, or as adaptive management if required, could be considered.</p>	Noted.
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	<p>Natural England agree that strategic compensatory measures could be implemented at the OTE SPA, and that these measures may directly compensate for the effective loss of wintering habitat for red-throated divers. Several options could be investigated, but all would essentially be to alleviate other displacement causing pressures e.g., shipping, fishing, recreational activity. As noted, these measures cannot be delivered by a single offshore wind farm (OWF) project and are likely to require government intervention. We note that North Falls is engaged in efforts to investigate these measures further via a working group comprised of relevant regulators. We consider ongoing and proactive involvement in this group to be an essential component in any derogations case.</p> <p>Natural England acknowledges that strategic compensation cannot be relied upon at this early stage and welcome the Project's progression of artificial nesting rafts to increase red throated diver productivity in Scotland or Fennoscandia. We consider that implementing this measure in Scotland currently represents the only realistic option for project-delivered measures and that it could deliver legitimate conservation benefits to the species and to some extent the National Site Network (NSN), albeit to sites classified for breeding rather than nonbreeding divers. In comparison, it seems unlikely that Fennoscandia offers meaningful compensation opportunities, given the sites are outwith the NSN and any breeding season benefits to that population might be neutralised by the predicted impacts of North Falls.</p> <p>Our primary concern relating to the measure is the lack of consideration regarding the scale of implementation. As the impact being compensated is essentially measurable as an area (of wintering habitat loss or damage), and the compensatory measure aims to increase productivity of breeding birds, this is not a straightforward calculation. We would welcome collaborative discussion on this issue. Notwithstanding the difficulties of calculating an appropriate scale, we would recommend that an ambitious approach to implementation is considered.</p>	<p>The option of data collection to help inform the development this strategic initiative is included in the Red-throated diver Compensation Document (Document Reference: 7.2.3).The Applicant will also consider contributing to emerging strategic measures as they become available.</p> <p>Natural England's support of delivering compensation in Scotland is welcomed and this is included in the Red-throated diver Compensation Document (Document Reference: 7.2.3).</p> <p>Ecological evidence of the benefits to the National Site Network of Fennoscandian rafts are also discussed in the Compensation Document.</p> <p>The proposed scale of the compensation is described in Section 6.4 of the Red-throated Diver Compensation Document (Document Reference: 7.2.3). Natural England has been engaged in the development of these without prejudice proposals and will continue to be consulted as the compensation is developed.</p>
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	<p>"...provision of nesting rafts in Fennoscandia... is likely to be administratively / politically / legally much more challenging in Fennoscandia than in Scotland"</p> <p>Agreed, not least because the potential benefits to the NSN would be at best tenuous.</p>	<p>Further review of the Fennoscandia feasibility has been undertaken and no administrative, political or legal barriers identified. This measure is described in the Red Throated Diver Compensation Document (Document Reference: 7.2.3).</p> <p>Ecological evidence of the benefits to the National Site Network of Fennoscandian rafts is provided in the Red-throated diver Compensation Document (Document Reference: 7.2.3).</p>



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Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	Data analysis (e.g. Resource Equivalency Analysis) "The aim of this analysis would be to quantify the scale of predicted benefits derived from increased productivity achieved by deploying nesting rafts in order that the appropriate number of nesting rafts could be determined." Evers et al (2019) were calculating the number of nests and years required to compensate for direct mortality. In this case it may be necessary to make a judgement on what level of increased productivity is acceptable to compensate for the effective loss of an area of wintering habitat. To our knowledge, this problem has not been tackled before and we suggest early engagement on this will be vital to agree an appropriate approach.	The proposed scale of the compensation is described in Section 6.4 of the Red-throated Diver Compensation Document (Document Reference: 7.2.3). Natural England has been engaged in the development of these proposals and will continue to be consulted as the without prejudice compensatory measure is developed.
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	"Logistics and cost of travelling to the site as red-throated divers nest in remote, inaccessible parts of Scotland and Fennoscandia and multiple visits would be required to assess site suitability, deploy nesting rafts and monitor effectiveness of rafts" While we accept that this is an inevitable consideration in site selection, we would highlight that ecological effectiveness must be the primary concern. Increased cost and logistical difficulty should not be used to justify the selection of sub-optimal sites (again, accepting that logistical difficulty may genuinely preclude some sites from being developed).	Noted, the ecological effectiveness is described in the Red-throated diver Compensation Document (Document Reference: 7.2.3).
