

Energy Isles Wind Farm
Shadow Habitats Regulations
Appraisal (sHRA) 2
2021 Update

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Issuing office

Merlin House | No 1 Langstone Business Park | Newport | NP18 2HJ

Client	Statkraft
Project	Energy Isles Wind Farm, Shadow Habitats Regulations Appraisal (sHRA) 2 2021
Version	FINAL
Project number	P19-654 sHRA 2021

	Name	Position	Date
Originated	Gareth Lang	Principal Ecologist	08 September 2021
Reviewed	Roger Buisson	Associate Director	10 September 2021
Approved for issue to client	Roger Buisson	Associate Director	10 September 2021
Issued to client	Gareth Lang	Principal Ecologist	13 September 2021

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1 Introduction

- 1.1 This report provides an update to the 2019 Shadow Habitat Regulations Appraisal (sHRA) (BSG Ecology, 2019a) to account for the revised 2021 Layout, and to address stakeholder consultation responses to the 2019 Environmental Impact Assessment (EIA) Report and 2020 Supplementary Environmental Information (SEI) submissions¹.
- 1.2 This updated report (sHRA 2²) is based on the 2021 Layout and considers consultation responses in making an assessment. This document should be read in conjunction with the 2019 sHRA Report³. Together, the reports accord with the requirements of Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) as, in the absence of mitigation measures, the Proposed Development is likely to have a significant effect on a European site (as set out in the following sections). This document provides information that will help the Scottish Ministers to discharge their duty as the 'competent authority' as defined under Regulation 63.
- 1.3 The revisions to the layout of the Proposed Development (in relation to the 2019 Layout on which the 2019 sHRA was based) are:
- The removal of turbines T1 to T10 inclusive and T29 with all remaining turbines set at 180 m tip height.
 - The removal of associated tracks and hardstandings.
 - Relocation of 4 turbine hardstandings at T16, T19, T25, and T27.
 - Reduction and refinement of all turbine hardstandings.
 - Removal of crane area at T16 hardstanding.
 - Removal of 4 borrow pits and associated tracks.
 - Refinement in size of 4 borrow pit search areas.
 - Revised location of construction compound 2.
 - Realignment of track:
 - from existing track north to T19;
 - from T17 to T21;
 - from T26, past T27 to T28;
 - at T15;
 - leading up to T22;
 - spur to T25.
 - Additional track from T23 to T24 past borrow pit search area C.
 - Revision of junction at T13.
 - Widening of junction at T19.
 - Addition of 1 turning head north of T28.

¹ These include the 2020 SEI and SEI 2 submitted to address consultee comments on the 2019 EIA and to present impact assessments based on iterations of the Proposed Development layout.

² This document presents the results of a comprehensive Habitats Regulations Assessment; however, with regard to the legal process set out within the Conservation of Habitats and Species Regulations 2017, it is the competent authority who has the responsibility of undertaking a Habitats Regulations Assessment (HRA). This report is therefore described as a shadow HRA.

³ A revision of the 2019 sHRA Report was not undertaken to support the 2020 submission.

- Width of main spur road increased to 6 m.
- Widening of junction at Construction Compound 2/Substation Access.
- Widening of secondary spurs to 5 m wide.

Definition of Terms

1.4 For clarity of understanding, the following terminology is used in this report:

- The **Proposed Development** refers to the proposed 2021 Layout of the Energy Isles Wind Farm, comprising 18 turbines, cabling, access tracks, borrow pits (as required), temporary crane pads and compounds. The layout of the Proposed Development is shown on Figure 1.
- The **Site** is defined as the area in which all proposed turbines and associated infrastructure are situated. The area occupied by the Site is 1,679 ha. The Site boundary is shown in Figure 1.
- The **Survey Area** is defined as all land within 500 m of the original site boundary⁴. This perimeter is based on industry guidance (SNH, 2017) that recommends that the survey area should be extended to survey for birds at least 500 m beyond a wind farm development.

The Survey Area extends to greater than 500 m north and south of the Proposed Development (due to subsequent contraction of the Site). However, a small section of the Site extends outside of the Survey Area at Dalsetter to allow for Site access, a construction compound and borrow pit.

⁴ This included an area south of the current Site boundary which was removed from the proposal following early consultation.

