

Volume 9: Appendices (Offshore)

# Appendix 15.9

## Method Statement Review Consultation and Justification Log

North Irish Sea Array Windfarm Ltd

# NPWS Consultation Log

North Irish Sea Array Offshore Windfarm



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APEM Group

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## North Irish Sea Array Windfarm Limited Acronyms

Term	Definition
BTO	British Trust for Ornithology
BWI	BirdWatch Ireland
CIEEM	Chartered Institute of Ecology and Environmental Management
CRM	Collision risk modelling
DAS	Digital aerial survey
ECC	Export cable corridor
EIAR	Environmental impact assessment report
ExA	Examining authority
GPS	Global Positioning System
HRA	Habitat regulations assessment
IBM	Individual based modelling
KM	Kilometres
mCRM	Migratory collision risk modelling
NIS	Natura impact statement
NISA	North Irish Sea Array Offshore Wind Farm
NISA Ltd.	North Irish Sea Array Offshore Windfarm Limited
NPWS	National Parks Wildlife Service
OWF	Offshore wind farm
PVA	Population viability analysis
sCRM	Stochastic collision risk modelling
SD	Standard deviation
SNB	Statutory nature conservation body
SOSS	Strategic ornithological support services
SPA	Special protection area
UK	United Kingdom
ZOI	Zone of influence



## North Irish Sea Array Windfarm Limited

### 1 Background

- 1.1.1 This document has been prepared by Arup and GoBe Consultants Limited (GoBe) on behalf of North Irish Sea Array Windfarm Limited (NISA Ltd).
- 1.1.2 The North Irish Sea Array (NISA) Offshore Wind Farm (OWF) (hereafter 'proposed development') is proposed for construction 11.3 km off the east coast of Ireland (at their nearest points to the mainland). The project will consist of offshore wind turbines, an offshore substation platform, inter-array cables and on- and offshore cables taking power to an onshore converter station. The area considered in the context of offshore ornithological receptors includes the entire array area, covering 89 km<sup>2</sup>, an asymmetric 4 km buffer surrounding the array area, and the offshore Export Cable Corridor (ECC) covering a further 67.8 km<sup>2</sup>.
- 1.1.3 This document outlines consultation undertaken to determine the assessment methodologies used to inform Chapter 15: Offshore and Intertidal Ornithology and associated appendices. A joint method statement was prepared by all the Irish East-coast Phase One Projects (namely, Oriel Windfarm, North Irish Sea Array, Dublin Array, Codling Windpark and Arklow Bank Windpark 2), that sets out what is considered the most appropriate assessment approaches for ornithological assessment, based on current guidance and best practice (see Appendix 15.7: Method Statement - Offshore Wind Ornithology Assessment for East Coast Phase One Projects). Subsequently a response to this method statement was received from NPWS (Appendix 15.8: NPWS Review of Method Statement). This note summarises any key feedback and includes justification for any deviation from the advice provided on the Irish Phase One Method Statement and therefore this appendix should be read alongside both Appendix 15.7: Method Statement - Offshore Wind Ornithology Assessment for East Coast Phase One Projects, and importantly Appendix 15.8: NPWS Review of Method Statement.



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### 2 Consultation table

Table 1 – Summary of consultation and justification for assessment approaches.

Relevant Quote from Phase One Method Statement	NPWS Response	Relevant section	Applicant response / justification for approach within the ornithology assessment
NA	Methods to determine the distribution and abundance of each species, especially seabirds, with the latter expressed in terms of density (typically individuals km <sup>2</sup> ) and population size estimates within defined areas (e.g. the site and site plus specified buffer) should be consistent across the projects, which may or may not include specific adjustments linked to any differences in data gathering.	1.2.1 Underpinning data	Survey data for the proposed development is already collected but it does align with the advice provided in the response. Methodology is in line with United Kingdom (UK) statutory nature conservation body (SNCB) guidance and comparable with data collected for other OWFs and with other Irish projects. Industry standard availability rates have been applied for diving species to account for birds not surveyed due to them being under water. Density has been expressed in terms of individuals km <sup>-2</sup> .
NA	For each potential receptor, Chartered Institute of Ecology and Environmental Management (CIEEM, 2019) recommend that a relevant Zone of Influence (Zoi) is established and characterised with a robust evidence base, bearing in mind that the Zoi will vary depending on the characteristics of environmental features and the ecology of the species concerned.....Wherever possible, generic ranges are then best refined by site-specific information for a particular species (e.g. from tracking) as this can vary considerably on	1.2.2 Ornithological receptors	ZOI was established based on foraging data (Woodward et al., 2019). Generic ranges only are used because there is a lack of high-quality tracking data from SPAs (with a large enough sample size) in proximity to the proposed development. Assessments based on these generic zones of interest are



