

A photograph showing the backs of two people wearing high-visibility yellow-green jackets and hard hats (one white, one yellow) looking out over a calm sea under a cloudy sky. The person on the left is wearing a white hard hat with 'concept' written on it. The person on the right is wearing a yellow hard hat.

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Report to Inform Appropriate Assessment Appendix C:
Offshore Ornithology HRA Apportionment Report

MarramWind Offshore Wind Farm

December 2025

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1. Introduction

1.1 Project background

- 1.1.1.1 MarramWind Limited (hereafter referred to as 'the Applicant') is a company wholly owned by ScottishPower Renewables Ltd.
- 1.1.1.2 The Applicant is proposing to develop the MarramWind Offshore Wind Farm (hereafter, referred to as 'the Project') as a floating offshore wind development. The Project is located approximately 75 kilometres (km) offshore from the Aberdeenshire coast in northeast Scotland at its closest point, with the Option Agreement Area (OAA) covering an area of approximately 684km² (Figure 1 of the **Report to Inform Appropriate Assessment (RIAA)**) will comprise both offshore and onshore infrastructure (see **Volume 1, Chapter 4: Project Description** of the **Environmental Impact Assessment (EIA) Report** for full details on the Project design).

1.2 Habitats Regulations Appraisal (HRA) apportionment

- 1.2.1.1 In order to quantify the potential impact from the Project on qualifying features of designated sites screened through for assessments within the **RIAA**, predicted impacts are apportioned to individual colonies.
- 1.2.1.2 This Appendix provides detail of the apportionment process undertaken for the Project and the seasonal apportionment rates for all qualifying features of designated sites screened in for assessment of likely significant effects detailed in the **RIAA**.
- 1.2.1.3 The species requiring apportionment, the seasons for which apportionment is required and the effect pathways requiring assessment are summarised in **Table 1.1**.

Table 1.1 Summary of species and effect pathways requiring HRA apportionment

Species	Season(s)	Collision risk	Distributional response effects
Great black-backed gull (<i>Larus marinus</i>)	Non-breeding only.	✓	✗
Kittiwake (<i>Rissa tridactyla</i>)	Breeding and non-breeding.	✓	✓
Guillemot (<i>Uria aalge</i>)	Breeding and non-breeding.	✗	✓
Razorbill (<i>Alca torda</i>)	Breeding and non-breeding.	✗	✓
Puffin (<i>Fratercula arctica</i>)	Breeding and non-breeding.	✗	✓
Gannet (<i>Morus bassanus</i>)	Breeding and non-breeding.	✓	✓

2. Methodology

- 2.1.1.1 At the time of drafting this Appendix, NatureScot's Guidance Note 10 detailing advice for apportioning impacts to seabird breeding colonies is not yet drafted. The approach taken to apportionment of impacts therefore follows the advice and agreements provided by NatureScot sought through the consultation process as detailed within Section 3.6 of the **RIAA**.
- 2.1.1.2 The degree of connectivity between the Project and qualifying features of designated sites is expected to differ seasonally. This is due to the migratory behaviour of some seabirds and restrictions in foraging range during the breeding season due to colony attendance. For these reasons the approach to apportionment is considered on a seasonal basis as described below in **Section 2.2.1**.

2.2 Breeding season

2.2.1 Apportionment to individual colonies

- 2.2.1.1 As part of the HRA Screening process undertaken for the Project, seabird designated sites within theoretical foraging range of the Project were identified based on the recommended species-specific foraging ranges from the Project OAA Boundary, in accordance with NatureScot's Guidance Note 3 (NatureScot, 2023a). A summary of the recommended foraging ranges and noted exceptions are provided in **Table 2.1** (NatureScot, 2023a).

Table 2.1 Recommended foraging ranges derived from Woodward *et al.* 2019 and noted exceptions

Species	Recommended Foraging range (km)
Kittiwake	300.6
Guillemot	95.2
Razorbill	122.2
Puffin	265.4
Gannet	509.4
Exceptions to above foraging ranges (km)	
Gannet – Forth Islands Special Protection Area (SPA)	590
Guillemot – All Northern Isle* SPAs	153.7
Razorbill – All Northern Isle* SPAs	164.6

Table note: Northern Isles SPAs are classified as any SPA north of the Pentland Firth as recommended in NatureScot's Guidance Note 3 (NatureScot, 2023).

- 2.2.1.2 Due to there being multiple colonies (designated and non-designated) within foraging range of the Project, in order to attribute the correct proportion of birds to different colonies appropriately, the NatureScot (previously Scottish Natural heritage at the time of publication) (2018) apportionment methodology was followed. The NatureScot (2018) apportionment methodology is based on considering a species' foraging range in addition to three colony-specific weighting factors:
- colony size (in individuals);
 - distance of colony from the development site; and
 - sea area (the real extent of the open sea within the foraging range of the relevant species).
- 2.2.1.3 All colonies within each species' foraging range based on the values in Table 2.1 were included.
- 2.2.1.4 The primary reference source for the expected colony size for sites with theoretical connectivity was Seabirds Counts (Burnell *et al.*, 2023), as recommended by NatureScot during consultation (see Table 12.1 in **Volume 1, Chapter 12: Offshore and Intertidal Ornithology** of the **EIA Report**). The counts presented in Burnell *et al.* (2023) are based on colony census data spanning 2015 to 2021 and are therefore contemporaneous with the Project's Digital Aerial Surveys (DAS) which spanned April 2021 to March 2023. For colonies which were not included within Burnell *et al.* (2023), the most contemporaneous census data within the Seabird Monitoring Programme (SMP, 2025) database was utilised.
- 2.2.1.5 Foraging ranges are based on at-sea distances, taking into account land barriers to movements for species which are known to avoid commuting over land. The distances from colonies to the Project were measured in Quantum Geographical Information Services. Distances to colony were calculated from the centroid of each SPA to the centroid of the Project OAA taking the shortest at-sea route possible. The only exception to this rule is for designated sites with a large footprint (such as Forth islands SPA); distance was instead measured from the area of largest concentration of the feature (for example, Bass Rock for gannet or Isle of May for puffin). An important point to note is the difference in measurement used between identification of theoretical connectivity for HRA screening, which uses edge-to-edge distance measurement, compared to apportionment which generally uses centroid-to-centroid distance measurement, as is best practice for either approach (NatureScot, 2018; 2023a). Where the centroid-to-centroid distance exceeds a species foraging range based on the values within **Table 2.1**, the colony has been included in the apportionment process due to theoretical connectivity already established at screening stage.
- 2.2.1.6 For the purposes of apportionment, all colony census counts were converted where required to breeding adults using the conversion factors presented within Burnell *et al.* (2023), where available. It is important to note that the count unit individuals (IND) does not equate to the total number of breeding adults within a set population for auk species. For puffin, the conversion factors recently provided by NatureScot to Cenos Offshore Wind Farm were used (NatureScot, 2025) to calculate the total breeding adult colony population for all unit types: apparently occupied burrows (AOB), individuals on the sea (SEA) or individuals in the colony (IND). For guillemot and razorbill, a conversion factor of 1.34 was applied as recommended within Harris *et al.* (2015) to calculate the total breeding adult colony population from IND count values.
- 2.2.1.7 Sea area was calculated by buffering the centroid of each main site by the species' mean maximum foraging range (MMFR) plus one standard deviation (SD) as defined by Woodward *et al.* (2019). All areas over land were removed, as well as areas where seabirds are unlikely to forage, such as estuaries and areas outside their foraging range when measuring the at-sea distance.

- 2.2.1.8 The three weighting factors noted above were incorporated into the following equations for each colony, where Theoretical Foraging Area is the area of a circle with radius equal to the MMFR plus one SD:

$$\text{Proportion of foraging range at sea} = \text{Sea area} / \text{Theoretical Foraging Area}$$

- 2.2.1.9 For a hypothetical colony on the edge of a continent with a perfectly straight coastline, the sea proportion would equal 0.5 (for instance, half the theoretical foraging area is sea; the other half is land).

- 2.2.1.10 A colony-specific weighting is calculated as follows:

$$\text{Colony Weight} = (\text{Colony Population} / \text{Sum of Populations}) * (\text{Sum of Distance}^2 / \text{Colony Distance}^2) * (1/\text{Colony Sea Proportion} / \text{Sum of } 1/\text{Sea Proportions}).$$

- 2.2.1.11 The proportion apportioned to each colony is calculated as:

$$\text{Colony Weight} / \text{Sum of Colony Weights}$$

- 2.2.1.12 The NatureScot (2018) apportionment input values and resulting apportionment during the breeding season for required species are presented in **Appendix C1**.

2.2.2 Consideration of immature and sabbatical birds

- 2.2.2.1 During the breeding season, there is potential not only for breeding adult birds within foraging range of the Project to have connectivity but also juvenile, immature and sabbatical birds which are not associated with any given colony. Therefore, these free-roaming birds need to be accounted for when apportioning impacts.

- 2.2.2.2 The proportions of juvenile, immature and adult birds which may be connected to the Project can be calculated using either a stable age ratio based on the known population size of a given species or calculated using age ratios derived from the DAS data. For each species recorded within DAS, the age ratios derived from DAS data, as well as its limitations, are detailed within Section 4 of **Volume 3, Appendix 12.1: Offshore and Intertidal Ornithology Baseline Report** of the **EIA Report**.

- 2.2.2.3 For the purpose of these assessments, the age ratios for required species during the breeding season are based on Appendix A of Furness (2015) UK stable age structure data. These data are considered to represent population age structure more accurately than site-specific survey data. Furness (2015) also draws from a wide range of data sources across multiple years, therefore reducing the potential for any bias that may result from the snapshot nature of site-specific survey data, the small sample size of individuals identified to a particular age category and the difficulty with appropriately aging some species due to no distinguishable difference between breeding adult and immature plumage. A summary of the adult / immature age ratios from the stable age structure data is provided in **Table 2.2**.

- 2.2.2.4 One limitation of using stable age structures to calculate age ratios is that they do not account for the likelihood that with increasing distance from a colony, there is a greater chance of encountering a non-breeding bird over a breeding adult, due to breeding adults being restricted in their potential available foraging habitat. The Project OAA is located over 75km from the coast at its nearest point and is known to sit outside of the key foraging habitat for kittiwake, guillemot and razorbill during the breeding season (Wakefield *et al.*, 2017; Cleasby *et al.*, 2018). It is therefore expected that there is greater likelihood of non-breeding birds being within the Project during the breeding season than breeding adult birds and the use of a stable age structure can therefore be considered precautionary for this Project.

- 2.2.2.5 Not all adult birds present in the Project OAA will be breeding birds. This is evidenced from adult sabbatical birds free roaming the North Sea whilst taking a break from breeding

activities (Marine Scotland 2017a; 2017b). The sabbatical rates for key seabird populations are derived from the agreed recommended by Marine Scotland for the Seagreen 1 Offshore Wind Farm Appropriate Assessment and subsequently used for other projects such as Moray West, Forth and Tay projects and recent Scotwind projects, as including at least 10% of adult birds for kittiwake and gannet and 7% for auk species in the population (Marine Scotland 2017a; 2017b). Therefore, this minimum value has been applied for use in this assessment for this project.

Table 2.2 Proportions of adult, immature and sabbatical birds included within the apportionment process

Species	Adult / immature ratio	Sabbatical rate	Total breeding adult percentage (%)
Kittiwake	69.14% / 30.86%	10%	62.23%
Great skua	67.87% / 32.13%	0%	67.87%
Guillemot	60.65% / 39.35%	7%	56.40%
Razorbill	58.58% / 41.42%	7%	54.48%
Puffin	94.07% / 5.93%	7%	87.49%
Gannet	68.36% / 31.64%	10%	61.52%

2.2.3 Final breeding season apportionment

- 2.2.3.1 The final breeding season apportionment values for each qualifying feature of designated sites screened in for assessment are provided in **Section 3**. These values account for the apportionment results in **Appendix C1** and also the total breeding adult rate in **Table 2.2**.

2.3 Non-breeding season

- 2.3.1.1 Outside of the breeding season, when the population contains a mix of birds from UK breeding colonies and breeding colonies from further away, a much lower percentage of birds can be attributed to any particular breeding colony SPA population.
- 2.3.1.2 There is currently no formal guidance provided by NatureScot available to inform approach to non-breeding season apportionment. The approach taken by the Project was therefore discussed via consultation with NatureScot based on the Project's Assessment Methods Note. It was proposed and agreed that the non-breeding season apportionment would be based on calculating the proportion of breeding adults within the UK North Sea (and Channel where appropriate) Biologically Defined Minimum Population Scale (BDMPS) population that can be attributed to the various SPAs. The BDMPSs are defined by Furness (2015), and the apportionment calculations were based on the data within **Appendix C1** of the report. It must be noted that the colony counts in Furness (2015) are no longer the most up to date available counts, but in order to provide a level of consistency within the non-breeding season apportionment process the same source is used for both the colony counts and the wider UK North Sea and Channel BDMPS estimate.

- 2.3.1.3 There are differences in the seasonal definitions provided in Furness (2015) and those recommended within NatureScot Guidance Note 9 (NatureScot, 2020). Namely, for some species Furness (2015) considered it appropriate to separate the non-breeding season further into the following discrete definitions:
- return migration: when birds are migrating to breeding grounds;
 - post-breeding migration: when birds are either migrating to wintering areas or dispersing from colonies; and
 - migration-free Winter: when non-breeding birds are over-wintering in an area.
- 2.3.1.4 Seasonal definitions recommended by Furness (2015) adjusted to account for NatureScot's recommended seasonal definitions are provided in **Table 2.3** for relevant species requiring apportionment. There can be differences in the non-breeding apportionment rate calculated, depending on which of the above non-breeding seasonal definitions is considered. For apportionment of collision risk impact predictions, due to impact predictions being available on a monthly basis, an apportionment rate for each of the above discrete non-breeding season definitions has been calculated and applied where appropriate. For apportionment of distributional response effects, due to impact predictions being based on a single mean peak value within the non-breeding season, the most appropriate apportioning rate is derived from the Furness (2015) seasonal definition which corresponds with the month the peak abundance occurred.

Table 2.3 NatureScot (2020) and Furness (2015) non-breeding season definitions used for apportionment of impacts

Species	Breeding season*	Return migration**	Post-breeding migration**	Migration-free Winter**	Non-breeding*
Great black-backed gull	April to August.	-	-	-	September to March.
Kittiwake	Mid-April to August.	<i>January to mid-April.</i>	September to December.	-	September to mid-April.
Great skua	May to August.	-	-	-	September to April.
Razorbill	April to mid-August.	January to March.	Mid-August to October.	<i>November to December.</i>	Mid-August to March.
Puffin	April to mid-August.	-	-	-	<i>Mid-August to March.</i>
Gannet	Mid-March to September.	December to mid-March.	<i>October to November.</i>	-	October to mid-March.

Table Note: *Based on the seasonal definitions within NatureScot Guidance Note 9 (NatureScot, 2020). **Furness (2015) seasonal definitions adjusted accordingly to avoid overlap of months with NatureScot's recommended breeding season definitions. Values in italics denote the season for which peak abundance was recorded for species requiring assessment of distributional response effects.

- 2.3.1.5 A different approach to that described above is applied for guillemot, whereby a regional approach to apportionment in the non-breeding season is considered as advised within NatureScot Guidance Note 4 (NatureScot, 2023b) and through consultation (see Table 12.1 in **Volume 1, Chapter 12: Offshore and Intertidal Ornithology** of the **EIA Report**). The regional approach recommended by NatureScot assumes that there will be no difference in theoretical connectivity and thus apportionment between the breeding and non-breeding season based on the tagging study data for multiple UK guillemot colonies presented in Buckingham *et al.* (2022). Although exact distances travelled by tagged individuals from breeding colony to wintering grounds are not provided within Buckingham *et al.* (2022), guillemots were recorded migrating as far as the Barents Sea from Scottish colonies during the post-breeding moult period. This dataset therefore provides evidence that guillemots' non-breeding distribution can be significantly different to their breeding distribution, with birds travelling far greater distances compared to central placed foraging from their respective breeding colony. The approach to non-breeding season apportionment for guillemot is highly likely to overestimate the potential impact on guillemot features considered during the non-breeding season.
- 2.3.1.6 A regional approach for herring gull was also recommended by NatureScot (see Table 12.1 in **Volume 1, Chapter 12: Offshore and Intertidal Ornithology** of the **EIA Report**) during consultation. However, no herring gull breeding colonies were identified as being within foraging range of the Project during the breeding season at screening stage. Therefore, on the advice of NatureScot provided via consultation (see Table 12.1 in **Volume 1, Chapter 12: Offshore and Intertidal Ornithology** of the **EIA Report**), herring gull is not considered further for appropriate assessment.
- 2.3.1.7 The non-breeding season apportionment rates applied for each qualifying feature of designated sites screened in for assessment are provided in **Section 3**, based on the calculations presented in **Appendix C2**.

3. Results

- 3.1.1.1 The seasonal apportionment values for all qualifying features screened in for assessment are provided in the separate species tables below (**Table 3.1** to **Table 3.7**). In addition, the 95% confidence limits of the impacts apportioned to each SPA and the relevant qualifying features are provided in **Appendix C3** and **Appendix C4**, to allow for contextualisation of the confidence around the mean impact value used for assessment within the **RIAA**. The mean apportioned impacts are presented in the **RIAA** and form the basis of assessments.