2 Habitats Regulations Appraisal

UK Legislation and policy

- 2.1 This section describes the legislation and policy as it applies now that the UK has left the European Union.
- 2.2 Guidance from the Scottish Government has been provided on the application of the relevant legislation in the post-Brexit period in their policy document published on 23 Dec 2020 available at <https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/>.
- 2.3 The Conservation of Habitats and Species Regulations 2017 (as amended⁵) provide for the protection of habitats, plants and animals through the creation of, and specific decision-making procedures applied to, the 'national site network' (Regulation 3 'Interpretation'). This 'national site network' consists of Special Areas of Conservation (SACs) and of Special Protection Areas (SPAs) that were designated both in that period when the UK was a member of the EU and designated since the UK has left the EU.
- 2.4 In this report the term 'European Sites' is used to refer collectively to SPAs and SACs. Although they are referred to as the 'national site network' in those recently amended parts of the Habitats Regulations, the decision-making procedures concerning HRA, as set out in Regulation 63, continue to refer to them as 'European Sites' (as does much of the available guidance) and for that reason in this report they are referred to collectively as European Sites.
- 2.5 Consideration also must be given in a HRA to land outside of the boundary of the European Site or Ramsar Site that serves the function of supporting the population of the qualifying interest feature(s) (MHCLG guidance on the use of Habitats Regulations Assessment <https://www.gov.uk/guidance/appropriate-assessment>). This supporting function can be through, for instance, providing food resources that might be accessed at certain times of the day, season, or year. Since such land serves a function that is linked to a particular European Site or Ramsar Site, it is referred to as 'functionally linked land'. Such functionally linked land has been defined as follows (Chapman & Tyldesley, 2016):

'...the term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status.'

International legal obligations

- 2.6 The UK is a contracting party to the Convention on wetlands of international importance especially as waterfowl habitat, Ramsar, Iran, 1971 (the 'Ramsar Convention') which seeks to protect wetlands of international importance, especially those wetlands utilised as waterfowl habitat.
- 2.7 It is UK Government policy (in Scotland this is identified in paragraph 211 of the Scottish Planning Policy, 2014) that all competent authorities should treat Ramsar Sites in their

⁵ The legal provisions that amend the 2017 Regulations are:

- The Conservation of Habitats and Species and Planning (Scotland) Regulations 2018
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

decision-making processes as if they are SACs or SPAs and hence brought within the requirements for Habitats Regulations Assessment of the Conservation of Habitats and Species Regulations 2017 (as amended).

Habitats Regulations Assessment process

- 2.8 The requirements of the Conservation of Habitats and Species Regulations 2017 (as amended) with regard to the implications of plans or projects are set out within Regulation 63. The step-based approach implicit within this regulation is referred to as a 'Habitats Regulations Appraisal' (HRA), which is the term that has been used throughout this report.
- 2.9 It is a requirement of any public body, referred to as a competent authority within the Conservation of Habitats and Species Regulations 2017 (as amended), to carry out a Habitats Regulations Assessment when they are proposing to carry out a project, implement a plan or authorise another party to carry out a plan or project. Competent authorities are required to record the process undertaken, ensuring that there will be no adverse effects on the integrity of any European Site or Ramsar Site as a result of a plan or project whether alone or in combination with other plans or projects.

Assessment Stages

- 2.10 The staged approach to meeting the requirements of the Habitats Directive have been set out in paragraphs 2.6 (*et seq*) of the 2019 sHRA Report. It follows the European Commission guidance developed to address the requirements of Articles 6(3) and 6(4) of the Habitats Directive⁶.

Consultation Responses

- 2.11 The 2019 EIA Report received objections on ornithological grounds from:
- NatureScot⁷ (dated 15 July 2019);
 - Royal Society for the Protection of Birds (RSPB) Scotland (dated 31 July 2019);
 - Shetland Bird Club (SBC) (dated 22 July 2019); and,
 - Shetland Amenity Trust (SAT) (dated 18 July 2019).
- 2.12 A summary of these comments, and applicant responses are provided in paragraphs 6.5.1 (*et seq.*) of the 2020 SEI.
- 2.13 The 2020 SEI received further objections on ornithological grounds from:
- NatureScot (dated 09 October 2020);
 - RSPB Scotland (dated 09 October 2020); and,
 - SBC (dated 08 October 2020).
- 2.14 A summary of these comments, and applicant responses are provided in paragraphs 6.5.1 (*et seq.*) of SEI 2. No consultation responses were received that specifically related to the 2019 sHRA.
- 2.15 The following consultation responses are of relevance to this assessment.

