

Volume 2: Appendices

**Appendix A21**  
**Additional Guillemot  
Ecological Evidence Note**



North Irish Sea Offshore Windfarm Limited

# Appendix A21: Additional Guillemot Ecological Evidence Note

North Irish Sea Array

**GoBe**  
APEMGroup

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## Acronyms

Term	Definition
AA	Appropriate Assessment
NIS	Natura Impact Statement
NISA	North Irish Sea Array
NWIS	North-west Irish Sea
OWF	Offshore Wind Farm
PFI	Projected Footprint of Infrastructure
SPA	Special Protection Area



## 1 Introduction

- 1.1.1 North Irish Sea Array Windfarm Ltd (NISA, hereafter referred to as ‘the Developer’) has been considering the Request for Further Information (RFI) issued by An Bord Pleanála (now An Coimisiún Pleanála) as well as the third-party submissions received following public consultation. At An Coimisiún Pleanála’s behest, the Developer has also continued to consult with stakeholders in respect of the 2024 planning application throughout 2024-2026. The Developer has refined elements of the design to respond to the third-party submissions, the continued public and stakeholder consultation and the RFI. Full details of consultation undertaken can be found in Appendix A2 of the SISAA.
- 1.1.2 Any cross reference to a chapter, section, table, image, figure or appendix within this document is to another location within the Addendum to the NIS unless explicitly stated otherwise. Any cross reference to anything included in the 2024 NIS will be clearly labelled as such.
- 1.1.3 The sections relevant to Appendix A21 Additional Guillemot Ecological Evidence Note in the RFI are included below.

RFI Section	RFI	Relevance to Chapter
1 (b)	The scientific information provided as part of the planning application documentation should be based on up-to-date survey reports and data. Accordingly, the applicant is requested to confirm/provide justification/verification that the information submitted in support of the planning application remains relevant and appropriate at the point of submitting further information or to update same as required.	<p>The timeframes associated with the RFI have necessitated a review of the datasets previously used in the 2024 NIS to ensure any necessary updates to the baseline environment are captured.</p> <p>This note provides supplementary evidence to inform the assessment of potential disturbance and displacement effects on the spatial distribution of common guillemot within the North West Irish Sea (NWIS) Candidate Special Protection Area (cSPA), in the context of the proposed North Irish Sea Array (NISA) Offshore Wind Farm (OWF).</p>
1 (c)	The applicant is requested to confirm whether any on-going or additional surveying has been carried out since the application was lodged and, if so, the applicant is invited to submit any further survey data results and analysis and update the planning application documentation, as appropriate.	Additional ornithological surveys have been undertaken since submission of the Application. These additional surveys are described in Section 5.4 of the NIS.
8 (c) i	Displacement Methodology: The Board is satisfied that the applicant has used the industry standard Displacement Matrix approach. However, the Board notes that the applicant has based conclusions in relation to displacement on its preferred rates for	The Developer acknowledges the Board’s queries and has assessed displacement for gannet and auks using the displacement and mortality rates advised in NatureScot (2023a) Guidance Note 8 (addressed



	<p>displacement and mortality of auks and Northern Gannet (50% displacement and 1% mortality for auks, 70% displacement and 1% mortality for Northern Gannet <i>Morus bassanus</i>) instead of on industry recommended rates, and has taken these rates forward to Population Viability Analysis (PVA). The Board queries the applicant's use of preferred rates in relation to auks, due to NISA's close proximity to the coast and to breeding Common Guillemot and Razorbill <i>Alca torda</i> colonies (NWIS cSPA, Lambay Island SPA, and Ireland's Eye SPA). The applicant is requested to review the EIA and NIS to apply rates more appropriate to the location and scale of the development, and in line with industry recommendations (60% displacement and 1-5% mortality for auks; and 70% displacement and 1-3% mortality for Northern Gannet; NatureScot, 2023), to inform assessment and enable comprehensive conclusions. Where impacts with these rates result in a &gt;1% increase in baseline mortality rate, the mortality estimates should be taken forward to PVA.</p>	<p>throughout Section 5.4 of the NIS and discussed within this note).</p> <p>Furthermore, species have been taken forward for PVA where the updated impacts exceed 1% increase in baseline mortality.</p>
<p>8 e (vi)</p>	<p>The DAU observation states that the proposed development would reduce the habitat suitability for Common Guillemot of an area equating to 8.5% of the NWIS cSPA, which would contravene the Conservation Objective for the SPA to maintain its favourable conservation condition. The applicant is requested to justify its interpretation of the data in relation to Common Guillemot and, where appropriate, re-evaluate the data and re-interpret the consequences for the impacts on the Conservation Objectives of the NWIS cSPA, having regard to the observation from the DAU.</p>	<p>The Developer has acknowledged this request and has re-evaluated the data and interpreted the impacts on the Conservation Objectives for guillemot within the NWIS cSPA (addressed in Section 5.4 of the NIS and discussed within this note).</p>