Table 3.1 Seasonal apportioning rates to great black-backed gull designated sites

Site	Non-breeding season rate (%; collision risk only)
East Caithness Cliffs SPA	0.19%
Copinsay SPA	0.24%
Hoy SPA	0.02%
Calf of Eday SPA	0.09%

Table 3.2 Seasonal apportioning rates to kittiwake designated sites

Site	Breeding season			Non-breeding season		
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Return migration rate (%; collision risk only)	Post-breeding migration rate (%; collision risk only)	Non-breeding rate (%; distributional responses only)
Buchan Ness to Collieston Coast SPA	18.96%	62.23%	11.80%	2.40%	1.81%	2.40%
Troup, Pennan and Lion's Heads SPA	18.28%	62.23%	11.37%	2.85%	2.15%	2.85%
Fowlsheugh SPA	12.62%	62.23%	7.85%	1.78%	1.35%	1.78%
East Caithness Cliffs SPA	23.25%	62.23%	14.47%	7.72%	5.84%	7.72%
North Caithness Cliffs SPA	3.30%	62.23%	2.05%	1.94%	1.47%	1.94%
Forth Islands SPA	2.51%	62.23%	1.56%	0.59%	0.45%	0.59%
Copinsay SPA	0.73%	62.23%	0.45%	0.13%	0.10%	0.13%
Hoy SPA	0.14%	62.23%	0.09%	0.08%	0.06%	0.08%
St Abb's Head to Fast Castle SPA	2.20%	62.23%	1.37%	0.65%	0.49%	0.65%

Site	Breeding season			Non-breeding season		
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Return migration rate (%; collision risk only)	Post-breeding migration rate (%; collision risk only)	Non-breeding rate (%; distributional responses only)
Fair Isle SPA	0.25%	62.23%	0.16%	0.15%	0.11%	0.15%
Calf of Eday SPA	0.18%	62.23%	0.11%	0.14%	0.11%	0.14%
Rousay SPA	0.15%	62.23%	0.09%	0.34%	0.26%	0.34%
Marwick Head SPA	0.36%	62.23%	0.22%	0.10%	0.08%	0.10%
West Westray SPA	1.17%	62.23%	0.73%	2.30%	1.74%	2.30%
Farne Islands SPA	1.49%	62.23%	0.93%	0.66%	0.50%	0.66%
Sumburgh Head SPA	0.37%	62.23%	0.23%	0.04%	0.03%	0.04%
Noss SPA	0.05%	62.23%	0.03%	0.10%	0.07%	0.10%
Foula SPA	0.11%	62.23%	0.07%	0.06%	0.05%	0.06%
Hermaness, Saxa Vord and Valla Field SPA	0.03%	62.23%	0.02%	0.07%	0.06%	0.07%
Cape Wrath SPA	0.90%	62.23%	0.56%	0.03%	0.02%	0.03%

Site	Breeding season			Non-breeding season		
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Return migration rate (%; collision risk only)	Post-breeding migration rate (%; collision risk only)	Non-breeding rate (%; distributional responses only)
Flamborough and Filey Coast SPA	N/A	N/A	N/A	7.19%	5.44%	7.19%

Table 3.3 Seasonal apportioning rates to great skua designated sites

Site	Breeding season		
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)
Hermaness, Saxa Vord and Valla Field SPA	5.43%	67.87%	3.69%
Fetlar SPA	5.70%	67.87%	3.87%
Noss SPA	4.85%	67.87%	3.29%
Foula SPA	16.23%	67.87%	11.01%
Fair Isle SPA	8.04%	67.87%	5.46%
Hoy SPA	21.41%	67.87%	14.53%
St Kilda SPA	0.36%	67.87%	0.25%
Handa SPA	1.42%	67.87%	0.96%

Table 3.4 Seasonal apportioning rates to guillemot designated sites

Site	Breeding season			Non-breeding season
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Non-breeding rate (%)
Buchan Ness to Collieston Coast SPA	39.22%	56.40%	22.12%	22.12%
Troup, Pennan and Lion's Heads SPA	33.70%	56.40%	19.01%	19.01%
Copinsay SPA	12.12%	56.40%	6.84%	6.84%
Fair Isle SPA	8.48%	56.40%	4.78%	4.78%
Calf of Eday SPA	1.51%	56.40%	0.85%	0.85%

Table 3.5 Seasonal apportioning rates to razorbill designated sites

Site	Breeding season			Non-breeding season
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Non-breeding rate (%)
Troup, Pennan and Lion's Heads SPA	38.21%	54.48%	20.82%	0.48%
Fowlsheugh SPA	N/A	N/A	N/A	0.97%
East Caithness Cliffs SPA	N/A	N/A		3.43%
North Caithness Cliffs SPA	N/A	N/A	N/A	0.47%
Forth Islands SPA	N/A	N/A	N/A	0.72%
St Abb's Head to Fast Castle SPA	N/A	N/A	N/A	0.33%
Fair Isle SPA	4.85%	54.48%	2.64%	0.25%
West Westray SPA	N/A	N/A	N/A	0.15%
Foula SPA	N/A	N/A	N/A	0.10%
Flamborough and Filey Coast SPA	N/A	N/A	N/A	2.74%

Table 3.6 Seasonal apportioning rates to puffin designated sites

Site	Breeding season			Non-breeding season
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Non-breeding rate (%)
North Caithness Cliffs SPA	3.85%	87.49%	3.37%	0.13%
Forth Islands SPA	46.52%	87.49%	40.70%	26.83%
Hoy SPA	0.48%	87.49%	0.42%	0.45%
Fair Isle SPA	7.57%	87.49%	6.62%	1.38%
Farne Islands SPA	N/A	N/A	N/A	17.23%
Sule Skerry and Sule Stack SPA	26.95%	87.49%	23.58%	0.05%
Noss SPA	0.69%	87.49%	0.60%	0.10%
Foula SPA	2.23%	87.49%	1.95%	2.91%
Hermaness, Saxa Vord and Valla Field SPA	N/A	N/A	N/A	3.06%

Table 3.7 Seasonal apportioning rates to gannet designated sites

Site	Breeding season			Non-breeding season		
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Return migration rate (%; collision risk only)	Post-breeding migration (%; collision risk only)	Non-breeding rate (%; distributional responses only)
Forth Islands SPA	55.99%	61.52%	34.45%	31.27%	24.32%	24.32%
Fair Isle SPA	5.17%	61.52%	3.18%	2.21%	1.38%	1.38%
Sule Skerry and Sule Stack SPA	4.00%	61.52%	2.46%	0.00%	0.20%	0.20%
Noss SPA	7.86%	61.52%	4.84%	5.51%	3.42%	3.42%
North Rona and Sula Sgeir SPA	2.93%	61.52%	1.80%	0.00%	0.40%	0.40%

Site	Breeding season			Non-breeding season		
	NatureScot apportionment result (%; Appendix C1)	Breeding adult percentage (%; Table 2.2)	Overall breeding apportionment rate (%)	Return migration rate (%; collision risk only)	Post-breeding migration (%; collision risk only)	Non-breeding rate (%; distributional responses only)
Hermaness, Saxa Vord and Valla Field SPA	8.62%	61.52%	5.30%	13.73%	8.54%	8.54%
Flamborough and Filey Coast SPA	N/A	N/A	N/A	6.23%	4.85%	4.85%

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5. Glossary and Abbreviations

5.1 Abbreviations

Acronym	Definition
AOB	Apparently Occupied Burrows
BDMPS	Biologically Defined Minimum Population Scale
DAS	Digital Aerial Surveys
HRA	Habitats Regulations Appraisal
IND	Count Unit Individuals
Km	kilometres
MMFR	Mean Maximum Foraging Range
OAA	Option Agreement Area
RIAA	Report to Inform Appropriate Assessment
SD	Standard Deviation
SEA	Individuals on the Sea
SMP	Seabird Monitoring Programme
SPA	Special Protection Area

5.2 Glossary of terms

Term	Definition
Biologically Defined Minimum Population Scale	A measure of a species' population size for a specific season and location, developed by Furness (2015) and used in environmental assessments.
Effect	An effect is the consequence of an impact when considered in combination with the receptor's sensitivity / value / importance, defined in terms of significance.
Impact	A change resulting from an activity associated with the Project, defined in terms of magnitude.

Term	Definition
Landfall Area	The point on the coastline at which the offshore export cables are brought onshore, connecting to the onshore cables at the transition joint bays above Mean High Water Springs.
Likely Significant Effect	A potential impact that could affect the conservation objectives of a designated site.
Designated Sites	Sites which are given special status as protected areas because of their natural and cultural importance. These include, but are not limited to, Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar wetland sites.
Designated / Qualifying Feature	A species for which a protected site is designated due to containing a nationally or internationally important population.
Mean Maximum Foraging Range	Provided by Woodward <i>et al.</i> (2019), these are the mean values of the longest recorded foraging distances for 25 seabird species from all colonies for which there are available data.
Offshore Export Cable Corridor	The area within which the offshore export cables will be located, extending from the Project OAA to the Mean High Water Springs at the landfall.
Offshore Export Cables	Cables which bring electricity from the Offshore Platform(s) to the transition joint bays at landfall.
Offshore Infrastructure	All of the offshore infrastructure including wind turbines, substructures, mooring lines, seabed anchors, Offshore Substation Platform and all cable types (export and inter-array). This encompasses the infrastructure that is the focus of this application and ES and the parts of the Offshore Project consented under Section 36 of the Electricity Act and the Marine and Coastal Access Act 2009
Offshore Platform(s)	Fixed structures located within the Project OAA that contain electrical equipment to aggregate and, where required, convert the power from the wind turbines, into a more suitable voltage for transmission through the export cables to the onshore converter station(s). Such structures could include (but are not limited to): Offshore Converter Station(s) Collector Platform(s).
Option Agreement Area	The area in which the Project's generation infrastructure (including Wind Turbine Generators, associated foundations and inter-array cables), Offshore Platforms, and an interconnector cable will be located.
Receptor	A species present in the intertidal or offshore environment which may be impacted by the Project.
The Applicant	MarramWind Limited, a company wholly owned by ScottishPower Renewables Ltd.
The Project	MarramWind Offshore Windfarm.
Transition joint bays	Underground structures at landfall that house the joints between the offshore and onshore export cables.

Term	Definition
Wind Turbine Generators	Power generating devices located within the Option Agreement Area that convert kinetic energy from wind into electricity.

Appendix C1

NatureScot (2018) apportionment results

Table C1.1 Kittiwake apportionment results following the NatureScot apportionment guidance (NatureScot, 2018)