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	"North Falls is participating in a working group on red-throated divers in the Outer Thames Estuary, with representatives from Government, Marine Management Organisation (MMO), SNCBs and OWF Developers. The group is seeking to find a solution to OWF consenting challenges posed by disturbance and displacement of this species in the OTE SPA." We consider it essential that continued and determined involvement in this working group is included alongside the provision of nesting rafts to form a package of compensatory measures.	The Applicant contributed to a working group on red-throated diver, led by the MMO, however the MMO has not kept this going. In its absence, the Applicant has had regular engagement with Defra, SNCBs and other developers throughout the pre-application stage. The Applicant would welcome the working group on red-throated diver reforming.
Red-Throated Diver	15/12/2023	Natural England In Principle Compensation Options Technical Note	Reduce disturbance of habitat of diver prey from fishing activity (focus on scallop dredging) We are fully supportive of attempts to mitigate dredging impacts through technological advances in the scallop fishery. However, we believe that this fishery only operates intermittently and at low levels of intensity within the OTE SPA. Reducing any impacts arising is unlikely to offer sufficient opportunity for compensatory measures.	This option is not considered further.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	Method A – (Section 5) 'Predator Proof Fencing' Natural England (NE) agrees that habitat restoration/management and predator control represents an appropriate project specific compensatory measure for lesser black-backed gull that could also be delivered collaboratively with other projects. NE would strongly support collaborative efforts to secure such measures. Specifically, we consider that the potential to collaborate with Five Estuaries OWF should be investigated to reduce the potential for conflict or competition (e.g. for suitable sites) while delivering the best possible outcomes for breeding lesser black-backed gulls in the area.  More generally, NE would welcome further enhancement work in support of the SPAs conservation objectives and recommends that the compensation measures should entail habitat restoration/management with appropriate predator exclusion fencing and biosecurity, with the option to apply control when necessary.	Collaboration with other projects is outlined in the Compensatory Measures Overview (Document Reference: 7.2.1). Detail of collaboration with other projects is described in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	Method B – (Section 6) 'to supplement lesser black-backed gull populations through rearing chicks which might otherwise be subject to control under licence'. As this method has been proposed by multiple developers, Natural England is currently reviewing its appropriateness so that we can provide a general position on its suitability as a compensatory measure. In the meantime, with no compelling evidence for feasibility and efficacy, our advice is that chick rearing for release would be better retained in the plan as adaptive management (e.g. in case of low colonisation levels within a predator free enclosure).  This is because further investigation and trials will be required to assess any potential contribution to compensation targets. Trials would take several years to deliver meaningful results as the birds will take 3-4 years to mature and recruit into the breeding population. Suitable facilities and staff would need to be secured to run trials, which may represent a significant challenge. To our knowledge, very little work of a similar nature has been done on lesser black-backed gulls. Furthermore, the supply of eggs will rely on sufficient relevant licences being issued over the duration of the project.  In lieu of any evidence that may be contained within the currently unavailable NatureScot study, in the first instance a comprehensive feasibility study should be undertaken. The existence and availability of husbandry expertise (even on related species in other countries) and evidence of survival rates for released birds are significant knowledge gaps.	Rearing and release of chicks is considered as a potential adaptive management measure (if required) and would be determined in consultation with Natural England.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	Supplementary Advice on Conservation Objectives (SACO) targets of potential relevance to compensatory measures are listed but exclude those related to habitat management. NE advise that consideration is given to the target "Maintain the extent and distribution of predominantly medium to tall (i.e. 20-60 cm) grassland swards." This may be of relevance to inform management within any fenced area.	The SACO target is considered in the Lesser black-back gull Compensation Document (Document Reference: 7.2.2).

