Addendum to the
Natura Impact Statement

NISA
North Irish Sea Array

Volume 2: Appendices

Appendix A18
Offshore and Intertidal Ornithology Apportioning

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Appendix A18 Offshore and Intertidal Ornithology Apportioning

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Acronyms

Term	Definition
BDMPS	Biologically Defined Minimum Population Scales
CRM	Collision Risk Modelling
GIS	Geographic Information Systems
HRA	Habitats Regulations Assessment
MMF	Mean-maximum Foraging
NWIS	North-west Irish Sea
OWF	Offshore Wind Farm
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 (ACPs) 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. Amendments are therefore required to Appendix 20 of the Natura Impact Statement (NIS). Full details of consultation undertaken can be found in Appendix A2 of the SISAA.

1.1.2 For the purposes of clarity, this document should be read in conjunction with Appendix 20 Offshore and Intertidal Ornithology Apportioning submitted as part of the 2024 NIS.

1.1.3 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.

1.1.4 Text in bold is only used throughout this document to indicate where changes are required, and what is subsequently driving them. Text in italics is text from a section of Appendix 20 of the 2024 NIS which is deleted, or quotations from other documents (as explicitly stated). Replacement text is in normal font.

1.1.5 Tables which have been updated from the 2024 Appendix 20, or entirely new tables, have been included in the Appendix A18. These can be identified by the "A" prefix in the caption. Any changes within updated tables, in comparison to tables within Appendix 20 of the 2024 NIS, are indicated by grey shading in the relevant cell, column or row, as necessary.

1.1.6 The sections relevant to Appendix A18 in the RFI are included below.

RFI Section	RFI	Relevance to Appendix
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.	More recent Special Protection Area (SPA) colony counts have been used to update the assessment of impacts on those SPAs. However, population counts have not been revised within the apportioning process. This decision was made under the assumption that colony sizes have changed in proportion to one another (i.e. all colonies have fluctuated by a similar relative amount).
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	Additional ornithological surveys have been undertaken since submission of the Application. These additional surveys are described in Section 5.4 of the NIS.

RFI Section	RFI	Relevance to Appendix
	analysis and update the planning application documentation, as appropriate.	
8. (a) (ix)	Breeding Season of Common Guillemot: The Board does not agree with the applicant's determination that the Irish east coast Common Guillemot *Uria aalge* breeding season ends at the end of June.... ....This has consequences when apportioning estimated mortality figures arising from displacement impacts to Common Guillemot populations breeding at Lambay Island SPA, Ireland's Eye SPA and others.	An updated section on guillemot is provided in Section 2.6, outlining the revised discussion on guillemot breeding bio-seasons. However, the Developer's overall position on guillemot bio-seasons remains unchanged. Further justification is presented in the RFI response and in Appendix A14: Offshore and Intertidal Ornithology Technical Baseline.

1.1 Project Background

1.1.1 There are no changes to this section. Refer to Section 1.1 of Appendix 20 of the 2024 NIS.

1.2 Apportioning

1.2.1 There are no changes to this section. Refer to Section 1.2 of Appendix 20 of the 2024 NIS.

2 Methodology

2.1.1 There are no changes to this section. Refer to Section 2 of Appendix 20 of the 2024 NIS.

2.1 Bio-seasons

2.1.1 In response to RFI 1 (b), the key change to this section is the addition of updated bio-seasons for kittiwake and razorbill, driven by trends in site-specific data and supported by the more recent additional 12 months of Digital Aerial Survey (DAS) collected by the Developer in the North West Irish Sea (NWIS) cSPA. The following text should be taken as additional text inserted at the end of Section 2.1 of Appendix 20 Offshore and Intertidal Ornithology Apportioning Appendix of the 2024 NIS:

2.1.2 In addition, alternative approaches to defining bio-seasons are presented for both kittiwake and razorbill based on site-specific survey data. For kittiwake, the migration-free breeding season (May to July) defined by Furness (2015) is included as an additional scenario. For razorbill, the 2025 breeding season excludes July 2025, reflecting trends observed in the site-specific dataset. Both approaches are described in detail within Appendix A14: Offshore and Intertidal Ornithology Technical Baseline.