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	<p>an individual and colony basis from generic values (see Cleasby et al. 2023).</p>		<p>routinely accepted within UK applications. Many of the foraging ranges are defined using data collected during the incubation period rather than the chick rearing period, when birds are more constrained.</p> <p>Where relevant site-specific information for particular species has been used for context. However, in general, the use of these generic foraging ranges can be viewed as being precautionary. The addition of a single standard deviation (SD) to the foraging ranges adds further precaution and ensures all sites with potential connectivity are included within the assessment.</p>
<p>NA</p>	<p>"Species identified as breeding regularly in Britain and Ireland along the east Irish coast adjacent to the Projects:</p> <ul style="list-style-type: none"> <li>- Black-legged Kittiwake <i>Rissa tridactyla</i></li> <li>- Black-headed Gull <i>Chroicocephalus ridibundus</i></li> <li>- Common Gull <i>Larus canus</i></li> <li>- Great Black-backed Gull <i>Larus marinus</i></li> <li>- European Herring Gull <i>Larus argentatus</i></li> <li>- Lesser Black-backed Gull <i>Larus fuscus</i></li> <li>- Sandwich Tern <i>Thalasseus sandvicensis</i></li> <li>- Little Tern <i>Sternula albifrons</i></li> <li>- Roseate Tern <i>Sterna dougallii</i></li> </ul>	<p>1.2.2 Ornithological receptors</p>	<p>Consideration is given to all these species within the EIAR (Environmental impact assessment report) / Natura impact statement (NIS).</p> <p>Sensitivity to impacts and abundance within the site were considered when determining the vulnerability of each species.</p> <p>Consideration is also given to intertidal/vantagepoint survey data</p>





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Relevant Quote from Phase One Method Statement	NPWS Response	Relevant section	Applicant response / justification for approach within the ornithology assessment
	<ul style="list-style-type: none"> <li>- Common Tern <i>Sterna hirundo</i></li> <li>- Arctic Tern <i>Sterna paradisaea</i></li> <li>- Common Guillemot (Common Murre) <i>Uria aalge</i></li> <li>- Razorbill <i>Alca torda</i></li> <li>- Black Guillemot <i>Cephus grille</i></li> <li>- Atlantic Puffin <i>Fratercula arctica</i></li> <li>- Northern Fulmar <i>Fulmarus glacialis</i></li> <li>- Manx Shearwater <i>Puffinus puffinus</i></li> <li>- Northern Gannet <i>Morus bassanus</i></li> <li>- Great Cormorant <i>Phalacrocorax carbo</i></li> <li>- European Shag <i>Gulosus aristotelis</i></li> </ul> <p>In general, it is recommended that all available evidence is considered as sole reliance on site-specific surveys may risk the exclusion of species that are less readily sampled by particular methods with known or likely biases (e.g. seaduck or divers during boat-based surveys or petrels and shearwaters in digital aerial surveys – see Webb et al. 2019). This approach is recommended for migratory seabirds, which may be missed in a standard monitoring programme based on a single monthly visit."</p>		<p>when screening/scoping out migratory species. Site specific digital aerial survey (DAS) data are adequate for informing the assessments of all listed species, as it provides robust reliable data, and does not disturb birds like boat-based surveys. Species considered to be at risk of poorer sampling from DAS (e.g. petrels and shearwaters) are considered to be low risk in relation to offshore wind impacts in this region.</p> <p>In certain assessments (e.g. assessments of impacts of changing distribution) the site specific DAS data have been augmented with the data collected by Jessop et al. (2018).</p> <p>Collisions of migratory seabirds have been assessed through migratory collision risk modelling (mCRM) analyses. See Appendix 15.4: Offshore and Intertidal Ornithology Migratory Collision Risk Modelling for more detail.</p>
<p>"Each project will provide a mean output which can be used in the</p>	<p>There is a need to provide a rationale for why only the mean is to be considered; and not also uncertainty and/or variability in values.</p>	<p>2.1.1 Collision risk (choice of method)</p>	<p>The use of mean has been used in other UK-based cumulative-in-combination assessments to date.</p>