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Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"...and hare likely also reduce the productivity of lesser black-backed Gulls through disturbance" We are not persuaded that hares are likely to be a significant source of disturbance.	Noted. Reference to hares has been removed.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"...there seems to be little evidence relating to the role of rats as predators at the AOE SPA lesser black-backed Gull colonies" Is this (possibly) due to a lack of thorough investigation? This is not to question the evidence that fox predation is more significant.	Noted that this may be due to lack of thorough investigation. However, there is correlation between reduced fox control measures at Alde-Ore Estuary SPA and a reduction in lesser-black backed gull. The compensatory measure proposed will target foxes and other mammal predators such as rats.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"...which further supports the hypothesis that this species is now unwilling to nest on the ground at Orford Ness" Preferential nesting on buildings is not exclusive to Orford Ness, especially considering the large-scale immigration to urban environments.	Noted.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"the colony at Havergate Island increased from 290 breeding pairs during Seabird 2000 to 1,670 breeding pairs in 2019" In light of previous comments relating to birds being unwilling to nest on the ground at Orford Ness, it is worth noting that these birds are ground nesters albeit on an island.	Noted.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"The contribution of North Falls to the cumulative total will be updated once a revised collision risk estimate for the new Array Area is available." Noted. Natural England highlights that we have consistently advised developers to scale the compensation requirements against the 95% Upper Confidence Limit (UCL) value for collision risk mortality.	The Applicant considers that use of upper confidence limits as well as a compensation ratio of 3:1 which has been adopted would be over precautionary. It is also noted that there is legal precedent from Norfolk Vanguard and Norfolk Boreas for the use of mean mortality as the basis for compensation of lesser black-backed gull.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	Review of lesser black-backed Gull compensation measures We note that habitat management/provision is not considered as a compensatory measure, but we consider that in the right location and with sufficiently ambitious proposals it could also represent a viable project specific measure.  Admittedly, it might best be 'packaged' alongside predator control/exclusion. It is of note that fencing out mammalian predators will also exclude grazers (e.g. deer) that may keep vegetation under control for the benefit of ground nesting Gulls.	Breeding habitat enhancement (e.g. predator control) is considered as a compensatory measure in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2) in response to stakeholder feedback.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"...it may be possible for NFOW to also work in partnership with other OWF developers facing similar project requirements to compensate for lesser black-backed Gull collision risk and develop a compensation measure(s) targeted at increasing breeding success of this species." Natural England strongly encourage collaborative efforts to deliver compensatory measures.	Collaboration with other projects is outlined in Compensatory Measures Overview (Document Reference: 7.2.1). Detail of collaboration with other projects is described in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"In addition, predator proof fences also exclude rats and American mink" We note that predator proof fences can also exclude rats etc., but that this is design specific, and excluding rats is far more difficult and costly than excluding foxes.	Noted, the nature of fencing (if fencing is selected as the compensatory measure) would be selected based on the relevant predators presenting a pressure to the lesser black-backed gull breeding colony.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"An increase in the number of pairs, and/or breeding success of the same size, or greater than, North Falls's predicted impact (or multiple projects) would be considered to signify successful compensation." Suggest edit required for clarity.	Noted, text revised in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	"It can be estimated that 28 pairs would produce 14 juveniles (average productivity is 0.5/pair) and 50% of these would be expected to reach adult age, hence 7 adults. Therefore, to achieve a 3:1 over-compensation ratio a target of 84 breeding pairs within an enclosure would be appropriate for the Project." This calculation does not account for natal dispersal. A proportion of these adult birds will not recruit back into the National Site Network (NSN), and therefore will not provide compensation. Data quality informing the natal dispersal rate for lesser black-backed Gull in Horswill & Robinson (2015) is poor, but the rate is characterised as "elevated" at 0.470. It is of note that this figure is relatively low compared to the other Gulls. Data quality for Herring Gull is good, and the natal dispersal rate is 0.629.  Natural England advise that the population calculation method employed by Hornsea 3 to inform the provision of nesting sites on artificial structures for kittiwake is adopted. This method considers productivity, recruitment age, survival rates of specific age classes and philopatry. Natural England consider this approach to represent a more ecologically robust calculation of the breeding population that would be required to generate sufficient birds.  For more information on the method see section 8 & Appendix E, EN010080-003241HOW03_30Sep_Appendix_2_Annex_2 Ecological Evidence (06543000_A) combined (06543760_A).pdf (planninginspectorate.gov.uk)  We highlight that the majority of chicks from the new colony should be able to be colour- ringed, and as a result our expectation would be that recruitment into the colony (or into other monitored colonies within the SPA) should	Natural England's advice on philopatry is included in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).



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			be monitored directly. Therefore, we urge caution in setting a target for breeding pairs that does not consider likely levels of philopatry.	