2.1.3 There are no further changes to this section. Refer to Section 2.1 of Appendix 20 of the 2024 NIS.

2.2 Guillemot bio-seasons

2.2.1 There are no changes to this section. Refer to Section 2.2 of Appendix 20 of the 2024 NIS. Please note that further justifications on the approach to guillemot bio-seasons are now presented in Appendix A14: Offshore and Intertidal Ornithology Technical Baseline.

2.3 Proportion of breeding adults in the population

2.3.1 In response to RFI 1 (b), the only change for this section is the addition of the Arctic tern adult survival rate used in the NIS, which has been added to Table A2-1 below.

Table A2-1: Demographic data used for the breeding season apportioning of impacts for the NIS derived from Horswill and Robinson (2015) (replaces Table 2-2 in Appendix 20 of the 2024 NIS).

Species	Adult Proportions			Adult survival rate
	Adult proportion	Sabbatical rate	Adult proportion including sabbatical rate	
Guillemot	0.522	0.07	0.490	0.939
Razorbill	0.533	0.07	0.500	0.895
Gannet	0.568	0.10	0.51	0.919
Kittiwake	0.527	0.10	0.474	0.854
Roseate Tern	0.588	-	-	0.855
Common Tern	0.588	-	-	0.883
Herring Gull	0.422	0.35	0.275	0.834
LBBG	0.533	0.34	0.353	0.885
Puffin	0.534	0.07	0.500	0.906
GBBG	0.394	0.35	0.258	0.885
Manx shearwater	0.469	-	-	0.870
Fulmar	0.480	-	-	0.936
Arctic tern	0.662	-	-	0.837

2.3.2 There are no further changes to this section. Refer to Section 2.3 of Appendix 20 of the 2024 NIS.

2.4 Breeding season apportioning

2.4.1 There are no updates to this section. The apportioning approach applied in response to the RFI remains unchanged and continues to follow the NatureScot guidance used in the 2024 NIS. Refer to Section 2.4 of Appendix 20 of the 2024 NIS.

2.5 Colony population sizes

2.5.1 In response to RFI 1 (b), the key change for this section is clarity on the colony counts used throughout the assessment. Different colony counts were used in the Apportioning process (which has not been updated under the assumption that colony sizes have changed in proportion to one another (i.e. all colonies have fluctuated by a similar relative amount), and therefore the weightings will remain largely unchanged), compared with the assessment of population effects (which has been updated to use the most recent colony counts).

2.5.2 Accordingly, the paragraph in Section 2.5 of Appendix 20 Offshore and Intertidal Ornithology Apportioning Appendix of the 2024 NIS shall be deleted and replaced with the following two paragraphs:

- Within the apportioning process, colony sizes were based on data provided in Burnell *et al.* (2023) seabird count and the Seabird Monitoring Programme Database (JNCC, 2020), with data used from the year/s corresponding to the baseline surveys or the closest year available. Where more than one colony count was available during the baseline survey years, the average of all counts was used. All counts were converted into the number of individual breeding adults. The counts used within the apportioning process can be found in Table 3-1 of Appendix 20 of the 2024 NIS.
- When assessing population level effects within the population viability analysis (PVA) and NIS, the most recent robust count for each screened in qualifying interest of SPA was used. A table summarising the citation count and most recent robust count for each screened in qualifying interest of SPAs can be found in Table A2-2.

Additionally, Table 3-1 within Appendix 20 Offshore and Intertidal Ornithology Apportioning Appendix of the 2024 NIS, has been moved to this section and updated accordingly. Therefore, Table 3-1 shall be deleted and replaced with Table A3-1 below:

Table A2-2 Summary of the citation count and most recent robust count for each screened in qualifying interest of SPAs (replaces Table 3-1 of Appendix 20 Offshore and Intertidal Ornithology Apportioning of the 2024 NIS).