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cumulative/in-combination impact assessment.”			There is adequate precaution inbuilt into the assessments from which the mean is derived. Therefore, the mean impact is accepted as appropriately precautionary for assessment of project alone impacts, and it is anticipated that future alone and in-combination assessments will also use this predicted level of impact. Whilst the CRM outputs, for example, are based on mean values, CRM input parameters incorporate variation in input parameters, which provides a confidence in the results (e.g. 95% confidence intervals), whilst avoiding stacking of upper and lower limits. Therefore, uncertainty/variability is still captured in the assessment.
“The use of Band models will be selected on a project-by-project basis.”	At face value, it is not clear if this refers to the use of the various Options in the original Band (2012) model or the equivalent Band Options available within the preferred sCRM.	2.1.1 Collision risk (choice of method)	The Phase One Method Statement refers to sCRM which aligns with current guidance and has been used in the assessment found in Appendix 15.3: Offshore and Intertidal Ornithology Collision Risk Modelling Assessment.
“Site-specific flight heights may be used to inform the	Moreover, flight height data delivered by photogrammetry during DAS is unlikely to be accurate, particularly for sexually	2.1.1 Collision risk (choice of method)	The proposed development will not be presenting site-specific flight



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Relevant Quote from Phase One Method Statement	NPWS Response	Relevant section	Applicant response / justification for approach within the ornithology assessment
proportion of birds at collision risk height (Band option 1; Band, 2012) if robust data is available from DAS or boat-based surveys.”	dimorphic species, as variability in bird length leads to error in flight height estimation.		height data based on DAS due to inaccuracies in flight height estimation using these methodologies. A more accurate and precautionary suite of (industry standard) flight heights have been used, in place of site specific heights. Detailed methods can be found in Appendix 15.3: Offshore and Intertidal Ornithology Collision Risk Modelling Assessment.
“The proposed seabird parameter values for a variety of bird species are presented in Table 2.1.”	Overall, there is a need to undertake further review and update of the information in Table 2.1, with particular emphasis on data from tracking studies.	2.1.1 Collision risk (choice of method). Specifically relating to the seabird parameter values presented in Table 2.1	Although there is some evidence of higher species-specific avoidance rates, the use of generic ‘species group’ avoidance rates are industry standard and recommended in both Natural England and NatureScot guidance. These rates are more precautionary and based on the recommended flight speeds, and therefore considered the most robust approach. Lower flight speeds generally result in reduced collisions, and as such, it is precautionary to use established values. Detailed methods can be found in Appendix 15.3: Offshore and