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	<p>"...an area of 4ha could theoretically accommodate 5,600 pairs of lesser black-backed Gull."</p> <p>Natural England highlights that achieving anything like these densities within a 4ha compound in the AOE SPA area is unrealistic. Whilst Gull densities can be high in optimal locations (both in terms the nesting site and in terms of surrounding conditions such as food supply), this may well not be achievable in a location where lesser black-backed Gull have undergone a significant decline. Furthermore, rather lower densities than indicated are a more likely scenario. As part of our advice into the Norfolk Vanguard pre-determination, Natural England estimated nesting densities from four sub-colonies colonies in the Walney area (data from Sarah Dalrymple at Cumbria Wildlife Trust, pers comm). These showed a range of density values of 0.002 to 0.047 pairs/m2.</p> <p>Natural England also highlights that large Gulls often nest in mixed species colonies, and it is therefore likely that some of the nest sites will be used by herring Gull rather than lesser black-backed Gull.</p>	Natural England's advice on breeding densities is included in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2).
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	Fence design, "Wire mesh size no more than 50 mm spacing and horizontal wires at 100mm spacing" It is worth considering the risk of excluding foxes, currently deemed to be the primary predator concern, but not rats which may also be a (under-reported) problem or could become a problem in a fox-free enclosure.	Noted, the nature of fencing (if fencing is selected as the compensatory measure) would be designed based on the relevant predators presenting a pressure to the lesser black-backed gull breeding colony.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	<p>"The latter (compensation) is several orders of magnitude greater than the former (predicted impact), which means any mortality 'debt' accrued due to a delay of one to two years in implementation could be rapidly and comprehensively repaid once the compensation becomes operational."</p> <p>This would very much depend on the speed and scale of colonisation at the site. If colonisation is slow and the target population is not reached for some time the mortality debt will accrue and become harder to overcome. If the measure is not successful any adaptive management will have to account for the accumulated debt. It should also be considered that there is another inherent lag in the measure becoming 'operational' as adult birds are required to fulfil the requirements of the measure. We also note that the predator fence installed on Orford Ness before the 2023 breeding season did not result in occupancy by lesser black-backed Gull in year 1.</p>	The proposed scale of the compensation is described in Section 6.3 of the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2) and the approach to adaptive management is described in Section 6.6.4 of the same document.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	<p>"This approach is also considered appropriate given the small magnitude of the contribution to the in-combination impact from North Falls, which is 14% of the total."</p> <p>Natural England considers 14% of the incombination total to be a significant contribution.</p>	The compensatory measures described in the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2) will compensate for the North Falls contribution to the in-combination effect (now 4.8% - 5.3% of the in-combination total)
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	<p>"This approach is considered appropriate given the large degree of over-compensation"</p> <p>Natural England does not agree with the characterisation of the measure as delivering a "large degree of overcompensation." There remains a great deal of uncertainty around the likely population that will (hopefully) colonise the site. It is of note that at present there is no agreed impact estimate to compensate for. We highlight that the application of a ratio is designed to account for a number of factors (e.g. uncertainty), not simply to ensure a reasonable level of benefit is delivered by the measure.</p>	Quantification of the effect being compensated is described in Section 3 of the Lesser black-backed gull Compensation Document (Document Reference: 7.2.2) and the proposed scale of the compensation is described in Section 6.3 of the same document.
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	The Applicant considers that predator control to improve the breeding success of lesser blackbacked Gull, either at the AOE SPA, on land near to the AOE SPA or at another SPA, such as the Morecambe Bay and Duddon Estuary SPA, is a feasible measure." Agreed.	Noted
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	<p>"Some investigation of this method by NatureScot has indicated that it could potentially be successful as a compensation measure; a report detailing the investigative work carried out is not currently publicly available, but the results of this work may help to demonstrate the viability of this option to compensate for losses of lesser black-backed Gulls at AOE SPA."</p> <p>Natural England would welcome the opportunity to review this report.</p>	Noted
Lesser Black-backed Gull	08/01/2024	Natural England Lbbg Compensation Options Technical Note	<p>"An over-compensation ratio of 3:1 would be appropriate for the Project, thus release of 36 chicks per year would be predicted to result in 18 breeding age adults. The success of this as compensation would be determined through annual monitoring of breeding numbers within the AOE SPA using standard breeding seabird survey methods and resighting of released birds (via leg rings). An increase in the number of pairs, and/or breeding success of the same size, or greater than, North Falls's predicted impact (or multiple projects) would be considered to signify successful compensation."</p> <p>In order for the coherence of the NSN to be maintained, and the measure deemed successful, released birds would need to recruit into the AOE SPA breeding population (or failing that, other sites in the network for lesser black-backed gull).</p>	Rearing and release of chicks is not considered further at this time. If sufficient information becomes available, it could be considered in future as a potential adaptive management measure (if required) and the scale would be determined in consultation with Natural England.