## 1.2 Document Purpose

- 1.2.1 This document provides supplementary evidence to inform the assessment of potential disturbance and displacement effects on the spatial distribution of common guillemot within the North West Irish Sea (NWIS) Special Protection Area (SPA), in the context of the proposed North Irish Sea Array (NISA) Offshore Wind Farm (OWF) (hereafter referred to as the proposed development).
- 1.2.2 The document has been prepared as an additional Appendix to the Natura Impact Statement (NIS) in response to requests for further information (RFI) relating to the interpretation of displacement effects and their potential ecological consequences at a population level. Its purpose is to synthesise the relevant evidence base and provide a clear, evidence-led interpretation of key pathways by which displacement could affect guillemot, with particular focus on the non-breeding period and the functioning of the wider SPA. It should be noted, although the focus of the RFI 8(e)vi and in turn this document is on guillemot, the ecological evidence and arguments are also relevant for other seabird species including razorbill and kittiwake.
- 1.2.3 This document is a response to particular requests within the RFI, with the relevant text from the RFI 8 (c) i being:

*Displacement Methodology: The Board is satisfied that the applicant has used the industry standard Displacement Matrix approach. However, the Board notes that the applicant has based conclusions in relation to displacement on its preferred rates for displacement and mortality of auks and Northern Gannet (50% displacement and 1% mortality for auks, 70% displacement and 1% mortality for Northern Gannet Morus bassanus) instead of on industry recommended rates, and has taken these rates forward to Population Viability Analysis (PVA). The Board queries the applicant's use of preferred rates in relation to auks, due to NISA's close proximity to the coast and to breeding Common Guillemot and Razorbill Alca torda colonies (NWIS cSPA, Lambay Island SPA, and Ireland's Eye SPA). The applicant is requested to review the EIAR and NIS to apply rates more appropriate to the location and scale of the development, and in line with industry recommendations (60% displacement and 1-5% mortality for auks; and 70% displacement and 1-3% mortality for Northern Gannet; NatureScot, 2023), to inform assessment and enable comprehensive conclusions. Where impacts with these rates result in a >1% increase in baseline mortality rate, the mortality estimates should be taken forward to PVA.*

- 1.2.4 And RFI 8 (e) vi being:

*North-west Irish Sea SPA Common Guillemot: The DAU [Development Applications Unit] observation states that the proposed development would reduce the habitat suitability for Common Guillemot of an area equating to 8.5% of the NWIS SPA, which would contravene the Conservation Objective for the SPA to maintain its favourable conservation condition. The applicant is requested to justify its interpretation of the data in relation to Common Guillemot and, where appropriate, re-evaluate the data and re-interpret the consequences for the impacts on the Conservation Objectives of the NWIS SPA, having regard to the observation from the DAU.*



1.2.5 In doing so, the document distinguishes between behavioural response (e.g. avoidance or redistribution) and consequential effects (e.g. changes in survival, condition or productivity) and provides context on the commonly applied precautionary assumptions within offshore wind assessments.

### 1.3 Summary of Developer's Response to the RFI

1.3.1 The Developer's position is that while displacement is a recognised potential effect pathway for auk species, including guillemot, the available empirical evidence indicates that the magnitude and consequence of such effects on displaced individuals are typically lower, more variable and more context-dependent than is often assumed under precautionary assessment frameworks.