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			Intertidal Ornithology Collision Risk Modelling Assessment.
<p>“where species present within a project array have been excluded from CRM, rationale will be provided on species-by-species basis”.</p>	<p>Further justification is required for the selection of what would appear to be mainly breeding species and one passage species in the list of species provided; notwithstanding that 2.1.3 states that “where species present within a project array have been excluded from CRM, rationale will be provided on species-by-species basis”. The meaning of the word “vulnerable” also needs to be explained. If this refers to the propensity of a species to fly at a height that coincides with the area occupied by rotating blades, it is noted that even species that tend to fly at a height lower than the sweep of turbine blades, the overall flight-height distribution may incorporate strike-height under particular conditions (e.g. higher wind speeds). Where a species is particularly numerous, modelling of collision risk may produce fatality estimates that are of concern for particular populations. Thus, care should be taken to wrongly dismiss species that are thought to be “invulnerable”. Manx Shearwater is a case in point (see 3.1.4 below).</p>	<p>2.1.2 Collision risk (species included in CRM)</p>	<p>Further consideration of screened/scoped out species for collision is provided on a case-by-case basis in the NIS/EIAR. Further consideration to vulnerability is also provided in the EIAR (including consideration of scoping in/out species based on factors such as abundance/frequency in the DAS data, not vulnerability alone) - see 15.4.1.4 of the EIAR.</p> <p>In the case of Manx shearwater, the proposed development has undertaken CRM for this species as a precautionary approach. Likewise, other species deemed to be at very low risk for collisions (due to flight height or other aspects of their ecology) have been assessed for this impact (e.g. fulmar, little tern), even when densities within the site suggest impacts would be extremely low.</p>
<p>It is the intention of all projects to account for displacement of gannet from the array area in the</p>	<p>" It is not clear what this means - does it mean that the displacement rate is being used to fix the avoidance rate for collision risk? Or alternatively, that the birds assumed to die from the displacement risk are excluded from the collision</p>	<p>2.1.3 Collision risk (Collision vs displacement)</p>	<p>For the proposed development, the approach used reduced collision impacts by 70% (with a range of 65 - 85% also presented) to account for</p>



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<p>CRM results to avoid double counting the impact from displacement and CRM. Projects will present CRM results accounting over a range of 65 - 85% displacement (Natural England, 2022).</p>	<p>risk calculations? Clarification is therefore needed on how displacement is accounted for when considering collision risk: i.e., is the avoidance rate for the CRM assumed to be equal to the displacement rate?"</p>		<p>macro-avoidance, i.e. avoidance of the whole array area – akin to displacement. These rates are well evidenced at windfarms across Europe. The method simply involved multiplying CRM results by 0.3 (or 0.35 and 0.15 respectively). Alternatively, this avoidance can be incorporated into avoidance rates, though the same outcome is expected with this method. This approach has been accepted by SNCBs with regard to recent applications in the UK (e.g. Outer Dowsing &amp; SEP&amp;DEP). Detailed methods can be found in Appendix 15.3: Offshore and Intertidal Ornithology Collision Risk Modelling Assessment. Detailed methods can be found in Appendix 15.3: Offshore and Intertidal Ornithology Collision Risk Modelling Assessment.</p>
<p>NA</p>	<p>Moreover, as a more general point it is noted that the approach developed by Natural England accords to the high levels of displacement of Northern Gannet in the non-breeding season as a result of the results of....yet to detail the response of breeding birds that are under pressure to provision chicks and thus may be less readily displaced and</p>	<p>2.1.3 Collision risk (Collision vs displacement)</p>	<p>Further evidence will be reviewed if it becomes available, though currently it is not believed there is any reason to not apply 65-85% displacement to all collision estimates, and currently there are</p>



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	conversely be more vulnerable to collision monitoring of wind farms located away from breeding colonies.		no alternative breeding season avoidance rates provided by UK SNCBs. Any breeding season rates sourced from individual projects would need to be applied with care as the degree of displacement would likely be a result of variable factors such as distance from windfarm, availability of food within forging range, size of windfarm and more. SNCBs have accepted the application of this rate through all bio-seasons at recent UK applications.
“In line with general guidance, the Projects propose to use a matrix approach ... in the absence of any novel models or methods, the Projects have agreed that this is the preferred solution in the Republic of Ireland”	Where sufficient data exist for implementation of these more advanced modelling approaches, guidance should consider advising the use of IBMs, potentially alongside use of the Displacement Matrix for comparison of predicted impacts.	2.2.1 Disturbance and displacement (choice of method)	The proposed development accepts that more detailed modelling approaches such as IBMs may provide more reliable results but little to no guidance is currently available about how to build and parameterise them. In addition, as all other projects have used a matrix approach it allows for direct comparison and cumulative assessment approach. The approach taken by the proposed development is considered to be appropriate and aligns with current guidance.