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Farne Island SPA	Burnell <i>et al.</i> (2023).	Farne Island SPA.	8,804	288	83,144	135,268	0.48	2.10	0.03	1.49%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	Forth Islands SPA.	9,084	249	62,151	110,846	0.39	2.56	0.06	2.51%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	Fowlsheugh SPA.	28,078	167	27,986	151,515	0.53	1.87	0.29	12.62%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	St Abb's Head to Fast Castle SPA.	10,300	267	71,466	124,608	0.44	2.28	0.05	2.20%
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	Buchan Ness to Collieston Coast SPA.	22,590	111	12,425	182,715	0.64	1.55	0.43	18.96%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	Troup, Pennan and Lion's Heads SPA.	21,232	111	12,286	180,123	0.63	1.58	0.42	18.28%
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	2021 (SMP database, 2025).	Sands of Forvie - NK01922680.	1,186	120	14,395	171,094	0.60	1.66	0.02	0.92%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	Calf of Eday SPA.	672	174	30,137	242,497	0.85	1.17	0.00	0.18%
Cape Wrath SPA	Burnell <i>et al.</i> (2023).	Cape Wrath SPA.	7,244	268	71,632	213,273	0.75	1.33	0.02	0.90%
Copinsay SPA	Burnell <i>et al.</i> (2023).	Copinsay SPA.	1,910	145	21,163	234,803	0.83	1.21	0.02	0.73%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	East Caithness Cliffs SPA.	48,958	159	25,384	158,099	0.56	1.80	0.53	23.25%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Fair Isle SPA	Burnell <i>et al.</i> (2023).	Fair Isle SPA.	896	163	26,719	257,602	0.91	1.10	0.01	0.25%
Fetlar SPA	2018 (SMP database, 2025).	Big Holm to Moo Wick.	124	269	72,234	278,232	0.98	1.02	0.00	0.01%
Foula SPA	Burnell <i>et al.</i> (2023).	Foula SPA.	850	235	55,203	268,059	0.94	1.06	0.00	0.11%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	Hermaness, Saxa Vord and Valla Field SPA.	354	305	93,171	279,809	0.99	1.01	0.00	0.03%
Hoy SPA	Burnell <i>et al.</i> (2023).	Hoy SPA.	532	177	31,390	231,109	0.81	1.23	0.00	0.14%
Marwick Head SPA	Burnell <i>et al.</i> (2023).	Marwick Head SPA.	1,812	200	40,082	236,827	0.83	1.20	0.01	0.36%
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	North Caithness Cliffs SPA.	11,142	172	29,656	217,205	0.77	1.31	0.08	3.30%
North Rona and Sula Sgeir SPA	Burnell <i>et al.</i> (2023).	North Rona and Sula Sgeir SPA.	1,424	335	112,466	239,902	0.85	1.18	0.00	0.10%
Noss SPA	Burnell <i>et al.</i> (2023).	Noss SPA.	358	222	49,127	273,994	0.97	1.04	0.00	0.05%
Papa Stour SPA	2021 (SMP database, 2025).	Papa Stour Whole Island.	50	261	67,964	274,237	0.97	1.04	0.00	0.01%
Pentland Firth Islands SPA	2021 (SMP database, 2025).	Muckle Skerry.	352	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Swona	1	-	-	-	-	-	-	-
	Pentland Firth Islands SPA.		353	151	22,952	229,176	0.81	1.24	0.00	0.13%
Ramna Stacks and Gruney SPA	2018 (SMP database, 2025).	Fladda	156	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Outer Stack.	4	-	-	-	-	-	-	-
	Ramna Stacks and Gruney SPA.		160	290	84,163	278,634	0.98	1.02	0.00	0.01%
Rousay SPA	Burnell <i>et al.</i> (2023).	Rousay SPA.	660	185	34,066	239,532	0.84	1.19	0.00	0.15%
Sule Skerry and Sule Stack SPA	2024 (SMP database, 2025).	Sule Skerry and Sule Stack SPA.	332	246	60,745	226,483	0.80	1.25	0.00	0.05%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Sumburgh Head SPA	Burnell <i>et al.</i> (2023).	Sumburgh Head SPA.	1,932	193	37,201	267,212	0.94	1.06	0.01	0.37%
West Westray SPA	Burnell <i>et al.</i> (2023).	West Westray SPA.	5,510	193	37,074	242,126	0.85	1.17	0.03	1.17%
Bigton to Maywick	2016 (SMP database, 2025).	Griskerry to Taing of Maywick.	44	216	46,813	269,389	0.95	1.05	0.00	0.01%
Bressay	2019 (SMP database, 2025).	The Ord.	92	220	48,188	273,021	0.96	1.04	0.00	0.01%
Brough of Birsay	2018 (SMP database, 2025).	Brough of Birsay.	2	198	39,162	237,346	0.84	1.20	0.00	0.00%
Burn of Daff	2017 (SMP database, 2025).	Burn of Daff to Newtonhill.	1,580	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Black Slough to Burn of Daff.	606	-	-	-	-	-	-	-
	Burn of Daff.		2,186	154	23,627	157,314	0.55	1.80	0.03	1.12%
Caithness - Wick Bay to Freshwick Bay	2018 (SMP database, 2025).	Noss Head.	90	147	21,600	204,614	0.72	1.39	0.00	0.04%
Carr Craig, Eyebroughy and Haystack	2021 (SMP database, 2025).	Inchcolm	126	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Inchkeith	1,004	-	-	-	-	-	-	-
	Carr Craig, Eyebroughy and Haystack.		1,130	291	84,596	86,536	0.30	3.28	0.01	0.29%
Catterline to Inverbervie	2017 (SMP database, 2025).	Yellow Ark.	268	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Darn Bay.	20	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Little John's Haven.	12	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Kineff	244	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Whistleberry	948	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Swirl Cove.	91	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Rouen Bay.	382	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	The Slainges.	2,128	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	Catterline to Inverbervie.		4,093	174	30,204	147,261	0.52	1.93	0.04	1.75%
Costa Head	2021 (SMP database, 2025).	Costa Head.	46	191	36,428	238,050	0.84	1.19	0.00	0.01%
Dale to Huxter	2021 (SMP database, 2025).	Dale to Huxter.	1	251	62,885	268,880	0.95	1.06	0.00	0.00%
Deerness	2019 (SMP database, 2025).	Deerness 10.	10	149	22,068	235,334	0.83	1.21	0.00	0.00%
Droman to Geodha Ruadh na Fola	2021 (SMP database, 2025).	Sandwood Bay Stack.	26	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Am Balg.	296	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Droman - Sandwood Bay.	5	-	-	-	-	-	-	-
	Droman to Geodha Ruadh na Fola.		327	284	80,476	203,450	0.72	1.40	0.00	0.04%
Dunbar Harbour - NT67947936	2021 (SMP database, 2025).	Dunbar Harbour	782	266	70,992	116,456	0.41	2.44	0.00	0.18%
Eyemouth to Burnmouth Master	2018 (SMP database, 2025).	Eyemouth to Burnmouth 1.	120	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Eyemouth to Burnmouth 2.	342	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Eyemouth to Burnmouth 3.	12	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Eyemouth to Burnmouth 4.	124	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Eyemouth to Burnmouth 5.	228	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Eyemouth to Burnmouth 6.	316	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Eyemouth to Burnmouth 7.	276	-	-	-	-	-	-	-
	Eyemouth to Burnmouth.		1,418	271	73,560	126,639	0.45	2.24	0.01	0.29%
Eynhallow	2018 (SMP database, 2025).	Eynhallow	76	185	34,357	238,368	0.84	1.19	0.00	0.02%
Faraid Head / Balnakeil	2019 (SMP database, 2025).	Faraid Head 2.	60	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Faraid Head 3.	364	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Faraid Head 4.	232	-	-	-	-	-	-	-
	Faraid Head / Balnakeil.		656	253	63,800	212,034	0.75	1.34	0.00	0.09%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Fethaland to North Roe	2019 (SMP database, 2025).	Lanyar Taing to Lotaki Kame.	4	286	81,669	277,417	0.98	1.02	0.00	0.00%
Fetlar	2019 (SMP database, 2025).	Fetlar RSPB.	128	271	73,679	277,294	0.98	1.02	0.00	0.01%
Fetlar - Shetland	2002 (SMP database, 2025).	Outer Brough.	82	274	74,824	278,660	0.98	1.02	0.00	0.01%
Findon Ness - Hare Ness	2017 (SMP database, 2025).	Seal's Cove to Findon Ness.	570	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Findon Ness to Black Slough.	160	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Hare Ness to Seal's Cove.	1,624	-	-	-	-	-	-	-
	Findon Ness - Hare Ness.		2,354	150	22,447	159,361	0.56	1.78	0.03	1.25%
Fitful	2012 (SMP database, 2025).	Siggarr Ness.	132	197	38,949	267,534	0.94	1.06	0.00	0.02%
Fraserburgh	2021 (SMP database, 2025).	Fraserburgh Harbour.	162	97	9,434	192,184	0.68	1.48	0.00	0.17%
Girdle Ness to Hare Ness	2017 (SMP database, 2025).	Cove to Hare Ness.	722	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Cove Bay.	2,646	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Greg Ness - Seals Hole.	818	-	-	-	-	-	-	-
	Girdle Ness to Hare Ness.		4,186	146	21,288	160,973	0.57	1.76	0.05	2.33%
Green Holms	2018 (SMP database, 2025).	Muckle Green Holm.	64	167	28,002	238,825	0.84	1.19	0.00	0.02%
Hall Bay to Craigeven Bay	2017 (SMP database, 2025).	Perthumie Bay 1.	158	159	25,431	153,568	0.54	1.85	0.00	0.08%
The Taing - The Nev	2004 (SMP database, 2025).	Hinda Stack - The Nev.	56	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	The Taing - Hinda Stack.	100	-	-	-	-	-	-	-
	The Taing - The Nev.		156	293	86,026	280,056	0.99	1.01	0.00	0.01%
Heylor to Stenness	2019 (SMP database, 2025).	Calders Geo.	72	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Ockran Head and Hamnavoe.	152	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Stenness	130	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	Heylor to Stenness.		354	275	75,539	275,716	0.97	1.03	0.00	0.03%
Holm	2021 (SMP database, 2025).	Gultak	22	151	22,839	233,858	0.82	1.21	0.00	0.01%
Hopeman Bay	2023 (SMP database, 2025).	Covesea	1,398	172	29,434	135,665	0.48	2.09	0.02	0.67%
Horse Island, Colsay, Little and Ladies Holm to Fitful Head	2021 (SMP database, 2025).	Horse Island (HU30).	24	192	36,982	266,727	0.94	1.06	0.00	0.00%
Horse of Copinsay	2023 (SMP database, 2025).	Horse of Copinsay.	314	145	21,016	232,896	0.82	1.22	0.00	0.12%
Hoy and Southwalls	2019 (SMP database, 2025).	HOY22	66	165	27,330	226,120	0.80	1.26	0.00	0.02%
Huxter to Brindister	2021 (SMP database, 2025).	Brough Skerries to Corn Head.	1	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Neap of Norby to The Kamer.	38	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Staraster to Shaabers Head.	42	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	The Kramer to Bay of Garth.	8	-	-	-	-	-	-	-
	Huxter to Brindister.		89	259	67,154	274,196	0.97	1.04	0.00	0.01%
Lunan Bay to Arbroath	2018 (SMP database, 2025).	Whiting Ness to Ethie Haven 4.	820	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Auchmithie	7	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Whiting Ness to Ethie Haven 1.	204	-	-	-	-	-	-	-
	Lunan Bay to Arbroath.		1,031	213	45,265	128,593	0.45	2.21	0.01	0.34%
Maywick to Scalloway	2016 (SMP database, 2025).	South Havra.	10	220	48,296	270,031	0.95	1.05	0.00	0.00%
Maywick to St. Ninians Isle	2014 (SMP database, 2025).	Ness of Ireland.	84	215	46,313	270,129	0.95	1.05	0.00	0.01%
Montrose to Lunan Bay	2017 (SMP database, 2025).	Buckiemill	740	204	41,480	133,056	0.47	2.13	0.01	0.26%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Newton Hill	2017 (SMP database, 2025).	Doonie Point to Hall Bay - NO89919039.	4	159	25,150	157,198	0.55	1.81	0.00	0.00%
Newtonhill - Hall Bay	2017 (SMP database, 2025).	Newtonhill - May Craig.	596	156	24,242	157,980	0.56	1.80	0.01	0.30%
No Ness to Levenwick and Boddam to Virkie	2021 (SMP database, 2025).	Noness	76	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Troswick Beach to Boddam.	42	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Troswick Ness.	40	-	-	-	-	-	-	-
	No Ness to Levenwick and Boddam to Virkie.		158	203	41,026	269,278	0.95	1.05	0.00	0.03%
North Mainland 22 - Black Hill to Boat Geo South	2021 (SMP database, 2025).	HU 3066 - SKUA/GBBG.	4	269	72,205	275,343	0.97	1.03	0.00	0.00%
North Sutherland Islands	2021 (SMP database, 2025).	Eilean Iosal.	141	235	55,022	206,578	0.73	1.37	0.00	0.02%
North Sutor to Shandwick	2021 (SMP database, 2025).	North Sutor of Cromarty / Castlecraig.	578	205	42,174	109,831	0.39	2.58	0.01	0.24%
Peterhead	2021 (SMP database, 2025).	Peterhead South Harbour (urban).	66	102	10,344	188,092	0.66	1.51	0.00	0.06%
Portknockie	2018 (SMP database, 2025).	Portknockie	62	142	20,090	162,224	0.57	1.75	0.00	0.04%
Portsoy to Cullen	2017 (SMP database, 2025).	Redhythe Point.	440	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Garron Point.	434	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Findlater	158	-	-	-	-	-	-	-
	Portsoy to Cullen.		1,032	137	18,642	164,076	0.58	1.73	0.01	0.64%
Ronas Hill - North Roe and Tingon - CLIFF NESTERS ONLY	2019 (SMP database, 2025).	Galti Stack.	102	285	81,073	276,684	0.97	1.03	0.00	0.01%
Rosehearty to Bay of Cullen	2017 (SMP database, 2025).	Snow Craig.	50	-	-	-	-	-	-	-
	2017 (SMP database, 2025).	Head of Garness.	6	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	Rosehearty to Bay of Cullen.		56	119	14,228	174,828	0.62	1.62	0.00	0.04%
Rousay - South East	2018 (SMP database, 2025).	Trumland RSPB.	254	180	32,422	238,690	0.84	1.19	0.00	0.06%
Sanday - Stove to Kettletoft	2017 (SMP database, 2025).	Starrie Geo.	102	166	27,462	241,531	0.85	1.18	0.00	0.03%
Sandvoe to Uyea	2019 (SMP database, 2025).	Sandvoe 3.	8	293	85,755	276,959	0.98	1.02	0.00	0.00%
Scapa Bay to St. Marys	2021 (SMP database, 2025).	Holm 4.	46	164	26,774	234,393	0.83	1.21	0.00	0.01%
Seahouses 1 - NU22553234	2019 (SMP database, 2025).	Seahouses 1.	412	294	86,307	134,020	0.47	2.12	0.00	0.07%
Shapinsay (Coastal)	2021 (SMP database, 2025).	Shapinsay 8.	26	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	Shapinsay 9.	8	-	-	-	-	-	-	-
	Shapinsay (Coastal).		34	160	25,522	237,088	0.84	1.20	0.00	0.01%
Skeld, Westerwick and Culswick	2016 (SMP database, 2025).	Burga Stacks to Caves.	2	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	Scarvister to West Mouli Geo.	26	-	-	-	-	-	-	-
	2006 (SMP database, 2025).	Skeld, Westerwick and Culswick.	46	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	West of the Nev - Stead of Culswick.	54	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	Westerwick to West of The Nev.	100	-	-	-	-	-	-	-
	Skeld, Westerwick and Culswick.		228	237	56,276	271,916	0.96	1.04	0.00	0.03%
Smoo to Melvich	2019 (SMP database, 2025).	Cleit An t-Seabhaig.	50	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Rubha Thormaid.	50	-	-	-	-	-	-	-
	Smoo to Melvich.		100	244	59,536	208,138	0.73	1.36	0.00	0.02%
South Ronaldsay	2021 (SMP database, 2025).	Quindry - Hoxa - Dam of Hoxa.	2	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	The Altar – Quindry.	68	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	Windwick – Burwick.	32	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	South Ronaldsay.		102	161	25,767	231,110	0.81	1.23	0.00	0.03%
South Sutor	2015 (SMP database, 2025).	South Sutor 3.	132	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	South Sutor All (2-6).	106	-	-	-	-	-	-	-
	South Sutor.		238	208	43,146	109,536	0.39	2.59	0.00	0.10%
St. Ninian's Isle	2017 (SMP database, 2025).	Hich Holm.	56	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	St. Ninian's Isle.	78	-	-	-	-	-	-	-
	St. Ninian's Isle.		134	213	45,212	268,973	0.95	1.06	0.00	0.02%
Stoer Headland	2019 (SMP database, 2025).	Point of Stoer - Cluas Deas.	514	328	107,780	181,107	0.64	1.57	0.00	0.05%
Stonehaven to Wine Cove	2018 (SMP database, 2025).	Old Hall Bay - Castle Haven.	534	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Strathlethan Bay.	61	-	-	-	-	-	-	-
	Stonehaven to Wine Cove.		595	164	27,050	152,674	0.54	1.86	0.01	0.27%
Stronsay	2018 (SMP database, 2025).	Burgh Head 1.	21	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Carlin Geo 1.	188	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Rothiesholm Head 2.	98	-	-	-	-	-	-	-
	Stronsay		307	154	23,644	226,892	0.80	1.25	0.00	0.11%
Sumburgh Head Quarries	2019 (SMP database, 2025).	Compass Head.	70	194	37,545	267,608	0.94	1.06	0.00	0.01%
Sumburgh to Peerie Voe of Spiggie	2021 (SMP database, 2025).	Broad Stack to Stack of Barons Geo.	94	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	Corbie Geo to Whale Stack.	2	-	-	-	-	-	-	-
	Sumburgh to Peerie Voe of Spiggie.		96	203	41,280	267,667	0.94	1.06	0.00	0.02%
Uyea	2021 (SMP database, 2025).	Uyea	24	294	86,252	277,006	0.98	1.02	0.00	0.00%
Vaila	2016 (SMP database, 2025).	Vaila	88	241	58,124	134	0.96	1.04	0.00	0.01%
	2019 (SMP database, 2025).	Dogs Head to Treawick.	18	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Walls to Dales	2016 (SMP database, 2025).	Point of Hus to Hevdigarth.	20	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Treawick to Burrier Head.	3	-	-	-	-	-	-	-
	Walls to Dales.		41	239	56,933	261,870	0.92	1.08	0.00	0.01%
West Burra - Shetland	2014 (SMP database, 2025).	Kettlaness (KI & SA only).	72	-	-	-	-	-	-	-
	2014 (SMP database, 2025).	West Burra.	130	-	-	-	-	-	-	-
	2016 (SMP database, 2025).	Whale Wick to Sandwick (incl. Ramna Geo).	58	-	-	-	-	-	-	-
	West Burra – Shetland.		260	224	49,979	270,766	0.95	1.05	0.00	0.04%
Westray	2002 (SMP database, 2025).	Westray 10.	758	184	33,783	240,867	0.85	1.18	0.00	0.18%
Whalsay	2001 (SMP database, 2025).	Meo Ness to the Haa.	64	242	58,634	276,861	0.98	1.03	0.00	0.01%
Yell - East Coast	2018 (SMP database, 2025).	SE Yell (inc. Burravoe).	154	271	73,662	278,115	0.98	1.02	0.00	0.01%
Yesnaby - Ness Point, Stromness	2021 (SMP database, 2025).	Grid Square HY2112.	12	187	35,025	234,211	0.83	1.21	0.00	0.00%
Yesnaby to Marwick (West Mainland)	2018 (SMP database, 2025).	Row Head.	2	194	37,671	235,255	0.83	1.21	0.00	0.00%
Totals			216,500	-	4,594,274	-	-	138.65	2.28	100.00%
Foraging range (km)			300.6							
Potential foraging area (km ²)			283,875							

Table note: *For Forth Islands SPA, the distance has been measured from the Isle of May due to holding the majority of the overall site population.

Table C1.2 Great skua apportionment results following the NatureScot apportionment guidance (NatureScot, 2018)

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Hermaness, Saxa Vord and Valla Field SPA	Burnell et al. (2023).	Hermaness	2,060	305	93,173	2,056,538	0.75	1.32	0.08	5.43%
Fetlar SPA	Burnell et al. (2023).	Fetlar SPA.	1,708	272	74,170	2,040,646	0.75	1.33	0.09	5.70%
Ronas Hill - North Roe and Tingon SPA	Burnell et al. (2023).	Ronas Hill - North Roe and Tingon SPA.	380	283	79,859	2,067,365	0.76	1.32	0.02	1.16%
Noss SPA	Burnell et al. (2023).	Noss SPA.	952	222	49,127	2,020,134	0.74	1.35	0.07	4.85%
Foula SPA	Burnell et al. (2023).	Foula SPA.	3,692	235	55,203	2,081,682	0.76	1.31	0.25	16.23%
Fair Isle SPA	Burnell et al. (2023).	Fair Isle SPA.	860	163	26,719	2,022,393	0.74	1.35	0.12	8.04%
All other Shetland Sites	Burnell et al. (2023).	All other Shetland Sites.	5,732	253	63,981	2,047,800	0.75	1.33	0.34	22.10%
Hoy SPA	Burnell et al. (2023).	Hoy SPA.	2,810	177	31,390	2,111,823	0.78	1.29	0.33	21.41%
All other Orkney Sites	Burnell et al. (2023).	All other Orkney Sites.	1,586	170	28,863	2,087,949	0.77	1.30	0.20	13.29%
St Kilda SPA	Burnell et al. (2023).	St Kilda SPA.	422	503	252,607	2,320,601	0.85	1.17	0.01	0.36%
Handa SPA	Burnell et al. (2023).	Handa SPA.	566	303	91,970	2,196,767	0.81	1.24	0.02	1.42%
Totals			20,768	-	847,062	-	-	14.32	1.54	100.00%
Foraging range (km)			931.2							
Potential foraging area (km ²)			2,724,180							

Table C1.3 Guillemot apportionment results following the NatureScot apportionment guidance (NatureScot, 2018)

Main site	Count date (Source)	Sub-sites	Count within Burnell <i>et al.</i> (2023) / SMP (IND)	Corrected population count (breeding adults)	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Stronsay	2018 (SMP database, 2025).	Carlin Geo 1.	741	993	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Rothiesholm Head 2.	10	13	-	-	-	-	-	-	-
	Stronsay.		751	1,006	152	23,061	66,609	0.90	1.11	0.01	0.43%
Auskerry SPA	2016 (SMP database, 2025).	Auskerry SPA.	91	122	148	22,015	66,371	0.89	1.12	0.00	0.05%
Deerness	2021 (SMP database, 2025).	Mull Head - Cliff Nesters.	1,374	1,841	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Deerness 3.	173	232	-	-	-	-	-	-	-
	2018 (SMP database, 2025).	Deerness 5.	316	423	-	-	-	-	-	-	-
	2019 (SMP database, 2025).	Deerness 10.	95	127	-	-	-	-	-	-	-
	Deerness		1,958	2,624	150	22,481	64,694	0.87	1.15	0.02	1.18%
Copinsay SPA	Burnell <i>et al.</i> (2023).	Copinsay SPA.	18,479	24,762	145	21,163	62,995	0.85	1.18	0.16	12.12%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	Fair Isle SPA.	18,295	24,515	163	26,719	70,587	0.95	1.05	0.11	8.48%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	Calf of Eday SPA.	3,493	4,681	174	30,137	663,789	0.91	1.10	0.02	1.51%
Horse of Copinsay	2023 (SMP database, 2025).	Horse of Copinsay.	772	1,034	145	20,996	64,241	0.87	1.16	0.01	0.50%
Holm	2021 (SMP database, 2025).	Holm 2.	7	9	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Gultak	218	292	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Holm 6.	60	80	-	-	-	-	-	-	-
	Holm		285	382	151	22,838	62,975	0.85	1.18	0.00	0.17%
South Ronaldsay	2016 (SMP database, 2025).	Burwick – Sandwick.	10	13	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Count within Burnell <i>et al.</i> (2023) / SMP (IND)	Corrected population count (breeding adults)	Distance to Project (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2016 (SMP database, 2025).	Windwick – Burwick.	2,906	3,894	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	The Altar – Quindry.	648	868	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Quindry - Hoxa - Dam of Hoxa.	-	-	-	-	-	-	-	-	-
	South Ronaldsay.		3,564	4,776	152	23,052	59,388	0.80	1.25	0.03	2.28%
Pentland Firth Islands	2002 (SMP database, 2025).	Muckle Skerry.	438	587	-	-	-	-	-	-	-
	2021 (SMP database, 2025).	Swona	6	8	-	-	-	-	-	-	-
	Pentland Firth Islands SPA.		444	595	152	23,010	57,967	0.78	1.28	0.00	0.29%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	Troup, Pennan and Lion's Heads SPA.	23,801	31,893	111	12,286	19,273	0.68	1.48	0.44	33.70%
Buchan Ness to Collieston SPA	Burnell <i>et al.</i> (2023).	Buchan Ness to Collieston SPA.	29,433	39,440	111	12,425	20,252	0.71	1.41	0.52	39.22%
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	2021 (SMP database, 2025).	Sands of Forvie.	54	72	120	14,395	45,294	0.61	1.64	0.00	0.07%
Totals			101,420	135,903	-	253,581	-	-	16.10	1.32	100.00%
Foraging range (km) including data from Fair Isle			153.7								
Potential foraging area (km2) including data from Fair Isle			74,216								
Foraging range (km) excluding data from Fair Isle			95.2								
Potential foraging area (km2) excluding data from Fair Isle			28,472								

Table Note: * Distance measured from the Carlin Geo 1 sub colony site due to holding the majority of the overall site population.