1.3.2 In particular, the response presented herein is based on the following key principles:

- Displacement is not equivalent to habitat loss: Changes in space use do not inherently result in loss of function where the habitat remains available and accessible. Effective habitat loss only arises from the presence of infrastructure which constitutes just 0.02% of the NWIS cSPA.
- Consequences are indirect and conditional: Displacement is a behavioural response, not a direct ecological impact through mortality. Its relevance to assessment arises only where redistribution leads to measurable effects on survival or productivity, which are highly dependent on spatial scale, season and environmental context.
- The NWIS cSPA functions as a large, open and dynamic system: The SPA comprises an extensive and heterogeneous marine environment in which prey resources and bird distributions are naturally variable, supporting a high degree of behavioural flexibility.
- Evidence indicates limited and variable responses to operational wind farms: Post-construction studies show that auk responses range from avoidance to neutral or partial use, with indications of habituation in some cases, rather than consistent, long-term exclusion.
- Precautionary assumptions overestimate effects: Standard approaches often assume high and uniform displacement rates and translate these into mortality using precautionary matrices, whereas the evidence suggests that actual demographic consequences are substantially lower.

1.3.3 On this basis, and consistent with the Developer's response to RFI 8(e) vi (North-west Irish Sea cSPA – Common Guillemot), the key question is whether sufficient suitable habitat remains available to support the guillemot population, in terms of timing and intensity of use of that habitat. This shifts the focus away from a narrow emphasis on the proportion of area subject to precautionary displacement assumptions, towards the overall capacity of the NWIS cSPA to support the population.



- 1.3.4 As set out in the RFI Report (8 (e) vi, area-based metrics (e.g. the 8.5% overlap cited by consultees) do not equate to a functional loss of habitat or a meaningful impact on the qualifying population and must instead be interpreted in the context of the NWIS cSPA's conservation objective. The relevant conservation objective, assessed in the NIS, requires maintenance of the favourable conservation condition of guillemot in the NWIS cSPA, where that conservation objective is defined by a list of attributes and targets. Assessment of this conservation objective requires assessment of population-level consequences, including the maintenance of population size, distribution and supporting habitat function.
- 1.3.5 Accordingly, this document provides a structured review of the main ecological pathways relevant to displacement (including prey competition, habitat capacity and behavioural flexibility), and demonstrates that, within the context of the NWIS cSPA, any redistribution associated with the proposed development is unlikely to result in measurable population-level effects.



## 2 North West Irish Sea cSPA

### 2.1 Background

- 2.1.1 The assessment of potential effects on the NWIS cSPA is undertaken in the context of the EU Habitats and Birds Directive, which is transposed into Irish legislation. In accordance with this legislation, an NIS has been produced, which requires consideration of a project's implications in view of the site's Qualifying Interests (QIs) and Conservation Objectives.
- 2.1.2 These conservation objectives provide the basis for determining whether a project would adversely affect the integrity of the site, with the key consideration being how the relevant conservation objective will be impacted.

### 2.2 Conservation Objectives

- 2.2.1 The conservation objective for the NWIS cSPA is to maintain the favourable conservation condition of guillemot in the NWIS cSPA, where that conservation objective is defined by a list of attributes and targets, as follows:
- **Population size** - No significant decline;
  - **Spatial Distribution** - Sufficient number of locations, area and availability (in terms of timing and intensity of use) of suitable habitat to support the population;
  - **Forage spatial distribution, extent, abundance and availability** - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target;
  - **Disturbance across the site** - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution; and
  - **Barriers to connectivity** - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA.
- 2.2.2 This assessment focuses on the first three attributes and targets outlined above, specifically:
- maintaining population size (i.e. no significant decline);
  - maintaining sufficient spatial distribution of suitable habitat; and
  - ensuring adequate prey availability and limited disturbance to support the population.
- 2.2.3 These attributes are framed around the maintenance of the qualifying population, rather than the preservation of all areas of the SPA in an unchanged state. In particular, habitat-related targets are expressed in terms of ensuring a sufficient area and availability of suitable habitat to support the population.
- 2.2.4 Accordingly, effects on site integrity in respect of these attributes are determined by reference to population-level outcomes, rather than simple spatial overlap or siting of infrastructure/operation of projects within the SPA boundary.



- 2.2.5 A reduction in the use or suitability of part of an SPA does not, in itself, indicate a failure to meet conservation objectives. The relevant consideration is whether the SPA continues to provide sufficient habitat and resources to support the qualifying population without significant decline. This distinction is particularly relevant for mobile seabird species such as guillemot, which utilise large, dynamic marine environments and are not dependent on fixed areas of habitat.