⁶ European Commission (2001). Assessment of plans and projects significantly effecting Natura 2000 site. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Published November 2001.

⁷ formerly Scottish Natural Heritage (SNH).

RSPB Scotland

- 2.16 RSPB Scotland's response to the 2019 EIA Report included concerns over population estimates for a number of species, and displacement distances referenced for waders and skuas within the assessment.
- 2.17 *"It is important to note that the [Shetland population] figures from Wilson et al are derived from Massimino et al. (2011) which have the following caveat 'Estimates for these two regions are likely to be significant over-estimates of true abundance, due to the limited data from these regions which mean that the spatial smooth fitted to the GAM is fitted with considerable uncertainty (see text for more details)'. Shetland is one of the two regions to which this caveat refers. In view of this, RSPB Scotland considers that the 2015 golden plover population number is likely to be an over estimate and that the assessment should be redone based on the [Pennington et al] 2004 estimate."*
- 2.18 *"The EIA Report assumes that displacement of some nesting waders (golden plover, dunlin, lapwing, oystercatcher and redshank) around turbines will occur only within a distance of 200m from turbines in the proposed scheme and there is reference to a number of published studies including Pearce-Higgins et al. (2009). However, it is considered that this may be an underestimate of the displacement when compared to more recent papers e.g. Sansom et al. (2016) found that breeding golden plover abundance may be reduced by 79% up to 400 m away from operational turbines."*
- 2.19 This assessment accounts for these observations and considers impacts in relation to population estimates presented in Pennington et al (2004), and disturbance distances of waders presented in Sansom et al. (2016).

NatureScot

- 2.20 NatureScot's response to both the 2019 EIA Report and 2020 SEI included concerns relating to the application of the collision risk model upon which the assessment of collision mortality was based.
- "The SEI states in Chapter 6 (Ornithology) and the text in Appendix 6.1 that watches were carried out for 36 hours at each of four VPs in 2016 and 2018. This is in accordance with NatureScot guidance and constitutes a total of 36 hours observation over the whole site, each VP view-shed being essentially independent of the others. However, in the collision risk calculations the observation times at the four VPs have been added to give a total of 144 hours per season. This is incorrect and causes a significant underestimate of collision risk for all species.....Consequently our advice remains that it is not possible to conclude, on the basis of this assessment, that there will not be an adverse effect on the integrity of Bluemull and Colgrave Sounds pSPA. Nor can we assess impacts on Natural Heritage Zone (NHZ) populations of species of high conservation importance.."*
- 2.21 The collision risk analysis has been updated (and subject to peer review by MacArthur Green) in Appendix 6.1 of SEI 2. This assessment is based on the results of the revised collision risk model.

3 Scope of the Assessment

- 3.1 The scope of this assessment is to update the 2019 sHRA Report to reflect the consultation responses (as summarised in the previous section) on both the 2019 EIA Report and 2020 SEI, and the reduced footprint of the Proposed Development. The status of all European sites within the Ecological Zone of Influence (EZoL) of the Site have been reviewed to ensure that the information on which this sHRA 2 is based remains relevant.
- 3.2 The spatial scope of the sHRA, including the definition of the EZoL is set out in paras. 3.1 *et seq* of the 2019 sHRA Report and has been retained for this updated sHRA 2.
- 3.3 There are 5 European sites located within 10 km of the Proposed Development: Bluemull and Colgrave Sounds Special Protection Area (SPA)⁸, Otterswick and Graveland Special Protection Area (SPA), Fetlar SPA, Hermaness, Saxa Vord and Valla Field SPA and East Mires and Lumbister Special Area of Conservation (SAC). Summary details of these sites are presented below in Table 1 and on **Figure 2**. Full descriptions of these sites, including further information on qualifying features, the conservation objectives, condition assessment, and underlying trends for each site are presented in the 2019 sHRA Report.