Table C1.4 Razorbill apportionment results following the NatureScot apportionment guidance (NatureScot, 2018)

Main site	Count date (Source)	Sub-sites	Count within Burnell et al. (2023) / SMP (IND)	Corrected population count (breeding adults)	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Fair Isle SPA	Burnell <i>et al.</i> (2023).	Fair Isle SPA.	1,925	2,580	163	26,719	80,750	0.95	1.05	0.08	4.85%
Stronsay	2018 (SMP, 2025).	Burgh Head 1.	2	3	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Burgh Head 2.	2	3	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Rothiesholm Head 2.	10	13	-	-	-	-	-	-	-
	Stronsay		14	19	152	23,061	72,271	0.85	1.18	0.00	0.05%
Auskerry SPA	SMP (2016).	Auskerry SPA.	45	60	148	22,015	74,869	0.88	1.14	0.00	0.15%
Shapinsay (Coastal)	2021 (SMP, 2025).	Shapinsay 8.	55	74	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Shapinsay 9.	90	121	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Shapinsay 10.	21	28	-	-	-	-	-	-	-
	Shapinsay (Coastal).		166	222	160	25,522	73,211	0.86	1.16	0.01	0.48%
Rerwick Head to Mirkady Point	2019 (SMP, 2025).	Rerwick Head 1.	1	1	-	-	-	-	-	-	-
	2019 (SMP, 2025).	Rerwick Head 2.	39	52	-	-	-	-	-	-	-
	Rerwick Head to Mirkady Point.		40	54	157	24,500	70,431	0.83	1.21	0.00	0.13%
Deerness	2018 (SMP, 2025).	Mull Head - Cliff Nesters.	67	90	-	-	-	-	-	-	-
	2019 (SMP, 2025).	Deerness 2.	58	78	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Deerness 3.	116	155	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Deerness 5.	100	134	-	-	-	-	-	-	-
	2019 (SMP, 2025).	Deerness 10.	85	114	-	-	-	-	-	-	-
	2018-2019 (SMP, 2025).	Deerness	426	571	150	22,481	72,726	0.85	1.17	0.02	1.42%
Scapa Bay to St. Mary's	Holm 4.		152	204	162	26,292	67,486	0.79	1.26	0.01	0.47%
Copinsay SPA	2023 (SMP, 2025).	Horse of Copinsay.	231	310	-	-	-	-	-	-	-
	2023 (SMP, 2025).	Black Holm.	59	79	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Count within Burnell et al. (2023) / SMP (IND)	Corrected population count (breeding adults)	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2023 (SMP, 2025).	Corn Holm.	22	29	-	-	-	-	-	-	-
	2023 (SMP, 2025).	Ward Holm.	93	125	-	-	-	-	-	-	-
	2023 (SMP, 2025).	Copinsay RSPB.	284	381	-	-	-	-	-	-	-
	Copinsay SPA.		689	923	145	21,163	70,596	0.83	1.21	0.04	2.51%
Holm	2021 (SMP, 2025).	Holm 2.	95	127	-	-	-	-	-	-	-
	2021 (SMP, 2025).	Gultak	382	512	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Holm 6.	19	25	-	-	-	-	-	-	-
	Holm		496	665	151	22,838	71,247	0.84	1.19	0.03	1.66%
Flotta & Calf of Flotta	2019 (SMP, 2025).	Flotta 5.	27	36	-	-	-	-	-	-	-
	2019 (SMP, 2025).	Flotta 6.	240	322	-	-	-	-	-	-	-
	2019 (SMP, 2025).	Flotta & Calf of Flotta.	267	358	163	26,529	67,763	0.80	1.26	0.01	0.81%
Switha SPA	Switha SPA.		231	310	164	27,053	67,231	0.79	1.27	0.01	0.69%
South Ronaldsay	2021 (SMP, 2025).	Quindry - Hoxa - Dam of Hoxa.	29	39	-	-	-	-	-	-	-
	2021 (SMP, 2025).	The Altar – Quindry.	248	332	-	-	-	-	-	-	-
	2000 (SMP, 2025).	Stews – Windwick.	138	185	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Burwick – Sandwich.	16	21	-	-	-	-	-	-	-
	SMP (2016-2021).	Windwick – Burwick.	415	556	-	-	-	-	-	-	-
	South Ronaldsay		846	1,134	153	23,480	64,868	0.76	1.31	0.05	3.02%
Hoy and Southwalls	2019 (SMP, 2025).	HOY22	182	244	164	26,796	66,785	0.78	1.27	0.01	0.55%
Pentland Firth Islands SPA	2021 (SMP, 2025).	Swona	204	273	-	-	-	-	-	-	-
	2002 (SMP, 2025).	Muckle Skerry.	178	239	-	-	-	-	-	-	-
	Pentland Firth Islands SPA.		382	512	152	23,010	64,523	0.76	1.32	0.02	1.40%
Rosehearty to Bay of Cullen	2017 (SMP, 2025).	Head of Garness.	81	109	120	14,404	26,213	0.56	1.79	0.01	0.64%

Main site	Count date (Source)	Sub-sites	Count within Burnell et al. (2023) / SMP (IND)	Corrected population count (breeding adults)	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	Troup, Pennan and Lion's Heads SPA.	4,518	6,054	111	12,286	28,861	0.62	1.63	0.62	38.21%
Buchan Ness to Collieston Coast SPA	2023 (SMP, 2025).	Buchan Ness to Collieston Coast SPA.	5,712	7,654	111	12,425	32,762	0.70	1.43	0.68	42.08%
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	2021 (SMP, 2025).	Sands of Forvie.	131	176	120	14,395	30,593	0.65	1.53	0.01	0.89%
Totals			16,303	21,846	-	394,968	-	-	23.38	1.62	100.00%
Foraging range (km) including data from Fair Isle			164.6								
Potential foraging area (km ²) including data from Fair Isle			85,116								
Foraging range (km) excluding data from Fair Isle			122.2								
Potential foraging area (km ²) excluding data from Fair Isle			46,913								

Table C1.5 Puffin apportionment results following the NatureScot apportionment guidance (NatureScot, 2018)

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Yell Sound Islands	2018 (SMP, 2025).	Uynarey	16	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Lunna Holm.	100	-	-	-	-	-	-	-
	2000 (SMP, 2025).	Bigga	6	-	-	-	-	-	-	-
	2000 (SMP, 2025).	Little Roe.	64	-	-	-	-	-	-	-
	2000 (SMP, 2025).	Samphrey	50	-	-	-	-	-	-	-
	2000 (SMP, 2025).	Fish Holm.	200	-	-	-	-	-	-	-
	Yell Sound Islands.		436	264	69,686	214,402	0.97	1.03	0.00	0.09%
Out Skerries	2001 (SMP, 2025).	Filla	64	-	-	-	-	-	-	-
	2001 (SMP, 2025).	Bound Skerry.	120	-	-	-	-	-	-	-
	2001 (SMP, 2025).	Bruray	208	-	-	-	-	-	-	-
	Out Skerries.		392	251	63,243	215,784	0.98	1.03	0.00	0.09%
Laxo to Housabister	2021 (SMP, 2025).	Teistie Geo to Wick of Neap.	18	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Hog Island to Dringa.	6	-	-	-	-	-	-	-
	Laxo to Housabister.		24	241	58,144	216,767	0.98	1.02	0.00	0.01%
Huxter to Brindister	2017 (SMP, 2025).	Staraster to Shaabers Head.	52	256	65,696	213,057	0.96	1.04	0.00	0.01%
Sandness	2019 (SMP, 2025).	HU1755	10	244	59,501	210,527	0.95	1.05	0.00	0.00%
Housabister to Catfirth	2017 (SMP, 2025).	Hoo Stack.	6	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Little Loch to Eswick Holm.	8	-	-	-	-	-	-	-
	Housabister to Catfirth.		14	235	55,412	216,338	0.98	1.02	0.00	0.00%
Walls to Dales	2016 (SMP, 2025).	Quinni Geo to Uskie Geo.	8	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Point of Hus to Hevdigarth.	6	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2016 (SMP, 2025).	Footabrough to Dogs Head.	16	-	-	-	-	-	-	-
	Walls to Dales.		30	237	56,012	208,807	0.94	1.06	0.00	0.01%
Vaila	2016 (SMP, 2025).	Vaila	90	234	54,666	207,856	0.94	1.06	0.00	0.02%
Skeld, Westerwick and Culswick	2016 (SMP, 2025).	Burga Stacks to Caves.	14	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Giltarump Stack.	2	-	-	-	-	-	-	-
	2016 (SMP, 2025).	West of the Nev - Stead of Culswick.	34	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Westerwick to West of the Nev.	6	-	-	-	-	-	-	-
	Skeld, Westerwick and Culswick.		56	230	52,821	212,937	0.96	1.04	0.00	0.02%
Scalloway Islands	2017 (SMP, 2025).	Sanda Stour.	2	-	-	-	-	-	-	-
	2017 (SMP, 2025).	The Nev.	2	-	-	-	-	-	-	-
	Scalloway Islands.		4	227	51,728	215,000	0.97	1.03	0.00	0.00%
Noss SPA	Burnell <i>et al.</i> (2023).	Noss SPA.	2,348	222	49,127	213,113	0.96	1.04	0.01	0.69%
Bressay	2019 (SMP, 2025).	Geos of the Veng.	2	219	47,745	211,705	0.96	1.05	0.00	0.00%
Foula SPA	Burnell <i>et al.</i> (2023).	Foula SPA.	8,468	235	55,203	211,923	0.96	1.04	0.02	2.23%
Scalloway Islands South	2017 (SMP, 2025).	Oxna	8	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Cheynies	2	-	-	-	-	-	-	-
	Scalloway Islands South.		10	223	49,895	208,179	0.94	1.06	0.00	0.00%
Gulberwick to Fladdabister	2021 (SMP, 2025).	Ness of Setter to Broch of Burreland.	10	220	48,268	209,221	0.95	1.06	0.00	0.00%
West Burra - Shetland	2016 (SMP, 2025).	Bannaminn to Croo Geo.	4	215	46,418	209,298	0.95	1.06	0.00	0.00%
Maywick to Scalloway	2016 (SMP, 2025).	Maywick to Holms Geo.	10	-	-	-	-	-	-	-
	2016 (SMP, 2025).	South Havra.	20	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	Maywick to Scalloway.		30	214	45,633	214,139	0.97	1.03	0.00	0.01%
Ireland to Maywick	2016 (SMP, 2025).	Taing of Maywick to Maywick Bay.	16	211	44,667	214,049	0.97	1.03	0.00	0.01%
Bigton to Maywick	2016 (SMP, 2025).	Griskerry to Taing of Maywick.	220	210	44,195	213,480	0.96	1.04	0.00	0.07%
No Ness to Levenwick and Boddam to Virkie	2017 (SMP, 2025).	Quinni Geo to Boats Noost.	16	203	41,288	213,211	0.96	1.04	0.00	0.01%
Sumburgh to Peerie Voe of Spiggie	2021 (SMP, 2025).	Stack of Barons Geo to The Nev.	6	-	-	-	-	-	-	-
	2017 (SMP, 2025).	The Kame to Landvillas.	78	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Landvillas to Scarfi Taing.	172	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Scarfi Taing to Noup o' Noss.	332	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Stack o' da Noup.	130	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Stack o' da Noup to Kame.	142	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Kame to Corbie Geo.	14	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Whale Stack to Cloki Stack.	68	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Cloki Stack to Peerie Voe.	4	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Colsay	186	-	-	-	-	-	-	-
	Sumburgh to Peerie Voe of Spiggie.		1,132	202	40,867	212,576	0.96	1.04	0.00	0.40%
Sumburgh Head SPA	2021 (SMP, 2025).	Grutness Pier to Greystane Geo.	2	-	-	-	-	-	-	-
	2021 (SMP, 2025).	Sandwick to Virkie: Boddam to Virkie within SPA.	42	-	-	-	-	-	-	-
	2021 (SMP, 2025).	Sumburgh Head.	1,976	-	-	-	-	-	-	-
	Sumburgh Head SPA.		2,020	193	37,201	212,339	0.96	1.04	0.01	0.79%
Sumburgh Head Quarries	2017 (SMP, 2025).	Compass Head.	42	194	37,569	212,279	0.96	1.04	0.00	0.02%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	Fair Isle SPA.	13,332	163	26,719	203,425	0.92	1.09	0.07	7.57%
Papa Westray (North Hill and Holm) SPA	2017 (SMP, 2025).	North Hill RSPB, Papa Westray.	52	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2017 (SMP, 2025).	Holm of Papa Westray.	8	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Papa Westray 1.	56	-	-	-	-	-	-	-
	Papa Westray (North Hill and Holm) SPA.		116	192	36,984	191,810	0.87	1.15	0.00	0.05%
West Westray SPA	2017 (SMP, 2025).	West Westray 1.	2	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Noup Cliffs RSPB (West Westray 2).	34	-	-	-	-	-	-	-
	2017 (SMP, 2025).	West Westray 5.	16	-	-	-	-	-	-	-
	2017 (SMP, 2025).	West Westray 6.	22	-	-	-	-	-	-	-
	2017 (SMP, 2025).	West Westray 7.	2	-	-	-	-	-	-	-
	West Westray SPA.		76	193	37,074	189,734	0.86	1.17	0.00	0.03%
Westray and adjacent Holms - Tysties	2017 (SMP, 2025).	Westray 6 – Tysties.	142	192	36,979	190,911	0.86	1.16	0.00	0.06%
Westray - Rapness	2016 (SMP, 2025).	Castle o'Burrian.	3,068	183	33,478	189,646	0.86	1.17	0.01	1.49%
Calf of Eday SPA	2018 (SMP, 2025).	Calf of Eday.	2	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Eday 5.	78	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Eday 6.	2	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Eday 4.	2	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Eday 20.	12	-	-	-	-	-	-	-
	Calf of Eday SPA.		96	174	30,137	189,450	0.86	1.17	0.00	0.05%
Sanday	2017 (SMP, 2025).	Sanday 5.	16	174	30,391	190,141	0.86	1.16	0.00	0.01%
Rousay SPA	2016 (SMP, 2025).	Rousay 1 RSPB.	26	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 2.	6	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 4.	90	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 5.	16	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2018 (SMP, 2025).	Rousay 6.	20	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 7.	20	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 8.	2	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 11.	24	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 12.	20	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Rousay 13.	4	-	-	-	-	-	-	-
	Rousay SPA.		228	185	34,066	185,920	0.84	1.19	0.00	0.11%
Costa Head	2018 (SMP, 2025).	Costa Head.	38	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Costa Hill Cliffs.	8	-	-	-	-	-	-	-
	Costa Head.		46	189	35,535	184,183	0.83	1.20	0.00	0.02%
Eynhallow	2018 (SMP, 2025).	Eynhallow	174	183	33,405	184,388	0.83	1.20	0.00	0.09%
Birsay Cliffs - Point of Buckquoy to Loop of Cruie	2021 (SMP, 2025).	Skipi Geo to Whitaloo Point.	6	-	-	-	-	-	-	-
	2021 (SMP, 2025).	Whitaloo Point to Loop of Cruie.	70	-	-	-	-	-	-	-
	Birsay Cliffs - Point of Buckquoy to Loop of Cruie.		76	193	37,369	183,339	0.83	1.21	0.00	0.03%
Green Holms	2018 (SMP, 2025).	Muckle Green Holm.	66	167	28,002	185,737	0.84	1.19	0.00	0.04%
Marwick Head SPA	2016 (SMP, 2025).	Marwick Head RSPB.	24	200	40,082	181,368	0.82	1.22	0.00	0.01%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	Sule Skerry.	95,484	246	60,745	180,045	0.81	1.23	0.25	26.95%
Stronsay	2018 (SMP, 2025).	Burgh Head 2.	2	152	22,964	186,676	0.84	1.19	0.00	0.00%
Yesnaby to Marwick (West Mainland)	2018 (SMP, 2025).	Grid Square HY2221.	2	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Grid Square HY2217.	10	-	-	-	-	-	-	-
	Yesnaby to Marwick (West Mainland).		12	195	37,859	180,655	0.82	1.22	0.00	0.01%
Shapinsay (Coastal)	2016 (SMP, 2025).	Shapinsay 9.	12	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2016 (SMP, 2025).	Shapinsay 10.	6	-	-	-	-	-	-	-
	Shapinsay (Coastal).		18	160	25,522	182,911	0.83	1.21	0.00	0.01%
Stromness Area, Hundland	2018 (SMP, 2025).	Yesnaby 1.	10	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Yesnaby 2.	34	-	-	-	-	-	-	-
	Stromness Area, Hundland.		44	193	37,229	178,912	0.81	1.24	0.00	0.02%
Auskerry SPA	2016 (SMP, 2025).	Auskerry SPA.	446	148	22,015	185,089	0.84	1.20	0.00	0.34%
Deerness	2018 (SMP, 2025).	Mull Head - cliff-nesters.	4	152	22,955	182,148	0.82	1.21	0.00	0.00%
Rerwick Head to Mirkady Point	2019 (SMP, 2025).	Deerness 4.	2	157	24,500	180,602	0.82	1.23	0.00	0.00%
Hoy SPA	Burnell <i>et al.</i> (2023).	Hoy SPA.	860	177	31,390	174,753	0.79	1.27	0.00	0.48%
Copinsay SPA	2015 (SMP, 2025).	Black Holm.	134	-	-	-	-	-	-	-
	2023 (SMP, 2025).	Corn Holm.	362	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Ward Holm.	420	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Copinsay RSPB.	1,288	-	-	-	-	-	-	-
	Copinsay SPA.		2,204	145	21,163	180,258	0.81	1.23	0.02	1.78%
South Ronaldsay	2021 (SMP, 2025).	Hoxa Head (inland).	2	-	-	-	-	-	-	-
	2021 (SMP, 2025).	The Altar – Quindry.	32	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Windwick – Burwick.	38	-	-	-	-	-	-	-
	South Ronaldsay.		72	153	23,480	173,854	0.79	1.27	0.00	0.05%
Flotta & Calf of Flotta	2019 (SMP, 2025).	Flotta 5.	4	-	-	-	-	-	-	-
	2019 (SMP, 2025).	Flotta 6.	8	-	-	-	-	-	-	-
	Flotta & Calf of Flotta.		12	163	26,529	174,316	0.79	1.27	0.00	0.01%
Switha SPA	2019 (SMP, 2025).	Switha SPA.	112	162	26,185	173,517	0.78	1.28	0.00	0.08%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Hoy and South Walls - Tysties	2016 (SMP, 2025).	HOY 01.	142	-	-	-	-	-	-	-
	2016 (SMP, 2025).	HOY 02.	232	-	-	-	-	-	-	-
	2016 (SMP, 2025).	HOY 03.	10	-	-	-	-	-	-	-
	2016 (SMP, 2025).	HOY 04.	2	-	-	-	-	-	-	-
	2016 (SMP, 2025).	HOY 05.	2	-	-	-	-	-	-	-
	2016 (SMP, 2025).	HOY 06.	16	-	-	-	-	-	-	-
	2016 (SMP, 2025).	South Walls.	2	-	-	-	-	-	-	-
	Hoy and South Walls – Tysties.		406	167	28,037	172,249	0.78	1.28	0.00	0.26%
Pentland Firth Islands SPA	2016 (SMP, 2025).	Swona.	3,968	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Muckle Skerry.	578	-	-	-	-	-	-	-
	Pentland Firth Islands SPA.		4,546	152	23,010	91,398	0.78	1.29	0.03	3.55%
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	North Caithness Cliffs SPA.	6,078	172	29,656	91,398	0.74	1.35	0.04	3.85%
Smoo to Melvich	2023 (SMP, 2025).	Strathy 1.	22	-	-	-	-	-	-	-
	2016 (SMP, 2025).	Melvich 5.	12	-	-	-	-	-	-	-
	Smoo to Melvich.		34	207	43,014	91,398	0.72	1.39	0.00	0.02%
North Sutherland Islands SPA	2021 (SMP, 2025).	Eilean nan Ron whole island.	4	229	52,248	91,398	0.71	1.40	0.00	0.00%
Faraid Head / Balnakeil	2019 (SMP, 2025).	Faraid Head 2.	10	-	-	-	-	-	-	-
	2021 (SMP, 2025).	Faraid Head 3.	22	-	-	-	-	-	-	-
	2021 (SMP, 2025).	Faraid Head 4.	108	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Faraid Head 5.	20	-	-	-	-	-	-	-
	Faraid Head / Balnakeil.		160	253	63,800	91,398	0.74	1.36	0.00	0.05%
Cape Wrath SPA	Burnell <i>et al.</i> (2023).	Cape Wrath SPA.	4,488	268	71,632	91,398	0.75	1.33	0.01	1.16%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Wick Bay to Freshwick Bay	2018 (SMP, 2025).	Noss Head.	6	147	21,594	91,398	0.73	1.38	0.00	0.01%
East Caithness Cliffs SPA	2015 (SMP, 2025).	Badbea 2.	6	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Cleit Bheag.	184	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Cnoc na Stri 1.	6	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Cnoc na Stri 2.	4	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Corbiegeo	2	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Helman Head.	2	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Inver Hill.	20	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Ires Geo.	24	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Ness Castle.	2	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Occumster	2	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Ord of Caithness 2.	4	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Overton	4	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Ramsgate	4	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Roy Geo.	2	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Sarclet Head.	8	-	-	-	-	-	-	-
	2015 (SMP, 2025).	The Brough.	4	-	-	-	-	-	-	-
	2024 (SMP, 2025).	The Clett.	2	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Whaligoe 1.	8	-	-	-	-	-	-	-
	2024 (SMP, 2025).	Whaligoe 2.	10	-	-	-	-	-	-	-
	East Caithness Cliffs SPA.		298	159	25,384	132,426	0.60	1.67	0.00	0.27%
Portsoy to Cullen	2017 (SMP, 2025).	Garron Point.	32	137	18,700	91,398	0.57	1.74	0.00	0.04%