## 3 Key Ecological Evidence Relevant to Disturbance and Displacement

### 3.1 Consequences of displacement

- 3.1.1 Displacement is a behavioural response, not a direct ecological impact. Its relevance to assessment arises only where redistribution leads to measurable effects on survival or productivity. Current evidence indicates that this translation from behaviour to demographic consequence is uncertain and context-dependent, with limited empirical data demonstrating population-level effects (Searle *et al.*, 2018; Furness *et al.*, 2025).
- 3.1.2 Accordingly, the application of mortality rates to displaced birds represents a precautionary modelling assumption rather than an empirically evidenced effect. Evidence reviews indicate that guidance approaches, especially those advocated for by NatureScot (3-5% mortality) are hugely conservative, with mortality typically estimated at  $\leq 0.5 - 1\%$  of displaced birds (APEM, 2022; Searle *et al.*, 2018). This reinforces that the application of precautionary mortality rates within guidance approaches is likely to substantially overstate its ecological consequences.
- 3.1.3 Empirical post-construction evidence further supports this interpretation. Auk responses to OWF are variable and often limited, ranging from avoidance to neutral or partial use, with indications of habituation or within array use in some cases (Lamb *et al.*, 2024; Trinder *et al.*, 2022). These findings indicate that displacement is partial, dynamic and potentially reversible, rather than a sustained functional loss of habitat or birds from affected areas.

### 3.2 Effects of increased density on prey base

- 3.2.1 One possible mechanism by which displacement could result in ecological consequence is through increased density in surrounding areas, potentially elevating competition for prey. However, the evidence demonstrates that such effects are scale-dependent and unlikely to operate at the SPA level.
- 3.2.2 The NWIS cSPA represents a large, heterogeneous marine system in which prey resources are naturally patchy and dynamic. Guillemot foraging behaviour is adapted to this variability, with evidence showing that individuals routinely redistribute in response to prey availability (Stone *et al.*, 1995; Camphuysen, 2002).
- 3.2.3 Supporting this, guillemot exhibit flexible foraging strategies, including prey switching and adjustments in behaviour and movement, enabling them to respond to environmental variability without incurring significant energetic costs (Woo *et al.*, 2008; Thaxter *et al.*, 2013; Regan *et al.*, 2024).



- 3.2.4 Density-dependent competition is therefore only likely to become ecologically significant where increases in density are large, localised and sustained relative to the available resource base. Given the scale of the NWIS cSPA and the relatively small spatial extent of the Project Footprint of Infrastructure (PFI)<sup>1</sup> (6.8% of the SPA), any redistribution of birds would be diluted across a wide area, remaining within the range of natural variation in predator–prey interactions (see Modelled Density Estimates Figures in the NIS (Figure A5-3 and Figure A5-4)). For example, within the breeding and non-breeding seasons average density increases within the remainder of the SPA due to the highest estimate of displacement from the PFI +2km buffer are 1.69% and 4.14%, respectively.
- 3.2.5 Empirical evidence further indicates that prey depletion arising from an increase in seabird density is restricted to specific ecological contexts, primarily in the vicinity of large breeding colonies. Studies demonstrate that central-place foraging during the breeding season can generate localised zones of reduced prey availability (“Ashmole’s halo”), where foraging effort is spatially constrained (Birt *et al.*, 1987; Weber *et al.*, 2021). Prey depletion in these studies is confined to areas within the effective foraging range of colonies, where predator density and foraging pressure are highest. However, site-specific data show that the NISA array area is not a key seabird foraging area during the core breeding season. As a result, any increase in density is minimal and unlikely to occur at a scale of ecological relevance within the SPA.
- 3.2.6 Outside this context, particularly during the non-breeding season when birds are not spatially constrained, density-dependent depletion effects are not expected for guillemot within the NWIS cSPA. Accordingly, the diffuse redistribution of birds across a large and dynamic system such as the NWIS cSPA would not generate the concentrated foraging pressure required to produce measurable prey depletion.