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The most probable ranges for each species will be highlighted and form the basis of the impact assessment.	There is a need to clarify the sense in which these are "most probable", and the evidence that underpins this. The table of mortality rates (Table 3.1) does not appear to reflect recent guidance for most of the species in both England and Scotland, in which mortality rates of up to 10% during the breeding season have been assessed for Atlantic Puffin, Razorbill, Common Guillemot and Red-throated Diver (e.g. Hornsea 2, Hornsea 3, Norfolk Boreas, East Anglia 1, East Anglia 2, East Anglia 3, Norfolk Vanguard), and up to 5% for Northern Gannet (e.g. Thanet Extension).	2.2.2 Disturbance and displacement (mortality rates)	The use of 5% as the upper range for mortality is fully justified within the EIAR/NIS on the basis that 10% is considered highly over-precautionary based on available evidence. 5% is the maximum rate advocated for by both Natural England or NatureScot for all of the most recently consented projects, although generally they make determinations based on lower mortality rates. Table 15.36 in Chapter 15 - Offshore Ornithology presents recent UK Secretary of State conclusions, consistently using a 2% mortality rate. Recent evidence (i.e. more recent than the majority of habitat regulation assessment (HRA) decisions) suggest that even 1% mortality is precautionary, so the use of a very precautionary 5% as the upper range by the proposed development is justified.
a weighted-mean approach to estimating abundance	There is a need to clarify how the weights would be calculated within this approach.	2.2.3 Disturbance and displacement (density data)	The proposed development has not used a weighted approach - the approach used is a standard methodology as used in England and Scotland, and is described in the Technical Baseline (Appendix 15.1).



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<p>“seven-month non-breeding bio-season”</p>	<p>There is a need to clarify the evidence for using a seven-month non-breeding season, and how this may/will be allowed to vary across species and regions.</p>	<p>2.2.3 Disturbance and displacement (density data)</p>	<p>Seasons have been defined based on Furness (2015). Any deviations from this have been justified within text. In some cases, ‘non-breeding’ season will comprise of more than one bio-season – e.g. including spring and autumn migration periods. For some species, such as terns, the breeding season will be shorter than five months and as such, the non-breeding season will be longer than seven months.</p> <p>Furness et al (2015) define species specific bio-seasons for the whole of the UK including UK western waters and the Irish Sea. Seabird phenology does change with latitude, but changes are slight (e.g. for guillemot, Icelandic breeding commences on average one week later than in the UK, so the bio-seasons presented in Furness <i>et al</i> are deemed appropriate.</p> <p>Site-specific DAS data has also been investigated to verify the Furness (2015) bio-seasons. Where there is any obvious deviation from the</p>





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			Furness (2015) bio-seasons these have been addressed in Appendix 15.1: Offshore and Intertidal Ornithology Technical Baseline
“Kittiwake will not be assessed for displacement because they have low habitat use specificity and have considerably large foraging ranges over which they are likely to find alternative favorable foraging habitat. Additionally, there is limited evidence that they are displaced by wind farms”	There is a need to provide evidence underpinning the assertion of low habitat use specificity. The phrase “considerably large foraging range” is unclear, and is not a simple comparison with the list of species proposed for displacement assessment that includes Northern Gannet. There is a need to clarify the ‘limited evidence’ for displacement more fully – there is at least some evidence for displacement of Black-legged Kittiwake (see Vanermen & Stienen 2019). Therefore, a precautionary approach would be to include this species in displacement assessment. Uncertainty in the extent of displacement (displacement rate) can be varied using the Displacement Matrix and Individual Based Modelling (IBM) approaches.	2.2.3 Disturbance and displacement (density data)	Further justification for methodology is provided in the EIAR/NIS relating to why kittiwake is not considered for displacement, based on low levels of displacement sensitivity (Bradbury et al. 2014, which informs the vulnerability element of all screening for displacement), as well as relatively low densities (0.79 flying birds km <sup>-2</sup> ) within the offshore development area.
“Likewise Manx shearwater have vast foraging ranges and have very low vulnerability to displacement by offshore wind farms, scored 1 by Bradbury et al. (2014) and given a species concern index value of 2 by Furness et al. (2013).”	The likely interaction between Manx Shearwater and its potential prey resource considered above also provides further insight into the underlying reasons for displacement, which are currently poorly understood (Perrow 2019). However, changes in the distribution and abundance of important fish prey, especially small, lipid-rich pelagic ‘forage fishes’ such as sandeels <i>Ammodytes spp.</i> and clupeids (e.g. Atlantic Herring and European Sprat <i>Sprattus sprattus</i> ) may be especially important in driving any patterns of displacement. For this reason, consideration of ecosystem effects across all trophic levels should be incorporated into assessment.	2.2.3 Disturbance and displacement (density data)	Manx shearwater is included in the displacement assessment for the proposed development in the EIAR/NIS. Additionally, indirect effects due to impacts on prey species are considered as a separate effect for relevant species. Therefore, the assessment is aligned with the suggested approach.