Site	Species	Citation	Year	Recent	Year
Ailsa Craig	Gannet	46,000	2001	61,930	2023
	Kittiwake	6,200	1990	824	2025
	Lesser black-backed gull	3,600	1990	345	2025
Bardsey Island	Puffin			396	2023
Blasket	Manx shearwater			7,168	2001
Bray Head	Herring gull			30	2025
	Kittiwake			1,792	2025
Carlingford Lough SPA	Common gull			36	2025
Copeland Islands	Manx shearwater			2,812	2007
Dalkey Island	Herring gull			38	2016
Grassholm	Gannet	66,000	2001	34,090	2025
Saltee Islands SPA	Lesser black-backed gull	328	1998-2000	262	2014
	Gannet	4,892	2004	9,444	2013-2014
	Kittiwake	4,250	1998-2000	1,290	2023
	Guillemot	28,724	1998-2000	35,420	2023
	Razorbill	5,010	2019	7,921	2023
Helvick Head	Kittiwake	1,037	1996/97	130	2018
Horn Head	Kittiwake	3,853	1999	3,640	2015
Howth Head	Herring gull			26	2025
	Kittiwake	4,538	1999	3,600	2025
Ireland's Eye	Guillemot	3,950	2001	5,051	2025
	Herring gull	492	1999	1,394	2025
	Razorbill	920	2001	1,706	2025
	Kittiwake	2,048	2001	788	2025
	Gannet			1,282	2025
Lambay Island	Kittiwake	7,894	2004	4,446	2024

Site	Species	Citation	Year	Recent	Year
	Lesser black-backed gull	266	2004	1,158	2024
	Common gull			8	2009
	Fulmar	1,170	1999	544	2024
	Guillemot	77,998	2004	59,610	2024
	Herring gull	622	2004	4,160	2024
	Puffin			144	2015
	Razorbill	7,610	2001	6,366	2024
North Colonsay and Western Cliffs SPA	Kittiwake	4,512	2009	11,014	2025
Puffin Island SPA	Lesser black-backed gull			1,052	2017
Puffin Island	Manx shearwater			12,658	2000
Rathlin Island	Kittiwake	6,822	1985	19,258	2023
Ribble Estuary	Lesser black-backed gull	3,600	1993	3,808	2024
Rockabill SPA	Common tern	702	2010	1,620	2024
	Arctic tern	500	2010	64	2024
	Roseate tern	2,186	2010	3,552	2024
Rum	Manx shearwater	61,000	1982	240,000	2001
Skerries Island	Herring gull			332	2025
Skomer SPA	Kittiwake			3,614	2025
	Lesser black-backed gull			11,476	2022
	Manx shearwater			910,312	2018
St Kilda	Gannet	100,100	1992	120,580	2013
Wicklow Head (2019/2021)	Kittiwake	1,912	2002	1,568	2024

2.5.3 There are no other changes to this section. Refer to Section 2.5 of Appendix 20 of the 2024 NIS.

2.6 Bespoke population sizes

North-west Irish Sea

2.6.1 **Following the collection of 12 months of DAS data by the Developer in the NWIS cSPA, this section has been updated owing to the presence of new data to inform population sizes. This whole section has been updated to reflect this, replacing the previous text in Appendix 20 Offshore and Intertidal Ornithology Apportioning Appendix of the 2024 NIS.**

2.6.2 Assessment of impact has been carried out against three populations for the NWIS cSPA. These are:

- Breeding populations of abutting SPAs;
- The NWIS cSPA citation population; and
- The maximum population estimate estimated from NWIS cSPA DAS data.

2.6.3 For abutting SPAs, the Developer considers potential contributions to the NWIS cSPA population from those abutting SPAs assessed through the site-specific assessment process. Where no adverse effect on individual SPAs has been identified, an assessment against the summed populations of those SPAs will, by definition, also conclude no adverse effect on site integrity.

2.6.4 Use of the citation population is problematic for this cSPA. For some species, there is no citation population provided. For others, the population presented in the citation documentation differs from the population provided in the conservation objectives documentation and as such it is not clear which one should be used. Finally, for some citation counts, it is unclear what time of year the data pertain to, so using these counts as reference populations against bio-seasonal impact predictions is not possible.

2.6.5 The Developer has also recently collected 12 months of DAS data covering the entire NWIS cSPA. A relevant population size can be derived by taking the maximum monthly abundance estimate across this 12-month dataset and using it as a proxy for the NWIS population. This represents a precautionary approach, as the DAS surveys provide only a snapshot of each month and therefore do not fully capture the total number of birds that may utilise the area over time (i.e., the true number of individuals contributing to the NWIS population).