### 3.3 Capacity of the wider SPA to absorb displaced birds

- 3.3.1 The capacity of the SPA to accommodate displaced birds depends on the availability and accessibility of alternative habitat, rather than the proportion of area overlapped by a displacement buffer (PFI +2km buffer). Evidence from tracking studies shows that guillemot utilise large marine areas across multiple spatial scales, particularly outside the breeding season (Frederiksen *et al.*, 2012; Woodward *et al.*, 2019).
- 3.3.2 Within this context, displacement is best understood as redistribution within an extensive habitat network, rather than loss of a discrete habitat unit. Post-construction studies demonstrate that such redistribution is typically limited or absent, with evidence of continued or partial use of operational wind farms (APEM, 2022; Lamb *et al.*, 2024; Trinder *et al.*, 2024).

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<sup>1</sup> The PFI represents a defined ornithology study sub-area within the overall array area, where all permanent offshore array infrastructure will be located. The PFI has been developed following design refinements to minimise spatial overlap with sensitive receptors and occupies just 57.7 km<sup>2</sup>, representing 2.5% of the NWIS cSPA.



3.3.3 Accordingly, area-based overlap metrics do not equate to functional habitat loss. The key question is whether sufficient suitable habitat remains to support the population without significant decline. Given the scale and heterogeneity of the NWIS cSPA, and the mobility of the species, the available evidence indicates a high capacity to absorb any limited redistribution without material ecological consequence (Figure A 1).