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Relevant Quote from Phase One Method Statement	NPWS Response	Relevant section	Applicant response / justification for approach within the ornithology assessment
<p>“In general, it is acknowledged that the displacement assessment captures much of the potential impact from barrier effects. However, individual projects may provide a further analysis of the possibility that barriers to movement could have a detrimental effect on populations”</p>	<p>Details on what further analyses are intended should be provided here. Note that IBMs distinguish barrier effects from displacement, in contract to the Displacement Matrix.</p>	<p>2.2.4 Disturbance and displacement (barrier effects)</p>	<p>Further qualitative analysis on barrier effects has been undertaken based on available tracking data from key colonies or special protection areas (SPAs).</p>
<p>“However, projects are likely to redefine seasons for some species if obvious trends are found within the site-specific survey data (e.g. early post-breeding migration is detected).”</p>	<p>It is unclear what analyses are proposed here to establish whether Furness is appropriate to use – more details are required.</p>	<p>2.3.1 Breeding seasons (definition of season)</p>	<p>Bio-season definitions from Furness (2015) were verified against trends in the survey data (e.g., if there are obvious trends in the data. For example, abundances in months towards the end of the breeding season are inflated due to birds on post-breeding dispersal or on migration). This will be clarified further in Appendix 15.1: Offshore and Intertidal Ornithology Technical Baseline where relevant.</p> <p>In addition, for many species (e.g. guillemot) the breeding season is refined as the Furness definition can be seen as a period of colony attendance rather than a breeding</p>



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			<p>season. Furness defines the guillemot breeding season as March to July, yet breeding (i.e. egg laying) commences in guillemot in late April at the earliest, with most occurring in early May. As breeding season impacts are defined with the context of mean max foraging ranges (plus 1 SD), it is assumed that the breeding season should only apply to the period where these constraints are active. Guillemot energy budgeting changes substantially between April and May, suggesting that in April (and March) the constraints of needing to return to a nest, and thus the range over which a bird can forage, are not as restricted as they are in May – July.</p>
<p>Apportioning impacts from the Projects to specific designated (breeding) seabird populations during the breeding season is to be undertaken using the interim guidance from NatureScot, (2018)</p>	<p>It should be clarified as to whether the weights are rescaled to sum to one in the apportioning advice. It should also be clarified as to whether the distance from colony is distance by sea (e.g., avoiding land), and how this should be handled for species with inland breeding colonies (e.g., gulls). Finally, where viable, other apportioning methods should be considered. Specifically, the use of local GPS tracking data, or predictive colony-level utilisation distributions based on a habitat distribution modelling approach</p>	<p>2.4.1 Apportionment (breeding season method for apportioning)</p>	<p>Distance around land was used for all species. Distances to inland colonies are calculated as the shortest distance from the colony to the sea and then distance around land to the proposed development. There is insufficient local tracking data to inform an alternative approach at present.</p>