Species	Date	Consultation	Comment	Applicant Response
Auks; Lesser Black-backed Gull; Kittiwake; Red-throated Diver	11/04/2024	Offshore Ornithology Expert Topic Group Meeting April 2024	<p>Topics covered:</p> <ul style="list-style-type: none"> <li>- Project update</li> <li>- Compensation RTD</li> <li>- Feedback on Kittiwake compensation note</li> <li>- Compensation LBBG</li> <li>- Feedback on Auk compensation note</li> </ul>	Feedback from this meeting has been considered in developing the compensatory measures.
Guillemot and Razorbill	26/04/2024	Natural England Initial Review of Compensatory Measures Guillemot and Razorbill	Predator eradication or management for auks is potentially out of proportion to the scale of impact. In any event, there are very limited options for sites that could be delivered at a project alone scale. It is unlikely that the short-listed sites are appropriate for delivery of this measure.	Noted and Natural England's advice below regarding proportionate compensatory measures is welcomed.
Guillemot and Razorbill	26/04/2024	Natural England Initial Review of Compensatory Measures Guillemot and Razorbill	The current evidence base suggests that the Looming Eye Buoy (LEB) is not effective technology. Furthermore, some efforts to address bycatch by way of technological interventions have resulted in unintended consequences which may have exacerbated overall bycatch risk.	This option is not considered further.
Guillemot and Razorbill	26/04/2024	Natural England Initial Review of Compensatory Measures Guillemot and Razorbill	Provision of Artificial Nesting Sites (ANS) for auks remains highly experimental with no clear evidence to inform the potential scale of delivery.	Noted, however the measure has been retained as an option in the Guillemot and Razorbill Compensation Document (Document Reference: 7.2.5) submitted with the DCO application, to enable it to be considered further should information become available.
Guillemot and Razorbill	26/04/2024	Natural England Initial Review of Compensatory Measures Guillemot and Razorbill	<p>Considering the scale of impact and issues around the compensatory measures identified, Natural England recommends the development of a compensatory measure to investigate the status of smaller guillemot colonies (such as those in Devon and Cornwall) that have generally been subject to historical declines. If pressures are identified that could be driving declines or suppressing breeding success at those colonies, then appropriate remedial actions (e.g. habitat management, disturbance reduction, targeted predator control) could be undertaken to facilitate recovery of those populations where possible and deliver the required level of compensatory benefits.</p> <p>We highlight the potential benefit of delivering this measure collaboratively with other projects seeking to develop compensatory measures for relatively small impacts to auks and can confirm that we have advised Five Estuaries, Rampion 2, and Outer Dowsing Offshore Wind Farm projects regarding our views on this approach. With respect to Outer Dowsing, we recommend reviewing their examination submission (Without Prejudice Additional Measures for Compensation of Guillemot and Razorbill), noting that the measure is considered a 'secondary' one i.e. supporting rather than being their principal compensatory measure.</p> <p>We offer the following guidance on developing this measure:</p> <ul style="list-style-type: none"> <li>• Both the historical status and potential of identified sites should be fully considered, noting that any historical maximum population may itself have been significantly suppressed.</li> <li>• Any sites designated for their seabird populations should be clearly identified, and implications considered with respect to existing or proposed management etc.</li> <li>• A significant level of observational data may be required to identify pressures and the impacts of those pressures at sites, noting that relevant local knowledge may be limited or purely anecdotal. Given timescales, the 2024 breeding season is a critical period for gathering this information.</li> </ul>	Natural England's advice below regarding proportionate compensatory measures is welcomed and discussions are ongoing regarding collaboration with other offshore wind farms. Natural England's advice has informed the Guillemot and Razorbill Compensation Document (Document Reference: 7.2.5).



**NORTH FALLS**

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## **HARNESSING THE POWER OF NORTH SEA WIND**

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