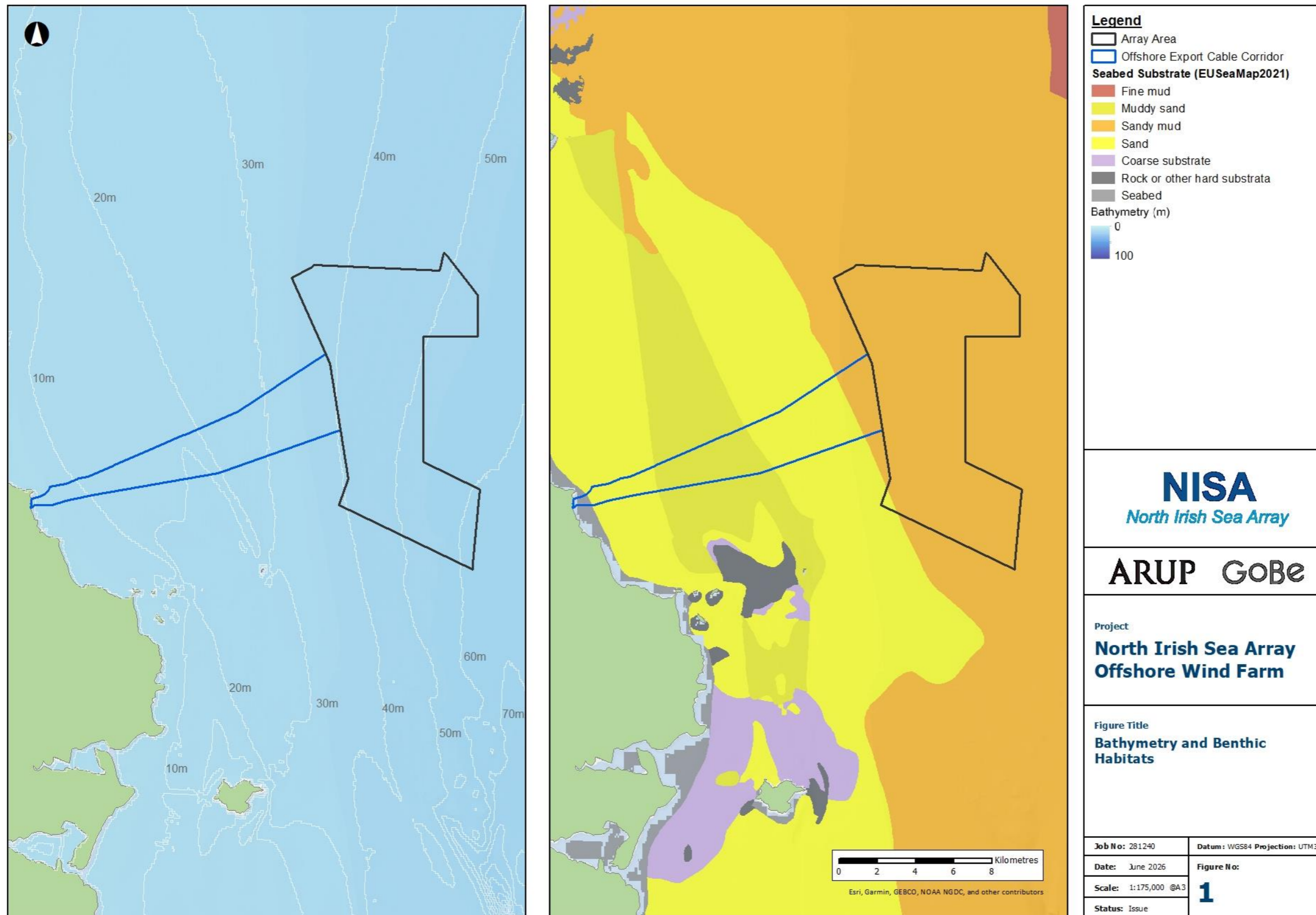


Figure A 1 Bathymetry and benthic habitats across the Array Area and along the ECC.



### 3.4 Existing natural variability and patchiness

- 3.4.1 Interpretation of any apparent displacement effect must take account of the inherently variable and patchy distribution of seabirds and their prey. Guillemot distribution at sea varies across spatial and temporal scales, driven by environmental conditions, prey availability and seasonal processes (Jessopp *et al.*, 2018; Dunn *et al.*, 2020).
- 3.4.2 This variability is reflected in the presence of persistent high- and low-density areas within the SPA (See Modelled Density Estimate Figures in the NIS (Figure A5-3 and Figure A5-4)), particularly during the post-breeding period when birds are widely dispersed. Observed density gradients across the NWIS cSPA therefore indicate that the system already accommodates substantial spatial variation in bird abundance, including areas that function as relatively high-density hotspots.
- 3.4.3 Within this context, any redistribution associated with the proposed development would result in only a limited increase in density outside the PFI +2 km buffer (maximum of 1.69% in the breeding season and 4.14% in the non-breeding season), which would be small in magnitude relative to the existing range of densities observed across the SPA. Such changes would remain well within the bounds of natural variability, and substantially lower than densities already occurring in established high-use areas (See Modelled Density Estimate Figures in the NIS (Figure A5-3 and Figure A5-4)).
- 3.4.4 Accordingly, modest localised increases in density do not represent a departure from baseline ecological conditions and are unlikely to generate meaningful effects on prey availability or habitat function at the scale of the SPA.

### 3.5 Behavioural flexibility of seabirds

- 3.5.1 Behavioural flexibility is a key mechanism by which seabirds respond to environmental variability and change. Guillemot are able to modify foraging behaviour, movement patterns and activity budgets in response to changing conditions (Dunn *et al.*, 2020; Regan *et al.*, 2024).
- 3.5.2 Individuals may favour particular areas or follow prey hotspots, but are capable of switching when conditions change. For example, tracking studies show that while guillemot often return to familiar foraging areas, they will adjust routes and exploit alternative locations based on local prey cues and foraging success, demonstrating that site use is responsive rather than fixed (Regan *et al.*, 2024). Tracking data from Lambay Island indicate that guillemot seemed to exhibit site fidelity to areas east of the island, with little evidence of use of the area within the PFI +2km buffer.
- 3.5.3 Evidence from multi-colony studies further demonstrates that, despite spatial differences in distribution and behaviour, energy expenditure patterns can remain consistent across populations, indicating the capacity to maintain energetic balance under varying environmental conditions (Buckingham *et al.*, 2023).
- 3.5.4 Taken together, this evidence indicates that guillemot are not dependent on specific areas of the marine environment, but instead operate within a flexible and responsive foraging system. This behavioural adaptability provides a mechanism by which birds can accommodate localised disturbance without sustained or population-level consequence.