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Troup, Pennan and Lion's Heads SPA	2017 (SMP, 2025).	Troup & Lion's Head RSPB.	18	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Pennan Head.	42	-	-	-	-	-	-	-
	Troup, Pennan and Lion's Heads SPA.		60	111	12,286	141,186	0.64	1.57	0.00	0.11%
Buchan Ness to Collieston Coast SPA	2023 (SMP, 2025).	Buchan Ness to Collieston Coast SPA.	118	111	12,425	143,482	0.65	1.54	0.00	0.20%
Findon Ness - Hare Ness	2017 (SMP, 2025).	Hare Ness to Seal's Cove.	6	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Seal's Cove to Findon Ness.	14	-	-	-	-	-	-	-
	2015 (SMP, 2025).	Findon Ness to Black Slough.	4	-	-	-	-	-	-	-
	Findon Ness - Hare Ness.		24	150	22,468	126,513	0.57	1.75	0.00	0.03%
Burn of Daff	2017 (SMP, 2025).	Black Slough to Burn of Daff.	14	153	23,338	125,121	0.57	1.77	0.00	0.01%
Newtonhill - Hall Bay	2017 (SMP, 2025).	Newtonhill - May Craig.	6	156	24,247	123,796	0.56	1.79	0.00	0.01%
Newton Hill	2017 (SMP, 2025).	Doonie Point to Hall Bay.	4	159	25,150	122,394	0.55	1.81	0.00	0.00%
Stonehaven to Wine Cove	2018 (SMP, 2025).	Old Hall Bay - Castle Haven.	2	165	27,153	120,098	0.54	1.84	0.00	0.00%
Fowlsheugh SPA	2022 (SMP, 2025).	Fowlsheugh RSPB.	32	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Swallow Cove – Crawton.	14	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Thornyhive Bay.	8	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Tremuda / Old Hall Bay.	14	-	-	-	-	-	-	-
	Fowlsheugh SPA.		68	167	-	-	-	-	-	-
Catterline to Inbervie	2017 (SMP, 2025).	Rouen Bay.	4	-	-	-	-	-	-	-
	2017 (SMP, 2025).	The Slainges.	10	-	-	-	-	-	-	-
	2017 (SMP, 2025).	Whistleberry	6	-	-	-	-	-	-	-
	Catterline to Inbervie.		20	173	29,780	117,696	0.53	1.88	0.00	0.02%
Lunan Bay to Arbroath	2018 (SMP, 2025).	Auichmithie	10	-	-	-	-	-	-	-

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
	2018 (SMP, 2025).	Whiting Ness to Ethie Haven 4.	12	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Whiting Ness to Ethie Haven 7.	12	-	-	-	-	-	-	-
	2018 (SMP, 2025).	Whiting Ness to Ethie Haven 8.	6	-	-	-	-	-	-	-
	Lunan Bay to Arbroath.		40	208	43,082	103,017	0.47	2.15	0.00	0.03%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	Forth Islands SPA.	85,846	249	62,151	91,674	0.41	2.41	0.43	46.52%
Totals			234,412	-	2,684,882	-	-	89.82	0.91	100.00%
Foraging range (km)			265.4							
Potential Foraging area (km ²)			221,285							

Table note: *For Forth Islands SPA, the distance has been measured from the Isle of May due to holding the majority of the overall site population.

Table C1.6 Gannet apportionment results following the NatureScot apportionment guidance (NatureScot, 2018)

Main site	Count date (Source)	Sub-sites	Breeding adults	Distance to Project Site (km)	Distance ²	Area of foraging range as sea (km ²)	Proportion of Foraging Range as Sea	1/P(Sea)	Weight	Proportion
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	Hermaness	59,124	305	93,173	700,343	0.86	1.16	0.10	8.62%
Noss SPA	Burnell <i>et al.</i> (2023).	Noss SPA.	27,530	222	49,127	678,291	0.83	1.20	0.09	7.86%
Foula SPA	Burnell <i>et al.</i> (2023).	Foula SPA.	4,886	235	55,203	708,213	0.87	1.15	0.01	1.19%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	Fair Isle SPA.	9,942	163	26,719	684,860	0.84	1.19	0.06	5.17%
West Westray SPA	Burnell <i>et al.</i> (2023).	West Westray 2.	2,768	193	37,074	708,776	0.87	1.15	0.01	1.00%
North Rona and Sula Sgeir SPA	Burnell <i>et al.</i> (2023).	Sula Sgeir.	24,542	335	112,466	708,366	0.87	1.15	0.03	2.93%
Marwick Head SPA	Burnell <i>et al.</i> (2023).	Marwick Head SPA.	18	200	40,082	704,356	0.86	1.16	0.00	0.01%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	Sule Skerry.	9,030	-	-	-	-	-	-	-
	Burnell <i>et al.</i> (2023).	Sule Stack.	9,100	-	-	-	-	-	-	-
	Sule Skerry and Sule Stack SPA.		18,130	246	60,745	708,948	0.87	1.15	0.05	4.00%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	Troup & Lion's Head RSPB.	9,650	111	12,286	564,582	0.69	1.44	0.15	13.23%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	Bass Rock.	150,518	262	68,791	498,515	0.46	2.19	0.65	55.99%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	St Abb's Head to Fast Castle SPA.	22	267	71,466	387,250	0.48	2.11	0.00	0.01%
Totals			307,130	-	627,132	-	-	15.06	1.16	100.00%
Foraging range (km)			509.4							
Potential foraging area (km ²)			815,207							
Foraging range (km) for the Forth Islands SPA			590							
Potential foraging area (km ²) for the Forth Islands SPA			1,093,588							

Table note: *For Forth Islands SPA, the distance has been measured from Bass Rock due to holding the majority of the overall site population.

Appendix C2

Non-breeding season apportionment rate calculations

Table C2.1 Great black-backed gull – Non-breeding season

SPA	Total non-breeding BDMPS within the North Sea (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
East Caithness Cliffs SPA	91,399	350	0.50	175	0.19%
Copinsay SPA		432	0.50	216	0.24%
Hoy SPA		120	0.15	18	0.02%
Calf of Eday SPA		562	0.15	84	0.09%

Table C2.2 Kittiwake – Return migration season (collision risk and distributional responses)

SPA	Total return migration BDMPS within the North Sea (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
Farne Islands SPA	627,816	6,886	0.60	4,132	0.66%
St Abb's Head to Fast Castle SPA		6,806	0.60	4,084	0.65%
Forth Islands SPA		6,200	0.60	3,720	0.59%
Fowlsheugh SPA		18,674	0.60	11,204	1.78%
Buchan Ness to Collieston Coast SPA		25,084	0.60	15,050	2.40%
Troup, Pennan and Lion's Heads SPA		29,792	0.60	17,875	2.85%
East Caithness Cliffs SPA		80,820	0.60	48,492	7.72%
North Caithness Cliffs SPA		20,300	0.60	12,180	1.94%
Copinsay SPA		1,332	0.60	799	0.13%
Hoy SPA		794	0.60	476	0.08%
Marwick Head SPA		1,052	0.60	631	0.10%
Rousay SPA		3,528	0.60	2,117	0.34%
Calf of Eday SPA		1,494	0.60	896	0.14%

SPA	Total return migration BDMPS within the North Sea (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
West Westray SPA		24,110	0.60	14,466	2.30%
Fair Isle SPA		1,542	0.60	925	0.15%
Sumburgh Head SPA		420	0.60	252	0.04%
Noss SPA		1,014	0.60	608	0.10%
Foula SPA		654	0.60	392	0.06%
Hermaness, Saxa Vord and Valla Field SPA		782	0.60	469	0.07%
Cape Wrath SPA		20,688	0.01	207	0.03%
Flamborough and Filey SPA		75,234	0.60	45,140	7.19%

Table C2.3 Kittiwake – Post-breeding migration season (collision risk only)

SPA	Total post-breeding migration BDMPS within the North Sea (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
Farne Islands SPA	829,937	6,886	0.60	4,132	0.50%
St Abb's Head to Fast Castle SPA		6,806	0.60	4,084	0.49%
Forth Islands SPA		6,200	0.60	3,720	0.45%
Fowlsheugh SPA		18,674	0.60	11,204	1.35%
Buchan Ness to Collieston Coast SPA		25,084	0.60	15,050	1.81%
Troup, Pennan and Lion's Heads SPA		29,792	0.60	17,875	2.15%
East Caithness Cliffs SPA		80,820	0.60	48,492	5.84%
North Caithness Cliffs SPA		20,300	0.60	12,180	1.47%
Copinsay SPA		1,332	0.60	799	0.10%
Hoy SPA		794	0.60	476	0.06%
Marwick Head SPA		1,052	0.60	631	0.08%
Rousay SPA		3,528	0.60	2,117	0.26%
Calf of Eday SPA		1,494	0.60	896	0.11%

SPA	Total post-breeding migration BDMPS within the North Sea (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
West Westray SPA		24,110	0.60	14,466	1.74%
Fair Isle SPA		1,542	0.60	925	0.11%
Sumburgh Head SPA		420	0.60	252	0.03%
Noss SPA		1,014	0.60	608	0.07%
Foula SPA		654	0.60	392	0.05%
Hermaness, Saxa Vord and Valla Field SPA		782	0.60	469	0.06%
Cape Wrath SPA		20,688	0.01	207	0.02%
Flamborough and Filey SPA		75,234	0.60	45,140	5.44%

Table C2.4 Razorbill – Migration-free Winter season

SPA	Total migration-free Winter BDMPS within the North Sea and English Channel (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
St Abb's Head to Fast Castle SPA	218,622	2,438	0.3	731	0.33%
Forth Islands SPA		5,250	0.3	1,575	0.72%
Fowlsheugh SPA		7,048	0.3	2,114	0.97%
Troup, Pennan and Lion's Heads SPA		3,486	0.3	1,046	0.48%
East Caithness Cliffs SPA		25,000	0.3	7,500	3.43%
North Caithness Cliffs SPA		3,400	0.3	1,020	0.47%
West Westray SPA		1,100	0.3	330	0.15%
Fair Isle SPA		1,830	0.3	549	0.25%
Foula SPA		750	0.3	225	0.10%
Flamborough and Filey SPA		20,002	0.3	6,001	2.74%

Table C2.5 Puffin – Non-breeding season

SPA	Total non-breeding BDMPS within the North Sea and English Channel (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
Farne Islands SPA	231,957	79,924	0.500	39,962	17.23%
Forth Islands SPA		124,462	0.500	62,231	26.83%
North Caithness Cliffs SPA		1,952	0.150	293	0.13%
Hoy SPA		7,000	0.150	1,050	0.45%
Fair Isle SPA		21,412	0.150	3,212	1.38%
Noss SPA		1,604	0.150	241	0.10%
Foula SPA		45,000	0.150	6,750	2.91%
Hermaness, Saxa Vord and Valla Field SPA		47,322	0.150	7,098	3.06%
Sule Skerry & Sule Stack SPA		118,942	0.001	119	0.05%

Table C2.6 Gannet – Return migration season (collision risk only)

SPA	Total return migration BDMPS within the North Sea and English Channel (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
Forth Islands SPA	248,385	110,964	0.7	77,675	31.27%
Fair Isle SPA		7,848	0.7	5,494	2.21%
Noss SPA		19,534	0.7	13,674	5.51%
Hermaness, Saxa Vord and Valla Field SPA		48,706	0.7	34,094	13.73%
Sule Skerry and Sule Stack SPA		9,350	0.0	0	0.00%
North Rona and Sula Sgeir SPA		18,450	0.0	0	0.00%
Flamborough and Filey Coast SPA		22,122	0.7	15,485	6.23%

Table C2.7 Gannet – Post-breeding migration season (collision risk and distributional responses)

SPA	Total post-breeding migration BDMPS within the North Sea and English Channel (all individuals)	Furness (2015) population estimate (breeding adults)	Furness (2015) proportion expected to remain in the BDMPS	Furness (2015) population remaining within the BDMPS	Proportion of BDMPS (%)
Forth Islands (UK) SPA	456,298	110,964	1.0	110,964	24.32%
Fair Isle SPA		7,848	0.8	6,278	1.38%
Noss SPA		19,534	0.8	15,627	3.42%
Hermaness, Saxa Vord and Valla Field SPA		48,706	0.8	38,965	8.54%
Sule Skerry and Sule Stack SPA		9,350	0.1	935	0.20%
North Rona and Sula Sgeir SPA		18,450	0.1	1,845	0.40%
Flamborough and Filey Coast SPA		22,122	1.0	22,122	4.85%

Appendix C3

95% confidence limits for the apportioned collision impact values presented within the RIAA for designated sites

Table C3.1 Great black-backed gull

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding	Non-breeding	Annual	Breeding	Non-breeding	Annual
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	532	N/A	0.00-0.09	0.00-0.09	N/A	0.000-0.017%	0.000-0.017%
	Latest Count (2015-2024).	278	N/A	0.00-0.09	0.00-0.09	N/A	0.000-0.033%	0.000-0.033%
Hoy SPA	Burnell <i>et al.</i> (2023).	134	N/A	0.00-0.12	0.00-0.12	N/A	0.001-0.087%	0.001-0.087%
	Latest Count (2023-2024).	97	N/A	0.00-0.12	0.00-0.12	N/A	0.002-0.121%	0.002-0.121%
Hoy SPA	Burnell <i>et al.</i> (2023).	64	N/A	0.00-0.01	0.00-0.01	N/A	0.000-0.015%	0.000-0.015%
	Latest Count (2024).	12	N/A	0.00-0.01	0.00-0.01	N/A	0.001-0.081%	0.001-0.081%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	116	N/A	0.00-0.04	0.00-0.04	N/A	0.000-0.038%	0.000-0.038%

Table C3.2 Kittiwake

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	22,590	0.33-6.73	0.03-0.62	0.02-0.28	0.05-0.90	0.38-7.63	0.001-0.030%	0.000-0.004%	0.002-0.034%
	Latest Count (2025).	31,406	0.33-6.73	0.03-0.62	0.02-0.28	0.05-0.90	0.38-7.63	0.001-0.021%	0.000-0.003%	0.001-0.024%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	21,232	0.32-6.49	0.04-0.74	0.02-0.33	0.06-1.07	0.38-7.56	0.002-0.031%	0.000-0.005%	0.002-0.036%
	Latest Count (2017-2023).	27,344	0.32-6.49	0.04-0.74	0.02-0.33	0.06-1.07	0.38-7.56	0.001-0.024%	0.000-0.004%	0.001-0.028%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	28,078	0.22-4.48	0.02-0.46	0.01-0.21	0.04-0.67	0.26-5.15	0.001-0.016%	0.000-0.002%	0.001-0.018%
	Latest Count (2023).	30,966	0.22-4.48	0.02-0.46	0.01-0.21	0.04-0.67	0.26-5.15	0.001-0.014%	0.000-0.002%	0.001-0.017%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	48,958	0.41-8.25	0.10-2.00	0.06-0.91	0.16-2.91	0.56-11.16	0.001-0.017%	0.000-0.006%	0.001-0.023%
	Latest Count (2024).	35,008	0.41-8.25	0.10-2.00	0.06-0.91	0.16-2.91	0.56-11.16	0.001-0.024%	0.000-0.008%	0.002-0.032%
	Burnell <i>et al.</i> (2023).	11,142	0.06-1.17	0.03-0.50	0.01-0.23	0.04-0.73	0.10-1.90	0.001-0.010%	0.000-0.007%	0.001-0.017%

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
North Caithness Cliffs SPA	Latest Count (2023-2024).	18,608	0.06-1.17	0.03-0.50	0.01-0.23	0.04-0.73	0.10-1.90	0.000-0.006%	0.000-0.004%	0.001-0.010%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	9,084	0.04-0.89	0.01-0.15	0.00-0.07	0.01-0.22	0.06-1.11	0.000-0.010%	0.000-0.002%	0.001-0.012%
	Latest Count (2024).	14,216	0.04-0.89	0.01-0.15	0.00-0.07	0.01-0.22	0.06-1.11	0.000-0.006%	0.000-0.002%	0.000-0.008%
Copinsay SPA	Burnell <i>et al.</i> (2023).	1,910	0.01-0.26	0.00-0.03	0.00-0.02	0.00-0.05	0.02-0.31	0.001-0.013%	0.000-0.003%	0.001-0.016%
	Latest Count (2024).	670	0.01-0.26	0.00-0.03	0.00-0.02	0.00-0.05	0.02-0.31	0.002-0.038%	0.000-0.007%	0.002-0.046%
Hoy SPA	Burnell <i>et al.</i> (2023).	532	0.00-0.05	0.00-0.02	0.00-0.01	0.00-0.03	0.00-0.08	0.000-0.010%	0.000-0.006%	0.001-0.015%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	10,300	0.04-0.78	0.01-0.17	0.00-0.08	0.01-0.24	0.05-1.03	0.000-0.008%	0.000-0.002%	0.001-0.010%
	Latest Count (2024).	11,992	0.04-0.78	0.01-0.17	0.00-0.08	0.01-0.24	0.05-1.03	0.000-0.007%	0.000-0.002%	0.000-0.009%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	896	0.00-0.09	0.00-0.04	0.00-0.02	0.00-0.06	0.01-0.15	0.001-0.010%	0.000-0.006%	0.001-0.016%