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			As suggested in the NPWS response, weights were rescaled to sum to one in the apportioning. Further information is presented in Appendix 20: Offshore and Intertidal Ornithology Apportioning Appendix.
Weights were rescaled to sum to one in the apportioning.”	More information required for inland apportioning distances	2.4.1 Apportionment (breeding season method for apportioning)	The shortest distance to coast from inland colonies, and distance around land from that point to the proposed development was used. This was considered the most accurate a robust way to measure distances from inland colonies due to seabird ecology. Details are presented in Appendix 20: Offshore and Intertidal Ornithology Apportioning Appendix.
“Where more than one colony count is available during the baseline survey years, the average of all counts will be used. All counts will be converted into the number of individual breeding adults.”	Consideration should be given to using the maximum of multiple counts for colony sizes, rather than the mean, as this would be more precautionary. Specific advice should also be provided for how counts should be converted to the number of breeding adults when counts of birds are not conducted with those units (e.g. Common Guillemots and Razorbills).	2.4.2 Apportionment (colony population sizes)	Using a maximum at one site will apportion fewer birds to other (potentially more sensitive) colonies and is therefore not necessarily more precautionary. The mean count was therefore considered more representative of actual numbers if multiple years are available. In addition, guillemot/razorbill numbers have currently not been adjusted to account for birds which may be absent during colony counts which



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			therefore represents a precautionary approach. Standard auk monitoring methods record the number of individual birds so there is no requirement to convert counts. If counts have been presented as breeding pairs, this will have been based on counts of individuals multiplied by 0.67 (Walsh et al. 1995), so reversing this will return the original number of auks counted.
With up to 5,000 simulations	It is more appropriate to give an exact or minimum number of simulations required.	2.5.1 PVA (Use of PVA)	For each model run, 5,000 iterations were used by the proposed development as a minimum. This is clarified in the PVA appendices (Appendix 15.6: Offshore and Intertidal Ornithology Population Viability Analysis & Appendix 13: Offshore and Intertidal Ornithology Population Viability Analysis)
“Initially, individual projects will complete a screening exercise to identify any migratory species that may pass through or nearby to their array area and screen out those that were unlikely to	A screening exercise using all available evidence is welcomed (see 1.2.2 above) understanding that there are a range of designated sites supporting migratory species, in particular Light-bellied Brent Goose. Consultation with BirdWatch Ireland should be undertaken to ensure relevant reports and literature are obtained.	2.6.1 Migratory non-seabirds and seabirds (screening)	The approach to migratory collision risk modelling was aligned with other Phase One Projects and justified in Appendix 15.4: Offshore and Intertidal Ornithology Migratory Collision Risk Modelling. In addition, consultation was undertaken with BirdWatch Ireland



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Relevant Quote from Phase One Method Statement	NPWS Response	Relevant section	Applicant response / justification for approach within the ornithology assessment
pass through the array in any meaningful numbers.”			and several datasets have been obtained from them.
“Assessments will follow the British Trust for Ornithology’s (BTOs) Strategic Ornithological Support Services (SOSS) ‘05’ project approach to assessment for migratory seabirds (Wright et al., 2012) as a modelling tool to quantify any risk to migrating birds.”	The use of the SOSS approach may be advanced or reconsidered given the recent initiative by the Scottish Government to undertake strategic study of collision risk for birds on migration including the further development of the sCRM. At least Work Package 1: Strategic review of birds on migration in Scottish waters is available (Woodward et al. 2023).	2.6.2 Migratory non-seabirds and seabirds (The SOSS Approach)	This has been considered and the new mCRM tool was used. Details for, and justification of the approach taken, are provided in the Appendix 15.4: Offshore and Intertidal Ornithology Migratory Collision Risk Modelling. Parameters provided in Woodward et al. (2023) were used to inform the mCRM.
N/A	Consideration is needed regarding how cumulative displacement impacts will be assessed both amongst the projects and in combination with other developments (existing and planned) which may impact on the same species. Transboundary impacts on designated sites should also be considered. Cumulative impact assessment is currently not addressed within the document supplied.	3 Responses to the questions raised	Cumulative and in-combination numbers have been presented as a total for all Phase One Project combined to include anonymity of individual project impacts before projects may have submitted. This was agreed between all Phase One Projects. The cumulative impacts sum to the same total and therefore this method has not affected any of the assessment conclusions.



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