2.6.6 This multi-population approach provides appropriate ecological context, avoids over-reliance on highly precautionary snapshot values, and reflects the fact that birds using the NWIS cSPA form part of a broader and mobile marine population, particularly outside the core breeding season. Citation and DAS population sizes are presented in Table A 2-3 below.

Table A 2-3 Population sizes used for the North-West Irish Sea SPA

SPA	Citation	DAS
Kittiwake	2,858	4,664
Black-headed gull	508	3,709
Common gull	2,866	6,408
Great black-backed gull	2,096	2,148
Herring gull	6,893	26,355
Lesser black-backed gull	-	3,419
Roseate tern	-	4,109
Common tern	-	3,934
Arctic tern	64	3,306
Common guillemot	66,166	326,565
Razorbill	27,025	131,615
Puffin	5,980	674
Red-throated diver	2,140	1,512
Fulmar	11,260	1,846
Manx shearwater	13,010	49,312

Guillemot

2.6.7 In response to RFI 8 (a) (ix), the key change for this section is to adapt the non-breeding season apportioning to be appropriate for the post-breeding season when the peak counts of guillemots are found in the Projected Footprint of Infrastructure (PFI)[1] +2 km buffer. The same methodology was used in the 2024 NIS, however, an additional correction was made to account for juvenile birds within the apportionment calculation. This update has been added to Table A2-4. Accordingly, the paragraph under *'Guillemot'* of Appendix 20 Offshore and Intertidal Ornithology Apportioning Appendix of the 2024 NIS shall be deleted, and replaced with the following:

- A bespoke non-breeding season population was used for guillemot to ensure that impacts were apportioned appropriately and proportionally to SPAs, reflecting that peak non-breeding counts occur during the post-breeding season.
- Peak counts for this species were encountered in September, and are likely to comprise a higher proportion of dispersing local breeders than would be expected later in the year. To reflect the likelihood that using a regional population or biogeographic reference population would not suitably account for the higher likelihood of local breeders being present, a bespoke post-breeding season population was defined.

[1] 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 km², representing 2.5% of the NWIS cSPA.

- September dispersal ranges of birds tracked from a western Scottish colony (Buckingham *et al*. 2023) were used to define the distance from the project within which birds could reasonably reach the project by September, through post breeding dispersal. Buckingham *et al*. (2023) shows how swiftly birds can move during the post-breeding dispersal period, despite being flightless due to moult. Their data show how birds dispersing from Colonsay (off the west coast of Scotland) can be in waters adjacent to the proposed development array area, and well beyond (reaching the northern coast of Anglesey) in the period between August 16 and September 15.
- The bespoke non-breeding reference population for guillemot is therefore the summed populations of all colonies within the range of dispersal defined by Buckingham *et al*. (2023). The apportionment to the relevant SPAs within this bespoke region is summarised in Table A2-4.
- The combined total of 326,348 breeding adults from the relevant SPAs was adjusted to include immature birds using a correction factor of 1.74 (Furness, 2015), resulting in a total post-breeding population of 567,846 guillemots for use in the apportioning calculations. This post-breeding population is substantially smaller than the wider regional population of 1,332,623 birds (Table 2-4 in Appendix 20 of the 2024 NIS), and therefore provides a more precautionary basis for assessment, as it results in a higher proportion of impacts being attributed to local colonies.

Table A2-4 Bespoke non-breeding guillemot regional population, and relevant apportioning (replaces Table 2-3 in Appendix 20 of the 2024 NIS).

SPA	Count (breeding adults)	Non-breeding Apportionment
North Colonsay and western cliffs SPA	27,000	4.75%
Ailsa Craig SPA	10,494	1.85%
Rathlin Island SPA	174,796	30.78%
Skomer & Skokholm SPA	29,340	5.17%
Lambay	59,983	10.56%
Ireland's Eye	4,410	0.78%
Wicklow Head	737	0.13%
Bray Head	1,216	0.21%
Howth Head	871	0.15%
Great Saltee	17,501	3.08%
TOTAL	326,348 adults (or 567,846 individuals)	

Distance from colony to Projects

2.6.8 There are no updates to this section. The breeding season apportioning approach applied in response to the RFI remains unchanged and continues to follow the NatureScot guidance used in the 2024 NIS. Refer to Section 2.6 of Appendix 20 of the 2024 NIS.