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	672	0.00-0.06	0.00-0.04	0.00-0.02	0.00-0.05	0.01-0.12	0.000-0.009%	0.000-0.008%	0.001-0.017%
Rousay SPA	Burnell <i>et al.</i> (2023).	660	0.00-0.05	0.00-0.09	0.00-0.04	0.01-0.13	0.01-0.18	0.000-0.008%	0.001-0.019%	0.001-0.027%
Marwick Head SPA	Burnell <i>et al.</i> (2023).	1,812	0.01-0.13	0.00-0.03	0.00-0.01	0.00-0.04	0.01-0.16	0.000-0.007%	0.000-0.002%	0.000-0.009%
	Latest Count (2023).	2,878	0.01-0.13	0.00-0.03	0.00-0.01	0.00-0.04	0.01-0.16	0.000-0.004%	0.000-0.001%	0.000-0.006%
West Westray SPA	Burnell <i>et al.</i> (2023).	1,932	0.02-0.42	0.03-0.60	0.02-0.27	0.05-0.87	0.07-1.28	0.001-0.022%	0.002-0.045%	0.004-0.066%
	Latest Count (2017-2023).	4,838	0.02-0.42	0.03-0.60	0.02-0.27	0.05-0.87	0.07-1.28	0.000-0.009%	0.001-0.018%	0.001-0.027%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	8,804	0.03-0.53	0.01-0.17	0.00-0.08	0.01-0.25	0.04-0.78	0.000-0.006%	0.000-0.003%	0.000-0.009%
	Latest Count (2024).	5,790	0.03-0.53	0.01-0.17	0.00-0.08	0.01-0.25	0.04-0.78	0.000-0.009%	0.000-0.004%	0.001-0.013%
Sumburgh Head SPA	Burnell <i>et al.</i> (2023).	1,932	0.01-0.13	0.00-0.01	<0.01	0.00-0.02	0.01-0.15	0.000-0.007%	0.000-0.001%	0.000-0.008%
	Latest Count	691	0.01-0.13	0.00-0.01	<0.01	0.00-0.02	0.01-0.15	0.001-0.019%	0.000-0.002%	0.001-0.021%

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
	(2018-2023).									
Noss SPA	Burnell <i>et al.</i> (2023).	358	0.00-0.02	0.00-0.03	0.00-0.01	0.00-0.04	0.00-0.05	0.000-0.005%	0.001-0.010%	0.001-0.015%
	Latest Count (2024).	154	0.00-0.02	0.00-0.03	0.00-0.01	0.00-0.04	0.00-0.05	0.001-0.011%	0.001-0.024%	0.002-0.035%
Foula SPA	Burnell <i>et al.</i> (2023).	850	0.00-0.04	0.00-0.02	0.00-0.01	0.00-0.02	0.00-0.06	0.000-0.005%	0.000-0.003%	0.000-0.007%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	354	0.00-0.01	0.00-0.02	0.00-0.01	0.00-0.03	0.00-0.04	0.000-0.003%	0.000-0.008%	0.001-0.011%
	Latest Count (2023).	354	0.00-0.01	0.00-0.02	0.00-0.01	0.00-0.03	0.00-0.04	0.000-0.003%	0.000-0.008%	0.001-0.011%
Cape Wrath SPA	Burnell <i>et al.</i> (2023).	7,244	0.02-0.32	0.00-0.01	<0.01	0.00-0.01	0.02-0.33	0.000-0.004%	<0.001%	0.000-0.005%
	Latest Count (2017-2023).	6,616	0.02-0.32	0.00-0.01	<0.01	0.00-0.01	0.02-0.33	0.000-0.005%	<0.001%	0.000-0.005%
	Burnell <i>et al.</i> (2023).	45,504	N/A	0.10-1.86	0.05-0.84	0.15-2.71	0.15-2.71	N/A	0.000 - 0.006%	0.000-0.006%

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
Flamborough and Filey Coast SPA	Latest Count (2022).	44,574	N/A	0.10-1.86	0.05-0.84	0.15-2.71	0.15-2.71	N/A	0.000-0.006%	0.000-0.006%

Table C3.3 Great Skua

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding	Non-breeding	Annual	Breeding	Non-breeding	Annual
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	2,060	0.00-0.14	N/A	0.00-0.14	0.000-0.007%	N/A	0.000-0.007%
	Latest Count SMP (2023-2024).	472	0.00-0.14	N/A	0.00-0.14	0.000-0.030%	N/A	0.000-0.030%
Fetlar SPA	Burnell <i>et al.</i> (2023).	1,708	0.00-0.15	N/A	0.00-0.15	0.000-0.009%	N/A	0.000-0.009%
	Latest Count (2023)*.	266	0.00-0.15	N/A	0.00-0.15	0.000-0.056%	N/A	0.000-0.056%
Noss SPA	Burnell <i>et al.</i> (2023).	952	0.00-0.13	N/A	0.00-0.13	0.000-0.013%	N/A	0.000-0.013%
	Latest Count SMP (2024).	160	0.00-0.13	N/A	0.00-0.13	0.000-0.079%	N/A	0.000-0.079%
Foula SPA	Burnell <i>et al.</i> (2023).	3692	0.00-0.42	N/A	0.00-0.42	0.000-0.011%	N/A	0.000-0.011%
	Latest Count (2023)*.	616	0.00-0.42	N/A	0.00-0.42	0.000-0.068%	N/A	0.000-0.068%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	860	0.00-0.21	N/A	0.00-0.21	0.000-0.024%	N/A	0.000-0.024%
	Latest Count SMP (2024).	326	0.00-0.21	N/A	0.00-0.21	0.000-0.064%	N/A	0.000-0.064%
Hoy SPA	Burnell <i>et al.</i> (2023).	2810	0.00-0.56	N/A	0.00-0.56	0.000-0.020%	N/A	0.000-0.020%

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding	Non-breeding	Annual	Breeding	Non-breeding	Annual
	Latest Count (2023)*.	514	0.00-0.56	N/A	0.00-0.56	0.000-0.108%	N/A	0.000-0.108%
St Kilda SPA	Burnell <i>et al.</i> (2023).	422	0.00-0.01	N/A	0.00-0.01	0.000-0.002%	N/A	0.000-0.002%
	Latest Count SMP (2024).	140	0.00-0.01	N/A	0.00-0.01	0.000-0.007%	N/A	0.000-0.007%
Handa SPA	Burnell <i>et al.</i> (2023).	566	0.00-0.04	N/A	0.00-0.04	0.000-0.006%	N/A	0.000-0.006%
	Latest Count SMP (2025).	176	0.00-0.04	N/A	0.00-0.04	0.000-0.021%	N/A	0.000-0.021%

Table note: *Counts taken from Tremlett *et al.* (2024).

Table C3.4 Gannet

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
Forth Islands SPA	Burnell <i>et al.</i> (2023).	150,518	2.92-32.91	0.00-0.87	0.09-1.57	0.09-2.44	3.01-35.35	0.002-0.022%	0.000-0.002%	0.002-0.023%
	Latest Count (2024).	92,090	2.92-32.91	0.00-0.87	0.09-1.57	0.09-2.44	3.01-35.35	0.003-0.036%	0.000-0.003%	0.003-0.038%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	9,942	0.27-3.04	0.00-0.06	0.01-0.09	0.01-0.15	0.27-3.19	0.003-0.031%	0.000-0.002%	0.003-0.032%
	Latest Count (2024).	11,184	0.27-3.04	0.00-0.06	0.01-0.09	0.01-0.15	0.27-3.19	0.002-0.027%	0.000-0.001%	0.002-0.029%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	18,130	0.21-2.35	<0.01	0.00-0.01	0.00-0.01	0.21-2.36	0.001-0.013%	<0.001%	0.001-0.013%
	Latest Count (2013-2024).	15,648	0.21-2.35	<0.01	0.00-0.01	0.00-0.01	0.21-2.36	0.001-0.015%	<0.001%	0.001-0.015%
Noss SPA	Burnell <i>et al.</i> (2023).	27,530	0.41-4.62	0.00-0.15	0.01-0.22	0.01-0.37	0.42-5.00	0.001-0.017%	0.000-0.001%	0.002-0.018%
	Latest Count (2023).	24,670	0.41-4.62	0.00-0.15	0.01-0.22	0.01-0.37	0.42-5.00	0.002-0.019%	0.000-0.002%	0.002-0.020%
	Burnell <i>et al.</i> (2023).	24,542	0.15-1.72	<0.01	0.00-0.03	0.00-0.03	0.15-1.75	0.001-0.007%	<0.001%	0.001-0.007%

Site	Population count	Population size (breeding adult)	Predicted collision impacts (breeding adults)					Percentage point change in survival rate (%)		
			Breeding	Return migration	Post-breeding migration	Non-breeding	Annual	Breeding	Non-breeding	Annual
North Rona and Sula Sgeir SPA	Burnell <i>et al.</i> (2023).	18,990	0.15-1.72	<0.01	0.00-0.03	0.00-0.03	0.15-1.75	0.001-0.009%	<0.001%	0.001-0.009%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	59,124	0.45-5.06	0.00-0.38	0.03-0.55	0.03 - 0.93	0.48 - 6.00	0.001-0.009%	0.000-0.002%	0.001-0.010%
	Latest Count (2024).	39,606	0.45-5.06	0.00-0.38	0.03-0.55	0.03 - 0.93	0.48 - 6.00	0.001 - 0.013%	0.000-0.002%	0.001-0.015%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	26,784	N/A	0.00-0.17	0.02-0.31	0.02 - 0.49	0.02 - 0.49	N/A	0.000-0.002%	0.000-0.002%
	Latest Count (2024).	31,588	N/A	0.00-0.17	0.02-0.31	0.02 - 0.49	0.02 - 0.49	N/A	0.000-0.002%	0.000-0.002%

Appendix C4

95% confidence limits for the apportioned abundance and distributional response values presented within the RIAA for designated sites

Table C4.1 Kittiwake apportioned upper and lower confidence limits predicted abundance for the OAA plus a 2km buffer

Site	Apportioned abundance (breeding adults)	
	Breeding season	Non-breeding season
Buchan Ness to Collieston Coast SPA	51.8-233.1	2.0-5.4
Troup, Pennan and Lion's Heads SPA	49.9-224.6	2.4-6.4
Fowlsheugh SPA	34.5-155.0	1.5-4.0
East Caithness Cliffs SPA	63.5-285.8	6.5-17.3
North Caithness Cliffs SPA	9.0-40.5	1.6-4.3
Forth Islands SPA	6.8-30.8	0.5-1.3
Copinsay SPA	2.0-8.9	0.1-0.3
Hoy SPA	0.4-1.8	0.1-0.2
St Abb's Head to Fast Castle SPA	6.0-27.1	0.5-1.5
Fair Isle SPA	0.7-3.2	0.1-0.3
Calf of Eday SPA	0.5-2.2	0.1-0.3
Rousay SPA	0.4-1.8	0.3-0.8
Marwick Head SPA	1.0-4.3	0.1-0.2
West Westray SPA	3.2-14.4	1.9-5.2

Site	Apportioned abundance (breeding adults)	
	Breeding season	Non-breeding season
Farne Islands SPA	4.1-18.4	0.6-1.5
Sumburgh Head SPA	1.0-4.5	0.0-0.1
Noss SPA	0.1-0.6	0.1-0.2
Foula SPA	0.3-1.4	0.1-0.1
Hermaness, Saxa Vord and Valla Field SPA	0.1-0.4	0.1-0.2
Cape Wrath SPA	2.5-11.1	0.0-0.1
Flamborough and Filey Coast SPA	N/A	6.0-16.1

Table C4.2 Kittiwake lower confidence limit distributional response effects apportioned to designated sites

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3 % Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	22,590	0.16-0.47	0.01-0.02	0.16-0.48	0.001-0.002%	<0.001%	0.001-0.002%
	Latest Count (2025).	31,406	0.16-0.16	0.01-0.02	0.16-0.17	<0.001%	<0.001%	0.001-0.001%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	21,232	0.15-0.45	0.01-0.02	0.16-0.47	0.001-0.002%	<0.001%	0.001-0.002%
	Latest Count (2017-2023).	27,344	0.15-0.15	0.01-0.02	0.16-0.17	0.001-0.001%	<0.001%	0.001-0.001%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	28,078	0.10-0.31	0.00-0.01	0.11-0.32	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2023).	30,966	0.10-0.10	0.00-0.01	0.11-0.12	<0.001%	<0.001%	<0.001%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	48,958	0.19-0.57	0.02-0.06	0.21-0.63	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2024).	35,008	0.19-0.19	0.02-0.06	0.21-0.25	0.001-0.001%	<0.001%	0.001-0.001%
	Burnell <i>et al.</i> (2023).	11,142	0.03-0.08	0.00-0.01	0.03-0.10	0.000-0.001%	<0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3 % Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
North Caithness Cliffs SPA	Latest Count (2023-2024).	18,608	0.03-0.03	0.00-0.01	0.03-0.04	<0.001%	<0.001%	<0.001%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	9,084	0.02-0.06	<0.01	0.02-0.07	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2024).	14,216	0.02-0.02	<0.01	0.02-0.03	<0.001%	<0.001%	<0.001%
Copinsay SPA	Burnell <i>et al.</i> (2023).	1,910	0.01-0.02	<0.01	0.01-0.02	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2024).	670	0.01-0.01	<0.01	0.01-0.01	0.001-0.001%	<0.001%	0.001-0.001%
Hoy SPA	Burnell <i>et al.</i> (2023).	532	<0.01	<0.01	<0.01	0.000-0.001%	<0.001%	0.000-0.001%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	10,300	0.02-0.05	<0.01	0.02-0.06	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2024).	11,992	0.02-0.02	<0.01	0.02-0.02	<0.001%	<0.001%	<0.001%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	896	0.00-0.01	<0.01	0.00-0.01	0.000-0.001%	<0.001%	0.000-0.001%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	672	<0.01	<0.01	0.00-0.01	0.000-0.001%	<0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3 % Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
Rousay SPA	Burnell <i>et al.</i> (2023).	660	<0.01	<0.01	0.00-0.01	0.000-0.001%	<0.001%	0.000-0.001%
Marwick Head SPA	Burnell <i>et al.</i> (2023).	1,812	0.00-0.01	<0.01	0.00-0.01	<0.001%	<0.001%	0.000-0.001%
	Latest Count (2023).	2,878	<0.01	<0.01	<0.01	<0.001%	<0.001%	<0.001%
West Westray SPA	Burnell <i>et al.</i> (2023).	1,932	0.01-0.03	0.01-0.02	0.02-0.05	0.000-0.001%	0.000-0.001%	0.001-0.002%
	Latest Count (2017-2023).	4,838	0.01-0.01	0.01-0.02	0.02-0.03	<0.001%	<0.001%	0.000-0.001%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	8,804	0.01-0.04	<0.01	0.01-0.04	<0.001%	<0.001%	<0.001%
	Latest Count (2024).	5,790	0.01-0.01	<0.01	0.01-0.02	<0.001%	<0.001%	<0.001%
Sumburgh Head SPA	Burnell <i>et al.</i> (2023).	1,932	0.00-0.01	<0.01	0.00-0.01	<0.001%	<0.001%	<0.001%
	Latest Count (2018-2023).	691	<0.01	<0.01	<0.01	<0.001%	<0.001%	<0.001%
Noss SPA	Burnell <i>et al.</i> (2023).	358	<0.01	<0.01	<0.01	<0.001%	<0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3 % Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
	Latest Count (2024).	154	<0.01	<0.01	<0.01	<0.001%	<0.001%	0.000-0.001%
Foula SPA	Burnell <i>et al.</i> (2023).	850	<0.01	<0.01	<0.01	<0.001%	<0.001%	<0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	354	<0.01	<0.01	<0.01	<0.001%	<0.001%	<0.001%
	Latest Count (2023).	354	<0.01	<0.01	<0.01	<0.001%	<0.001%	<0.001%
Cape Wrath SPA	Burnell <i>et al.</i> (2023).	7,244	0.01-0.02	<0.01	0.01-0.02	<0.001%	<0.001%	<0.001%
	Latest Count (2017-2023).	6,616	0.01-0.01	<0.01	0.01-0.01	<0.001%	<0.001%	<0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	45,504	N/A	0.02-0.05	0.02-0.05	N/A	<0.001%	<0.001%
	Latest Count (2022).	44,574	N/A	0.02-0.05	0.02-0.05	N/A	<0.001%	<0.001%

Table C4.3 Kittiwake upper confidence limit distributional response effects apportioned to designated sites

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	22,590	0.70-2.10	0.02-0.05	0.72-2.15	0.003-0.009%	<0.001%	0.003-0.009%
	Latest Count (2025).	31,406	0.70-0.70	0.02-0.05	0.72-0.75	0.002-0.002%	<0.001%	0.002-0.002%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	21,232	0.67-2.02	0.02-0.06	0.69-2.08	0.003-0.010%	<0.001%	0.003-0.010%
	Latest Count (2017-2023).	27,344	0.67-0.67	0.02-0.06	0.69-0.73	0.002-0.002%	<0.001%	0.003-0.003%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	28,078	0.47-1.40	0.01-0.04	0.48-1.43	0.002-0.005%	<0.001%	0.002-0.005%
	Latest Count (2023).	30,966	0.47-0.47	0.01-0.04	0.48-0.50	0.002-0.002%	<0.001%	0.002-0.002%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	48,958	0.86-2.57	0.05-0.16	0.91-2.73	0.002-0.005%	<0.001%	0.002-0.006%
	Latest Count (2024).	35,008	0.86-0.86	0.05-0.16	0.91-1.01	0.002-0.002%	<0.001%	0.003-0.003%
	Burnell <i>et al.</i> (2023).	11,142	0.12-0.36	0.01-0.04	0.13-0.40	0.001-0.003%	<0.001%	0.001-0.004%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
North Caithness Cliffs SPA	Latest Count (2023-2024).	18,608	0.12-0.12	0.01-0.04	0.13-0.16	0.001-0.001%	<0.001%	0.001-0.001%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	9,084	0.09-0.28	0.00-0.01	0.10-0.29	0.001-0.003%	<0.001%	0.001-0.003%
	Latest Count (2024).	14,216	0.09-0.09	0.00-0.01	0.10-0.10	0.001-0.001%	<0.001%	0.001-0.001%
Copinsay SPA	Burnell <i>et al.</i> (2023).	1,910	0.03-0.08	<0.01	0.03-0.08	0.001-0.004%	<0.001%	0.001-0.004%
	Latest Count (2024).	670	0.03-0.03	<0.01	0.03-0.03	0.004-0.004%	<0.001%	0.004-0.004%
Hoy SPA	Burnell <i>et al.</i> (2023).	532	0.01-0.02	<0.01	0.01-0.02	0.001-0.003%	<0.001%	0.001-0.003%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	10,300	0.08-0.24	0.00-0.01	0.09-0.26	0.001-0.002%	<0.001%	0.001-0.002%
	Latest Count (2024).	11,992	0.08-0.08	0.00-0.01	0.09-0.09	0.001-0.001%	<0.001%	0.001-0.001%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	896	0.01-0.03	<0.01	0.01-0.03	0.001-0.003%	<0.001%	0.001-0.004%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	672	0.01 -0.02	<0.01	0.01-0.02	0.001-0.003%	<0.001%	0.001-0.003%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
Rousay SPA	Burnell <i>et al.</i> (2023).	660	0.01-0.02	0.00-0.01	0.01-0.02	0.001-0.002%	0.000-0.001%	0.001-0.003%
Marwick Head SPA	Burnell <i>et al.</i> (2023).	1,812	0.01-0.04	<0.01	0.01-0.04	0.001-0.002%	<0.001%	0.001-0.002%
	Latest Count (2023).	2,878	0.01-0.01	<0.01	0.01-0.02	<0.001%	<0.001%	0.000-0.001%
West Westray SPA	Burnell <i>et al.</i> (2023).	1,932	0.04-0.13	0.02-0.05	0.06-0.18	0.002-0.007%	0.001-0.002%	0.003-0.009%
	Latest Count (2017-2023).	4,838	0.04-0.04	0.02-0.05	0.06-0.09	0.001-0.001%	0.000-0.001%	0.001-0.002%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	8,804	0.06-0.17	0.00-0.01	0.06-0.18	0.001-0.002%	<0.001%	0.001-0.002%
	Latest Count (2024).	5,790	0.06-0.06	0.00-0.01	0.06-0.07	0.001-0.001%	<0.001%	0.001-0.001%
Sumburgh Head SPA	Burnell <i>et al.</i> (2023).	1,932	0.01-0.04	<0.01	0.01-0.04	0.001-0.002%	<0.001%	0.001-0.002%
	Latest Count (2018-2023).	691	0.01-0.01	<0.01	0.01-0.01	0.002-0.002%	<0.001%	0.002-0.002%
Noss SPA	Burnell <i>et al.</i> (2023).	358	0.00-0.01	<0.01	0.00-0.01	0.000-0.001%	0.000-0.001%	0.001-0.002%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort	Breeding; 30% Disp & 1-3% Mort	Non-breeding; 30% Disp & 1-3% Mort	Annual; 30% Disp & 1-3% Mort
	Latest Count (2024).	154	<0.01	<0.01	<0.01	0.001-0.001%	0.000-0.001%	0.002-0.002%
Foula SPA	Burnell <i>et al.</i> (2023).	850	0.00-0.01	<0.01	0.00-0.01	0.000-0.001%	<0.001%	0.001-0.002%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	354	<0.01	<0.01	<0.01	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2023).	354	<0.01	<0.01	<0.01	<0.001%	<0.001%	0.000-0.001%
Cape Wrath SPA	Burnell <i>et al.</i> (2023).	7,244	0.03-0.10	<0.01	0.03-0.10	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2017-2023).	6,616	0.03-0.03	<0.01	0.03-0.03	0.001-0.001%	<0.001%	0.001-0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	45,504	N/A	0.05-0.14	0.05-0.14	N/A	<0.001%	<0.001%
	Latest Count (2022).	44,574	N/A	0.05-0.14	0.05-0.14	N/A	<0.001%	<0.001%