### 3.6 Project footprint in the context of the wider SPA

- 3.6.1 The PFI represents a small proportion of the overall NWIS cSPA (6.8%), and therefore a limited component of the wider habitat network available to guillemot. This is supported by the 12 months of digital aerial surveys, which show that, on average, only 10.8% of the SPA guillemot population occurs within the PFI (+ 2 km area), with the majority (89.2%) distributed across the wider SPA. Therefore, confirming that habitat use is broad and not restricted to the overlap area. At this scale, ecological significance must be assessed relative to the functioning of the wider system, rather than the footprint itself.
- 3.6.2 Displacement does not equate to habitat loss, as the affected habitat remains used by a proportion of the population rather than functionally lost, even using the worst case assumptions of NatureScot, 40% of guillemot will not be displaced and as such will utilise this habitat. Empirical and modelling studies consistently demonstrate that responses to offshore wind farms are partial and variable, and that habitat remains available and functional (Searle *et al.*, 2018; APEM, 2022; Trinder *et al.*, 2024). Within a large and dynamic system such as the NWIS cSPA, a localised project footprint is therefore unlikely to materially affect habitat availability, accessibility or function. Assessment should accordingly focus on population-level outcomes, rather than spatial overlap metrics.
- 3.6.3 At a broader scale, the extent of habitat available to guillemot substantially exceeds the NWIS cSPA. During the non-breeding season, individuals are not spatially constrained and can utilise very large areas of the marine environment, effectively extending across the wider north-east Atlantic and beyond. During the breeding season tracking data indicates mean-maximum foraging ranges on the order of tens of kilometres (73.2km radius; Woodward *et al.*, 2019), demonstrating that birds operate across a large and connected habitat network.
- 3.6.4 These foraging ranges encompass the NWIS cSPA and the PFI within it as part of a much wider area of habitat routinely used by breeding guillemot. As such, the PFI represents only a small component of the area available to birds during both breeding and non-breeding seasons, and must be interpreted within the context of this broader and highly connected habitat network. Any localised displacement would therefore occur within this extensive area, resulting in redistribution rather than a meaningful reduction in habitat availability at the population scale.

### 3.7 Non-breeding season sensitivity

- 3.7.1 Sensitivity to displacement is generally expected to be lower during the non-breeding season than during breeding, as guillemot are no longer constrained by the need to provision chicks from a fixed location. Outside the breeding period, individuals disperse more widely, exploit a broader marine area and can adjust their movements in response to changing prey conditions (Camphuysen, 2002; Frederiksen *et al.*, 2012; Dunn *et al.*, 2020). In this context, local redistribution within the NWIS cSPA is less likely to generate the repeated energetic expenditure associated with central-place foraging.



- 3.7.2 This does not mean that the non-breeding season is energetically unimportant. Winter and late winter can present significant energetic challenges, associated with reduced daylight, lower temperatures and variable foraging conditions. However, available evidence indicates that guillemot respond to these constraints through behavioural adjustments in activity budgets and foraging behaviour (Dunn *et al.*, 2020). As a result, although non-breeding birds may be sensitive to adverse environmental conditions, their response to a localised displacement effect is moderated by their wider-ranging movements, behavioural flexibility and the absence of chick-provisioning constraints.
- 3.7.3 Accordingly, the non-breeding season should not be treated as one of uniformly high sensitivity, simply because birds are present in larger numbers. Higher abundance during post-breeding dispersal (June – September) and winter (October – March) reflects wider regional use of the SPA, rather than increased dependence on any specific area within it. During the post-breeding period there is an obvious increase in the number of auks using the NWIS cSPA but this is temporary and only lasts a couple of months as birds disperse out from breeding colonies. As such, any limited local response to the proposed development would be expected to result in temporary redistribution or short-term diversion, rather than sustained displacement. Consequently, this is unlikely to lead to meaningful reductions in bird survival or productivity, and therefore would not compromise the ability of the SPA to support its qualifying populations.



## 4 Conclusion

- 4.1.1 The evidence presented demonstrates that displacement represents a behavioural response rather than a direct impact.
- 4.1.2 Within the NWIS cSPA, the large, dynamic habitat, variable prey field, existing spatial variability in bird density, and behavioural flexibility of guillemot indicate a strong capacity for redistribution without measurable demographic consequence. Empirical evidence from operational offshore wind farms further shows that auk responses are variable and typically limited, rather than consistent or severe.
- 4.1.3 In this context, any displacement associated with the proposed development would be limited in extent and magnitude, occurring within the range of natural spatial variability, and would not materially affect the ability of the SPA to support the qualifying population.
- 4.1.4 Consistent with the NIS, the proposed development would therefore not adversely affect the integrity of the NWIS cSPA, when assessed in view of its conservation objectives. The NWIS cSPA will continue to provide sufficient locations, areas and availability of suitable habitat to support the guillemot population.



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