Proportion of sea within foraging range

2.6.9 There are no updates to this section. The breeding season apportioning approach applied in response to the RFI remains unchanged and continues to follow the NatureScot guidance used in the 2024 NIS. Refer to Section 2.6 of Appendix 20 of the 2024 NIS.

Non- breeding season apportioning

2.6.10 Following the screening in of puffin at Lambay Island SPA, the only change for this section is the addition of the non-breeding season weighting for Puffin at Lambay Island SPA, which has been added to Table 2-5 below.

2.6.11 Note that the methodology remains the same for all species except guillemot for which the non-breeding apportionment is described above (see Table A2-4). Regional populations are unchanged and a full justification for their calculation and use can be found in Appendix A14: Offshore and Intertidal Ornithology Technical Baseline. Similarly, the non-breeding weightings are unchanged (other than for guillemot which is discussed above (see Table A2-4)) and can be found in Table 2-5 of Appendix 20 of the 2024 NIS.

2.6.12 Regional populations were reviewed for the western Irish Sea; however, for reasons of consistency, ecological relevance, and the absence of sufficiently robust data to derive updated regional populations for most species, the assessment retained the regional populations previously calculated using Furness (2015), Burnell *et al*. (2023), and relevant Irish population data (such as the 2024 and 2025 BirdWatch Ireland Monitoring Reports).

Table 2-5 Non-breeding season weightings for each screened in qualifying interest of each SPA (replaces Table 2-5 in Appendix 20 of the 2024 NIS).

Site	Species	Autumn	Winter	Spring	Non-breeding
Ailsa Craig	Gannet	12.42		10.32	
	Kittiwake	0.11		0.14	
	Lesser black-backed gull	0.22	0.71	0.22	
Bardsey Island	Puffin				0.09
Bray Head	Herring gull				0.00
	Kittiwake	0.19		0.24	
Dalkey Island	Herring gull				0.02
Grassholm	Gannet	13.46		11.18	
Saltee Islands SPA	Kittiwake	0.22		0.29	
	Lesser black-backed gull	0.15	0.49	0.15	
	Gannet	1.76		1.47	
	Guillemot				1.31
	Razorbill	0.46	0.80	0.46	
Helvick Head	Kittiwake	0.01		0.02	
Horn Head	Kittiwake	0.39		0.51	
Howth Head	Herring gull				0.01
	Kittiwake	0.38		0.50	
Ireland's Eye	Guillemot				0.33
	Herring gull				0.34
	Kittiwake	0.09		0.11	
	Razorbill	0.25	0.44	0.25	
	Gannet	0.13		0.11	
Lambay Island	Guillemot				4.50
	Fulmar	0.09		0.09	
	Kittiwake	0.71		0.93	
	Lesser black-backed gull	0.40	1.29	0.40	
	Razorbill	1.16	2.00	1.16	
	Herring gull				0.97
	Puffin				0.00
North Colonsay and Western Cliffs SPA	Kittiwake	0.13		0.17	
NWIS	All Species				100.00
Puffin Island	Lesser black-backed gull	0.61	1.97	0.61	
Rathlin Island	Kittiwake	1.47		1.92	
Ripple Estuary	Lesser black-backed gull	5.23	16.82	5.23	
Rockabill SPA	Common tern				100.00

Site	Species	Autumn	Winter	Spring	Non-breeding
	Arctic tern				100.00
	Roseate tern				100.00
Skerries Island	Herring gull				0.00
Skomer SPA	Kittiwake	0.33		0.43	
	Lesser black-backed gull	8.47	27.21	8.47	
St Kilda	Gannet	22.53		18.73	
Wicklow Head (2019/2021)	Kittiwake	0.16		0.20	

3 References

3.1.1 There are no other changes to this section. Refer to Section 3 of Appendix 20 of the 2024 NIS.

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