Table C4.4 Guillemot apportioned upper and lower confidence limits predicted abundance for the OAA plus a 2km buffer

Site	Apportioned abundance (breeding adults)	
	Breeding season	Non-breeding season
Buchan Ness to Collieston Coast SPA	4,229	4,229
Troup, Pennan and Lion's Heads SPA	3,691	3,691
Copinsay SPA	1,324	1,324
Fair Isle SPA	930	930
Calf of Eday SPA	164	164

Table C4.5 Guillemot lower confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	39,440	0.00-16.33	0.00-5.00	0.00-21.33	0.000-0.041%	0.000-0.013%	0.000-0.054%
	Latest Count (2025).	33,225	0.00-16.33	0.00-5.00	0.00-21.33	0.000-0.049%	0.000-0.015%	0.000-0.064%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	31,893	0.00-14.25	0.00-4.37	0.00-18.62	0.000-0.045%	0.000-0.014%	0.000-0.058%
	Latest Count (2017-2023).	47,719	0.00-14.25	0.00-4.37	0.00-18.62	0.000-0.030%	0.000-0.009%	0.000-0.039%
Copinsay SPA	Burnell <i>et al.</i> (2023).	24,761	0.00-5.11	0.00-1.57	0.00-6.68	0.000-0.021%	0.000-0.006%	0.000-0.027%
	Latest Count (2015-2023).	10,991	0.00-5.11	0.00-1.57	0.00-6.68	0.000-0.046%	0.000-0.014%	0.000-0.061%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	24,515	0.00-3.59	0.00-1.10	0.00-4.69	0.000-0.015%	0.000-0.004%	0.000-0.019%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	4,681	0.00-0.63	0.00-0.19	0.00-0.83	0.000-0.014%	0.000-0.004%	0.000-0.018%

Table C4.6 Guillemot lower confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	39,440	58.78-97.97	6.00-18.01	64.78-115.98	0.149-0.248%	0.015-0.046%	0.164-0.294%
	Latest Count (2025).	33,225	58.78-97.97	6.00-18.01	64.78-115.98	0.177-0.295%	0.018-0.054%	0.195-0.349%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	31,893	51.30-85.50	5.24-15.72	56.54-101.22	0.161-0.268%	0.016-0.049%	0.177-0.317%
	Latest Count (2017-2023).	47,719	51.30-85.50	5.24-15.72	56.54-101.22	0.108-0.179%	0.011-0.033%	0.118-0.212%
Copinsay SPA	Burnell <i>et al.</i> (2023).	24,761	18.40-30.66	1.88-5.64	20.27-36.30	0.074-0.124%	0.008-0.023%	0.082-0.147%
	Latest Count (2015-2023).	10,991	18.40-30.66	1.88-5.64	20.27-36.30	0.167-0.279%	0.017-0.051%	0.184-0.330%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	24,515	12.93-21.54	1.32-3.96	14.25-25.50	0.053-0.088%	0.005-0.016%	0.058-0.104%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	4,681	2.28-3.80	0.23-0.70	2.51-4.50	0.049-0.081%	0.005-0.015%	0.054-0.096%

Table C4.7 Guillemot upper confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	39,440	0.00-21.15	0.00-21.15	0.00-42.29	0.000-0.054%	0.000-0.054%	0.000-0.107%
	Latest Count (2025).	33,225	0.00-21.15	0.00-21.15	0.00-42.29	0.000-0.064%	0.000-0.064%	0.000-0.127%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	31,893	0.00-18.45	0.00-18.45	0.00-36.91	0.000-0.058%	0.000-0.058%	0.000-0.116%
	Latest Count (2017-2023).	47,719	0.00-18.45	0.00-18.45	0.00-36.91	0.000-0.039%	0.000-0.039%	0.000-0.077%
Copinsay SPA	Burnell <i>et al.</i> (2023).	24,761	0.00-6.62	0.00-6.62	0.00-13.24	0.000-0.027%	0.000-0.027%	0.000-0.053%
	Latest Count (2015-2023).	10,991	0.00-6.62	0.00-6.62	0.00-13.24	0.000-0.060%	0.000-0.060%	0.000-0.120%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	24,515	0.00-4.65	0.00-4.65	0.00-9.30	0.000-0.019%	0.000-0.019%	0.000-0.038%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	4,681	0.00-0.82	0.00-0.82	0.00-1.64	0.000-0.018%	0.000-0.018%	0.000-0.035%

Table C4.8 Guillemot upper confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
Buchan Ness to Collieston Coast SPA	Burnell <i>et al.</i> (2023).	39,440	76.12-126.87	25.37-76.12	101.50-203.00	0.193-0.322%	0.064-0.193%	0.257-0.515%
	Latest Count (2025).	33,225	76.12-126.87	25.37-76.12	101.50-203.00	0.229-0.382%	0.076-0.229%	0.305-0.611%
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	31,893	66.44-110.73	22.15-66.44	88.58-177.16	0.208-0.347%	0.069-0.208%	0.278-0.555%
	Latest Count (2017-2023).	47,719	66.44-110.73	22.15-66.44	88.58-177.16	0.139-0.232%	0.046-0.139%	0.186-0.371%
Copinsay SPA	Burnell <i>et al.</i> (2023).	24,761	23.82-39.71	7.94-23.82	31.76-63.53	0.096-0.160%	0.032-0.096%	0.128-0.257%
	Latest Count (2015-2023).	10,991	23.82-39.71	7.94-23.82	31.76-63.53	0.217-0.361%	0.072-0.217%	0.289-0.578%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	24,515	16.74-27.90	5.58-16.74	22.32-44.64	0.068-0.114%	0.023-0.068%	0.091-0.182%
Calf of Eday SPA	Burnell <i>et al.</i> (2023).	4,681	2.95-4.92	0.98-2.95	3.94-7.87	0.063-0.105%	0.021-0.063%	0.084-0.168%

Table C4.9 Razorbill apportioned upper and lower confidence limits predicted abundance for the OAA plus a 2km buffer

Site	Apportioned abundance (breeding adults)	
	Breeding season	Non-breeding season
Troup, Pennan and Lion's Heads SPA	41.0-114.7	4.3-7.6
Fowlsheugh SPA	N/A	8.7-15.3
East Caithness Cliffs SPA	N/A	30.9-54.0
North Caithness Cliffs SPA	N/A	4.2-7.4
Forth Islands SPA	N/A	6.5-11.3
St Abb's Head to Fast Castle SPA	N/A	3.0-5.2
Fair Isle SPA	5.2-14.5	2.3-3.9
West Westray SPA	N/A	1.4-2.4
Foula SPA	N/A	0.9-1.6
Flamborough and Filey Coast SPA	N/A	24.7-43.2

Table C4.10 Razorbill lower confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	6,054	0.00-0.21	0.00-0.02	0.00-0.23	0.000-0.003%	<0.001%	0.000-0.004%
	Latest Count (2017-2023).	8,801	N/A	0.00-0.02	0.00-0.23	N/A	<0.001%	0.000-0.003%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	18,844	N/A	0.00-0.04	0.00-0.04	N/A	<0.001%	<0.001%
	Latest Count (2018-2023).	20,869	N/A	0.00-0.04	0.00-0.04	N/A	<0.001%	<0.001%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	40,373	N/A	0.00-0.15	0.00-0.15	N/A	<0.001%	<0.001%
	Latest Count (2024).	33,023	N/A	0.00-0.15	0.00-0.15	N/A	<0.001%	<0.001%
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	4,796	N/A	0.00-0.02	0.00-0.02	N/A	<0.001%	<0.001%
	Latest Count (2015-2024).	12,329	N/A	0.00-0.02	0.00-0.02	N/A	<0.001%	<0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Forth Islands SPA	Burnell <i>et al.</i> (2023).	7,631	N/A	0.00-0.03	0.00-0.03	N/A	<0.001%	<0.001%
	Latest Count (2024).	8,375	N/A	0.00-0.03	0.00-0.03	N/A	<0.001%	<0.001%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	3,928	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
	Latest Count (2024).	3,484	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	2,580	0.00-0.03	0.00-0.01	0.00-0.04	0.000-0.001%	<0.001%	0.000-0.001%
West Westray SPA	Burnell <i>et al.</i> (2023).	2,893	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
	Latest Count (2017-2023).	2,857	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
Foula SPA	Burnell <i>et al.</i> (2023).	635	N/A	<0.01	<0.01	N/A	0.000-0.001%	0.000-0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	37,476	N/A	0.00-0.12	0.00-0.12	N/A	<0.001%	<0.001%
	Latest Count (2022).	61,345	N/A	0.00-0.12	0.00-0.12	N/A	<0.001%	<0.001%

Table C4.11 Razorbill lower confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	6,054	0.74-1.23	0.03-0.08	0.76-1.31	0.012 - 0.020%	0.000-0.001%	0.013-0.022%
	Latest Count (2017-2023).	8,801	0.74-1.23	0.03-0.08	0.76-1.31	0.008 - 0.014%	0.000-0.001%	0.009-0.015%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	18,844	N/A	0.05-0.16	0.05-0.16	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2018-2023).	20,869	N/A	0.05-0.16	0.05-0.16	N/A	0.000-0.001%	0.000-0.001%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	40,373	N/A	0.19-0.56	0.19-0.56	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	33,023	N/A	0.19-0.56	0.19-0.56	N/A	0.001-0.002%	0.001-0.002%
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	4,796	N/A	0.03-0.08	0.03-0.08	N/A	0.001-0.002%	0.001-0.002%
	Latest Count (2015-2024).	12,329	N/A	0.03-0.08	0.03-0.08	N/A	0.000-0.001%	0.000-0.001%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	7,631	N/A	0.04-0.12	0.04-0.12	N/A	0.001-0.002%	0.001-0.002%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
	Latest Count (2024).	8,375	N/A	0.04-0.12	0.04-0.12	N/A	0.000-0.001%	0.000-0.001%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	3,928	N/A	0.02-0.05	0.02-0.05	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	3,484	N/A	0.02-0.05	0.02-0.05	N/A	0.001-0.002%	0.001-0.002%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	2,580	0.09-0.16	0.01-0.04	0.11-0.20	0.004-0.006%	0.001-0.002%	0.004-0.008%
West Westray SPA	Burnell <i>et al.</i> (2023).	2,893	N/A	0.01-0.02	0.01-0.02	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2017-2023).	2,857	N/A	0.01-0.02	0.01-0.02	0.004-0.006%	0.000-0.001%	0.000-0.001%
Foula SPA	Burnell <i>et al.</i> (2023).	635	N/A	0.01-0.02	0.01-0.02	N/A	0.001-0.003%	0.001-0.003%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	37,476	N/A	0.15-0.44	0.15-0.44	0.004-0.006%	0.000-0.001%	0.000-0.001%
	Latest Count (2022).	61,345	N/A	0.15-0.44	0.15-0.44	N/A	0.000-0.001%	0.000-0.001%

Table C4.12 Razorbill upper confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	6,054	0.00-0.57	0.00-0.04	0.00-0.61	0.000-0.009%	0.000-0.001%	0.000-0.010%
	Latest Count (2017-2023).	8,801	N/A	0.00-0.04	0.00-0.61	N/A	<0.001%	0.000-0.007%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	18,844	N/A	0.00-0.08	0.00-0.08	N/A	<0.001%	<0.001%
	Latest Count (2018-2023).	20,869	N/A	0.00-0.08	0.00-0.08	N/A	<0.001%	<0.001%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	40,373	N/A	0.00-0.27	0.00-0.27	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	33,023	N/A	0.00-0.27	0.00-0.27	N/A	0.000-0.001%	0.000-0.001%
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	4,796	N/A	0.00-0.04	0.00-0.04	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2015-2024).	12,329	N/A	0.00-0.04	0.00-0.04	N/A	<0.001%	<0.001%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	7,631	N/A	0.00-0.06	0.00-0.06	N/A	0.000-0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
	Latest Count (2024).	8,375	N/A	0.00-0.06	0.00-0.06	N/A	0.000-0.001%	0.000-0.001%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	3,928	N/A	0.00-0.03	0.00-0.03	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	3,484	N/A	0.00-0.03	0.00-0.03	N/A	0.000-0.001%	0.000-0.001%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	2,580	0.00-0.07	0.00-0.02	0.00-0.09	0.000-0.003%	0.000-0.001%	0.000-0.004%
West Westray SPA	Burnell <i>et al.</i> (2023).	2,893	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
	Latest Count (2017-2023).	2,857	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
Foula SPA	Burnell <i>et al.</i> (2023).	635	N/A	0.00-0.01	0.00-0.01	N/A	0.000-0.001%	0.000-0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	37,476	N/A	0.00-0.22	0.00-0.22	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2022).	61,345	N/A	0.00-0.22	0.00-0.22	N/A	<0.001%	<0.001%

Table C4.13 Razorbill upper confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3 - 5% Mort	Non-breeding; 60% Disp & 1 - 3% Mort	Annual; 60% Disp & 1 - 5% Mort	Breeding; 60% Disp & 3 - 5% Mort	Non-breeding; 60% Disp & 1 - 3% Mort	Annual; 60% Disp & 1 - 5% Mort
Troup, Pennan and Lion's Heads SPA	Burnell <i>et al.</i> (2023).	6,054	2.06-3.44	0.05-0.14	2.11-3.58	0.034-0.057%	0.001-0.002%	0.035-0.059%
	Latest Count (2017-2023).	8,801	2.06-3.44	0.05-0.14	2.11-3.58	0.023-0.039%	0.001-0.002%	0.024-0.041%
Fowlsheugh SPA	Burnell <i>et al.</i> (2023).	18,844	N/A	0.09-0.27	0.09-0.27	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2018-2023).	20,869	N/A	0.09-0.27	0.09-0.27	N/A	0.000-0.001%	0.000-0.001%
East Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	40,373	N/A	0.32-0.97	0.32-0.97	N/A	0.001-0.002%	0.001-0.002%
	Latest Count (2024).	33,023	N/A	0.32-0.97	0.32-0.97	N/A	0.001-0.003%	0.001-0.003%
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	4,796	N/A	0.04-0.13	0.04-0.13	N/A	0.001-0.003%	0.001-0.003%
	Latest Count (2015-2024).	12,329	N/A	0.04-0.13	0.04-0.13	N/A	0.000-0.001%	0.000-0.001%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	7,631	N/A	0.07-0.20	0.07-0.20	N/A	0.001-0.003%	0.001-0.003%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3 - 5% Mort	Non-breeding; 60% Disp & 1 - 3% Mort	Annual; 60% Disp & 1 - 5% Mort	Breeding; 60% Disp & 3 - 5% Mort	Non-breeding; 60% Disp & 1 - 3% Mort	Annual; 60% Disp & 1 - 5% Mort
	Latest Count (2024).	8,375	N/A	0.07-0.20	0.07-0.20	N/A	0.001-0.002%	0.001-0.002%
St Abb's Head to Fast Castle SPA	Burnell <i>et al.</i> (2023).	3,928	N/A	0.03-0.09	0.03-0.09	N/A	0.001-0.002%	0.001-0.002%
	Latest Count (2024).	3,484	N/A	0.03-0.09	0.03-0.09	N/A	0.001-0.003%	0.001-0.003%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	2,580	0.26-0.44	0.02-0.07	0.29-0.51	0.010-0.017%	0.001-0.003%	0.011-0.020%
West Westray SPA	Burnell <i>et al.</i> (2023).	2,893	N/A	0.01-0.04	0.01-0.04	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2017-2023).	2,857	N/A	0.01-0.04	0.01-0.04	0.010-0.017%	0.000-0.001%	0.000-0.001%
Foula SPA	Burnell <i>et al.</i> (2023).	635	N/A	0.01-0.03	0.01-0.03	N/A	0.001-0.004%	0.001-0.004%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	37,476	N/A	0.26-0.78	0.26-0.78	0.010-0.017%	0.001-0.002%	0.001-0.002%
	Latest Count (2022).	61,345	N/A	0.26-0.78	0.26-0.78	N/A	0.000-0.001%	0.000-0.001%

Table C4.14 Puffin apportioned upper and lower confidence limits predicted abundance for the OAA plus a 2km buffer

Site	Apportioned abundance (breeding adults)	
	Breeding season	Non-breeding season
North Caithness Cliffs SPA	12.7-25.3	0.0-0.1
Forth Islands SPA	153.0-305.7	3.0-26.6
Hoy SPA	1.6-3.2	0.0-0.4
Fair Isle SPA	24.9-49.7	0.2-1.4
Farne Islands SPA	N/A	1.9-17.1
Sule Skerry and Sule Stack SPA	88.7-177.1	0.0-0.0
Noss SPA	2.3-4.5	0.0-0.1
Foula SPA	7.3-14.6	0.3-2.9
Hermaness, Saxa Vord and Valla Field SPA	N/A	0.3-3.0

Table C4.15 Puffin lower confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	6,078	0.00-0.06	<0.01	0.00-0.06	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2016-2024).	6,766	0.00-0.06	<0.01	0.00-0.06	0.000-0.001%	<0.001%	0.000-0.001%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	85,846	0.00-0.77	0.00-0.01	0.00-0.78	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2024).	117,960	0.00-0.77	0.00-0.01	0.00-0.78	0.000-0.001%	<0.001%	0.000-0.001%
Hoy SPA	Burnell <i>et al.</i> (2023).	860	0.00-0.01	<0.01	0.00-0.01	0.000-0.001%	<0.001%	0.000-0.001%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	13,332	0.00-0.12	<0.01	0.00-0.13	0.000-0.001%	<0.001%	0.000-0.001%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	87,504	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
	Latest Count (2024).	100,206	N/A	0.00-0.01	0.00-0.01	N/A	<0.001%	<0.001%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	95,484	0.00-0.44	<0.01	0.00-0.44	<0.001%	<0.001%	<0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Noss SPA	Burnell <i>et al.</i> (2023).	2,348	0.00-0.01	<0.01	0.00-0.01	<0.001%	<0.001%	<0.001%
	Latest Count (2023).	1,090	0.00-0.01	<0.01	0.00-0.01	0.000-0.001%	<0.001%	0.000-0.001%
Foula SPA	Burnell <i>et al.</i> (2023).	8,468	0.00-0.04	<0.01	0.00-0.04	<0.001%	<0.001%	<0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	28,750	N/A	<0.01	<0.01	N/A	<0.001%	<0.001%

Table C4.16 Puffin lower confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	6,078	0.23-0.38	<0.01	0.23-0.38	0.004-0.006%	<0.001%	0.004-0.006%
	Latest Count (2016-2024).	6,766	0.23-0.38	<0.01	0.23-0.38	0.003-0.006%	<0.001%	0.003-0.006%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	85,846	2.75-4.59	0.02-0.05	2.77-4.64	0.003-0.005%	<0.001%	0.003-0.005%
	Latest Count (2024).	117,960	2.75-4.59	0.02-0.05	2.77-4.64	0.002-0.004%	<0.001%	0.002-0.004%
Hoy SPA	Burnell <i>et al.</i> (2023).	860	0.03-0.03	<0.01	0.03-0.03	0.003-0.003%	<0.001%	0.003-0.003%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	13,332	0.45-0.75	<0.01	0.45-0.75	0.003-0.006%	<0.001%	0.003-0.006%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	87,504	N/A	0.01-0.03	0.01-0.03	N/A	<0.001%	<0.001%
	Latest Count (2024).	100,206	N/A	0.01-0.03	0.01-0.03	N/A	<0.001%	<0.001%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	95,484	1.60-2.66	<0.01	1.60-2.66	0.002-0.003%	<0.001%	0.002-0.003%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
Noss SPA	Burnell <i>et al.</i> (2023).	2,348	0.04-0.07	<0.01	0.04-0.07	0.002-0.003%	<0.001%	0.002-0.003%
	Latest Count (2023).	1,090	0.04-0.07	<0.01	0.04-0.07	0.004-0.006%	<0.001%	0.004-0.006%
Foula SPA	Burnell <i>et al.</i> (2023).	8,468	0.13-0.22	0.00-0.01	0.13-0.23	0.002-0.003%	<0.001%	0.002-0.003%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	28,750	N/A	0.00-0.01	0.00 - 0.01	N/A	<0.001%	<0.001%

Table C4.17 Puffin Upper confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	6,078	0.00-0.13	<0.01	0.00-0.13	0.000-0.002%	<0.001%	0.000-0.002%
	Latest Count (2016-2024)	6,766	0.00-0.13	<0.01	0.00-0.13	0.000-0.002%	<0.001%	0.000-0.002%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	85,846	0.00-1.53	0.00-0.13	0.00-1.66	0.000-0.002%	<0.001%	0.000-0.002%
	Latest Count (2024).	117,960	0.00-1.53	0.00-0.13	0.00-1.66	0.000-0.001%	<0.001%	0.000-0.001%
Hoy SPA	Burnell <i>et al.</i> (2023).	860	0.00-0.02	<0.01	0.00-0.02	0.000-0.002%	<0.001%	0.000-0.002%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	13,332	0.00-0.25	0.00-0.01	0.00-0.26	0.000-0.002%	<0.001%	0.000-0.002%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	87,504	N/A	0.00-0.09	0.00-0.09	N/A	<0.001%	<0.001%
	Latest Count (2024).	100,206	N/A	0.00-0.09	0.00-0.09	N/A	<0.001%	<0.001%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	95,484	0.00 - 0.89	<0.01	0.00-0.89	0.000-0.001%	<0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort	Breeding; 50% Disp ; 0-1% Mort	Non-breeding; 50% Disp ; 0-1% Mort	Annual; 50% Disp ; 0-1% Mort
Noss SPA	Burnell <i>et al.</i> (2023).	2,348	0.00-0.02	<0.01	0.00-0.02	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2023).	1,090	0.00-0.02	<0.01	0.00-0.02	0.000-0.002%	<0.001%	0.000-0.002%
Foula SPA	Burnell <i>et al.</i> (2023).	8,468	0.00-0.07	0.00-0.01	0.00-0.09	0.000-0.001%	<0.001%	0.000-0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	28,750	N/A	0.00-0.02	0.00-0.02	N/A	<0.001%	<0.001%

Table C4.18 Puffin upper confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
North Caithness Cliffs SPA	Burnell <i>et al.</i> (2023).	6,078	0.46-0.76	<0.01	0.46-0.76	0.007-0.012%	<0.001%	0.008-0.013%
	Latest Count (2016-2024).	6,766	0.46-0.76	<0.01	0.46-0.76	0.007-0.011%	<0.001%	0.007-0.011%
Forth Islands SPA	Burnell <i>et al.</i> (2023).	85,846	5.50-9.17	0.16-0.48	5.66-9.65	0.006-0.011%	0.000 - 0.001%	0.007-0.011%
	Latest Count (2024).	117,960	5.50-9.17	0.16-0.48	5.66-9.65	0.005-0.008%	<0.001%	0.005-0.008%
Hoy SPA	Burnell <i>et al.</i> (2023).	860	0.06-0.06	0.00-0.01	0.06-0.06	0.007-0.007%	0.000 - 0.001%	0.007-0.008%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	13,332	0.89-1.49	0.01-0.02	0.90-1.52	0.007-0.011%	<0.001%	0.007-0.011%
Farne Islands SPA	Burnell <i>et al.</i> (2023).	87,504	N/A	0.10-0.31	0.10-0.31	N/A	<0.001%	<0.001%
	Latest Count (2024).	100,206	N/A	0.10-0.31	0.10-0.31	N/A	<0.001%	<0.001%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	95,484	3.19-5.31	<0.01	3.19-5.31	0.003-0.006%	<0.001%	0.003-0.006%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort	Breeding; 60% Disp & 3-5% Mort	Non-breeding; 60% Disp & 1-3% Mort	Annual; 60% Disp & 1-5% Mort
Noss SPA	Burnell <i>et al.</i> (2023).	2,348	0.08-0.14	<0.01	0.08-0.14	0.003-0.006%	<0.001%	0.003-0.006%
	Latest Count (2023).	1,090	0.08-0.14	<0.01	0.08-0.14	0.007-0.012%	<0.001%	0.007-0.013%
Foula SPA	Burnell <i>et al.</i> (2023).	8,468	0.26-0.44	0.02 - 0.05	0.28-0.49	0.003-0.005%	0.000-0.001%	0.003-0.006%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	28,750	N/A	0.02 - 0.05	0.02 - 0.05	N/A	<0.001%	<0.001%

Table C4.19 Gannet apportioned upper and lower confidence limits predicted abundance for the OAA plus a 2km buffer

Site	Apportioned abundance (breeding adults)	
	Breeding season	Non-breeding season
Forth Islands SPA	154.3-326.9	51.8-98.5
Fair Isle SPA	14.2-30.2	2.9-5.6
Sule Skerry and Sule Stack SPA	11.0-23.3	0.4-0.8
Noss SPA	21.7-45.9	7.3-13.9
North Rona and Sula Sgeir SPA	8.1-17.1	0.9-1.6
Hermaness, Saxa Vord and Valla Field SPA	23.7-50.3	18.2-34.6
Flamborough and Filey Coast SPA	N/A	10.3-19.6

Table C4.20 Gannet lower confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60-80% Disp & 1% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort	Breeding; 70% Disp & 1-3% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort
Forth Islands SPA	Burnell <i>et al.</i> (2023).	150,518	0.93-1.23	0.31-0.41	1.24-1.65	0.001-0.001%	<0.001%	0.001-0.001%
	Latest Count (2025).	92,090	0.93-0.93	0.31-0.41	1.24-1.34	0.001-0.001%	<0.001%	0.001-0.001%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	9,942	0.09-0.11	0.02-0.02	0.10-0.14	0.001-0.001%	<0.001%	0.001-0.001%
	Latest Count (2017-2023).	11,184	0.09-0.09	0.02-0.02	0.10-0.11	0.001-0.001%	<0.001%	0.001-0.001%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	18,130	0.07-0.09	<0.01	0.07-0.09	<0.001%	<0.001%	0.000-0.001%
	Latest Count (2023).	15,648	0.07-0.07	<0.01	0.07-0.07	<0.001%	<0.001%	<0.001%
Noss SPA	Burnell <i>et al.</i> (2023).	27,530	0.13-0.17	0.04-0.06	0.17-0.23	0.000-0.001%	<0.001%	0.001-0.001%
	Latest Count (2024).	24,670	0.13-0.13	0.04-0.06	0.17-0.19	0.001-0.001%	<0.001%	0.001-0.001%
	Burnell <i>et al.</i> (2023).	24,542	0.05-0.06	0.01-0.01	0.05-0.07	<0.001%	<0.001%	<0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60-80% Disp & 1% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort	Breeding; 70% Disp & 1-3% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort
North Rona and Sula Sgeir SPA	Latest Count (2023-2024).	18,990	0.05-0.05	0.01-0.01	0.05-0.06	<0.001%	<0.001%	<0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	59,124	0.14-0.19	0.11-0.15	0.25-0.34	<0.001%	<0.001%	0.000-0.001%
	Latest Count (2024).	39,606	0.14-0.14	0.11-0.15	0.25-0.29	<0.001%	<0.001%	0.001-0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	26,784	N/A	0.06-0.08	0.06-0.08	N/A	<0.001%	<0.001%
	Latest Count (2024).	31,588	N/A	0.06-0.08	0.06-0.08	N/A	<0.001%	<0.001%

Table C4.21 Gannet lower confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 70% Disp & 1-3% Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort	Breeding; 70% Disp & 1-3 % Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort
Forth Islands SPA	Burnell <i>et al.</i> (2023).	150,518	1.08-3.24	0.36-1.09	1.44-4.33	0.001-0.002%	0.000-0.001%	0.001-0.003%
	Latest Count (2025).	92,090	1.08-1.08	0.36-1.09	1.44-2.17	0.001-0.001%	0.000-0.001%	0.002-0.002%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	9,942	0.10-0.30	0.02-0.06	0.12-0.36	0.001-0.003%	0.000-0.001%	0.001-0.004%
	Latest Count (2017-2023).	11,184	0.10-0.10	0.02-0.06	0.12-0.16	0.001-0.001%	0.000-0.001%	0.001-0.001%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	18,130	0.08-0.23	0.00-0.01	0.08-0.24	0.000-0.001%	<0.001%	0.000-0.001%
	Latest Count (2023).	15,648	0.08-0.08	0.00-0.01	0.08-0.09	<0.001%	<0.001%	0.001-0.001%
Noss SPA	Burnell <i>et al.</i> (2023).	27,530	0.15-0.46	0.05-0.15	0.20-0.61	0.001-0.002%	0.000-0.001%	0.001-0.002%
	Latest Count (2024).	24,670	0.15-0.15	0.05-0.15	0.20-0.30	0.001-0.001%	0.000-0.001%	0.001-0.001%
	Burnell <i>et al.</i> (2023).	24,542	0.06-0.17	0.01-0.02	0.06-0.19	0.000-0.001%	<0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 70% Disp & 1-3% Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort	Breeding; 70% Disp & 1-3 % Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort
North Rona and Sula Sgeir SPA	Latest Count (2023-2024).	18,990	0.06-0.06	0.01-0.02	0.06-0.07	<0.001%	<0.001%	<0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	59,124	0.17-0.50	0.13-0.38	0.29-0.88	0.000-0.001%	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	39,606	0.17-0.17	0.13-0.38	0.29-0.55	<0.001%	0.000-0.001%	0.001-0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	26,784	N/A	0.07-0.22	0.07-0.22	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	31,588	N/A	0.07-0.22	0.07-0.22	N/A	0.000-0.001%	0.000-0.001%

Table C4.22 Gannet upper confidence limit distributional response effects apportioned to designated sites (Developer Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60-80% Disp & 1% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort	Breeding; 70% Disp & 1-3% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort
Forth Islands SPA	Burnell <i>et al.</i> (2023).	150,518	1.96-2.62	0.59-0.79	2.55-3.40	0.001-0.002%	0.000-0.001%	0.002-0.002%
	Latest Count (2025)	92,090	1.96-1.96	0.59-0.79	2.55-2.75	0.002-0.002%	0.001-0.001%	0.003-0.003%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	9,942	0.18-0.24	0.03-0.04	0.21-0.29	0.002-0.002%	<0.001%	0.002-0.003%
	Latest Count (2017-2023).	11,184	0.18-0.18	0.03-0.04	0.21-0.23	0.002-0.002%	<0.001%	0.002-0.002%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	18,130	0.14-0.19	0.00-0.01	0.14-0.19	0.001-0.001%	<0.001%	0.001-0.001%
	Latest Count (2023).	15,648	0.14-0.14	0.00-0.01	0.14-0.15	0.001-0.001%	<0.001%	0.001-0.001%
Noss SPA	Burnell <i>et al.</i> (2023).	27,530	0.28-0.37	0.08-0.11	0.36-0.48	0.001-0.001%	<0.001%	0.001-0.002%
	Latest Count (2024).	24,670	0.28-0.28	0.08-0.11	0.36-0.39	0.001-0.001%	<0.001%	0.001-0.002%
	Burnell <i>et al.</i> (2023).	24,542	0.10-0.14	0.01-0.01	0.11-0.15	0.000-0.001%	<0.001%	0.000-0.001%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 60-80% Disp & 1% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort	Breeding; 70% Disp & 1-3% Mort	Non-breeding; 60-80% Disp & 1% Mort	Annual; 60-80% Disp & 1% Mort
North Rona and Sula Sgeir SPA	Latest Count (2023-2024).	18,990	0.10-0.10	0.01-0.01	0.11-0.12	0.001-0.001%	<0.001%	0.001-0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	59,124	0.30-0.40	0.21-0.28	0.51-0.68	0.001-0.001%	<0.001%	0.001-0.001%
	Latest Count (2024).	39,606	0.30-0.30	0.21-0.28	0.51-0.58	0.001-0.001%	0.001-0.001%	0.001-0.001%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	26,784	N/A	0.12-0.16	0.12-0.16	N/A	0.000-0.001%	0.000-0.001%
	Latest Count (2024).	31,588	N/A	0.12-0.16	0.12-0.16	N/A	<0.001%	<0.001%

Table C4.23 Gannet upper confidence limit distributional response effects apportioned to designated sites (Guidance Approach)

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 70% Disp & 1-3% Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort	Breeding; 70% Disp & 1-3 % Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort
Forth Islands SPA	Burnell <i>et al.</i> (2023).	150,518	2.29-6.87	0.69-2.07	2.98-8.93	0.002-0.005%	0.000-0.001%	0.002-0.006%
	Latest Count (2025).	92,090	2.29-2.29	0.69-2.07	2.98-4.36	0.002-0.002%	0.001-0.002%	0.003-0.005%
Fair Isle SPA	Burnell <i>et al.</i> (2023).	9,942	0.21-0.63	0.04-0.12	0.25-0.75	0.002-0.006%	0.000-0.001%	0.003-0.008%
	Latest Count (2017-2023).	11,184	0.21-0.21	0.04-0.12	0.25-0.33	0.002-0.002%	0.000-0.001%	0.002-0.003%
Sule Skerry and Sule Stack SPA	Burnell <i>et al.</i> (2023).	18,130	0.16-0.49	0.01-0.02	0.17-0.51	0.001-0.003%	<0.001%	0.001-0.003%
	Latest Count (2023).	15,648	0.16-0.16	0.01-0.02	0.17-0.18	0.001-0.001%	<0.001%	0.001-0.001%
Noss SPA	Burnell <i>et al.</i> (2023).	27,530	0.32-0.96	0.10-0.29	0.42-1.26	0.001-0.004%	0.000-0.001%	0.002-0.005%
	Latest Count (2024).	24,670	0.32-0.32	0.10-0.29	0.42-0.61	0.001-0.001%	0.000-0.001%	0.002-0.002%
	Burnell <i>et al.</i> (2023).	24,542	0.12-0.36	0.01-0.03	0.13-0.39	0.000-0.001%	<0.001%	0.001-0.002%

Site	Population count	Population size (breeding adult)	Predicted distributional response impacts (breeding adults)			Percentage point change in survival rate (%)		
			Breeding; 70% Disp & 1-3% Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort	Breeding; 70% Disp & 1-3 % Mort	Non-breeding; 70% Disp & 1-3% Mort	Annual; 70% Disp & 1-3% Mort
North Rona and Sula Sgeir SPA	Latest Count (2023-2024).	18,990	0.12-0.12	0.01-0.03	0.13-0.15	0.001-0.001%	<0.001%	0.001-0.001%
Hermaness, Saxa Vord and Valla Field SPA	Burnell <i>et al.</i> (2023).	59,124	0.35-1.06	0.24-0.73	0.59-1.78	0.001-0.002%	0.000-0.001%	0.001-0.003%
	Latest Count (2024).	39,606	0.35-0.35	0.24-0.73	0.59-1.08	0.001-0.001%	0.001-0.002%	0.002-0.003%
Flamborough and Filey Coast SPA	Burnell <i>et al.</i> (2023).	26,784	N/A	0.14-0.41	0.14-0.41	N/A	0.001-0.002%	0.001-0.002%
	Latest Count (2024).	31,588	N/A	0.14-0.41	0.14-0.41	N/A	0.000-0.001%	0.000-0.001%

MarramWind