Table 1: European sites within 10 km of the Site

Name	Designation	Qualifying interest/ Designated Feature	Distance (km) /Bearing from Site Boundary
Bluemull and Colgrave Sounds	SPA	Supporting (foraging) habitat for breeding red-throated diver <i>Gavia stellata</i> .	0.3 SE
Otterswick and Graveland	SPA	Red-throated diver (breeding), 27 pairs representing at least 2.9% of the breeding population in Great Britain (1992-1996).	3 SW
Fetlar	SPA	Supporting populations of European importance of Annex I species: Arctic Tern <i>Sterna paradisaea</i> , 520 pairs representing at least 1.2% of the breeding population in Great Britain (Three year mean, 1994-1997) Red-necked Phalarope <i>Phalaropus lobatus</i> , 30 pairs representing at least 75.0% of the breeding population in Great Britain (Count, as at mid-1990s) Supporting populations of European importance of migratory species: Dunlin <i>Calidris alpina</i> , 90 pairs representing at least 0.8% of the breeding Baltic/UK/Ireland population (Count, as at late 1980s-early 1990s) Great Skua <i>Stercorarius skua</i> , 512 pairs representing at least 3.8% of the breeding World	3.9 SE

⁸ This site became fully classified in December 2020 (it was formerly described as a potential SPA in the 2019 sHRA Report).

Name	Designation	Qualifying interest/ Designated Feature	Distance (km) /Bearing from Site Boundary
		<p>population (Count, as at 1992)</p> <p>Whimbrel <i>Numenius phaeopus</i>, 65 pairs representing <0.1% of the breeding Europe/Western Africa population (Count, as at late 1980s-early 1990s).</p> <p>Supporting a seabird assemblage of international importance: 22,000 individuals including: Arctic skua, fulmar <i>Fulmarus glacialis</i>, great skua, Arctic tern <i>Sterna paradisaea</i>, red-necked phalarope <i>Phalaropus lobatus</i>.</p>	
Hermaness, Saxa Vord and Valla Field	SPA	<p>Supporting populations of European importance of Annex I species:</p> <p>Red-throated Diver, 28 pairs representing at least 3.0% of the breeding population in Great Britain (1994-1996)</p> <p>Supporting populations of European importance of migratory species:</p> <p>Gannet <i>Morus bassanus</i>, 12,000 pairs representing at least 4.6% of the breeding North Atlantic population (Count, as at 1994)</p> <p>Great skua 630 pairs representing at least 4.6% of the breeding World population (Count, as at 1997)</p> <p>Puffin <i>Fratercula arctica</i>, 25,400 pairs representing at least 2.8% of the breeding population (Count, as at 1987)</p> <p>Supporting a seabird assemblage of international importance: 52,000 individual seabirds including: guillemot <i>Uria aalge</i>, kittiwake <i>Rissa tridactyla</i>, shag <i>Phalacrocorax aristotelis</i>, fulmar <i>Fulmarus glacialis</i>, puffin <i>Fratercula arctica</i>, great skua <i>Catharacta skua</i>, gannet <i>Morus bassanus</i>.</p>	6.1 NE
East Mires and Lumbister	SAC	Blanket bog	2.0 S

4 Stage 1: Identification of Likely Significant Effects

- 4.1 The land at the Proposed Development does not include any parts of a European site and the Proposed Development is not directly connected with or necessary to the management of any European site.
- 4.2 In the absence of detailed analysis, the 2019 sHRA Report concluded that land within the Site may be functionally linked to a European site because of the presence of birds within the Site that are qualifying features of Bluemull and Colgrave Sounds SPA, Otterswick and Graveland SPA, Fetlar SPA, Hermaness and Saxa Vord and Valla Field SPA. This is a precautionary evaluation that has been carried out for the purposes of the Stage 1 'screening' assessment. The full evaluation (which is retained for the purposes of this sHRA 2) is presented in paras. 6.1 *et seq.* of the 2019 sHRA Report.
- 4.3 In the absence of avoidance and reduction measures (as is required under People Over Wind⁹) it is concluded that the Proposed Development is alone likely to have a significant effect on:
- Bluemull and Colgrave Sounds SPA.
 - Otterswick and Graveland SPA.
 - Fetlar SPA; and
 - Hermaness and Saxa Vord and Valla Field SPA.
- 4.4 A significant effect is likely to occur at each of the European sites listed above through a combination of one or more of the following pathways:
- Noise, vibration or visual disturbance of qualifying species using the Site.
 - Increased mortality of qualifying species using the Site.
- 4.5 East Mires and Lumbister SAC is located 2 km to the south of the Site and no mechanisms have been identified whereby the SAC could be impacted during the construction, operation, and decommissioning phases of the Proposed Development. For this reason, it has been scoped out of the assessment (in accordance with the 2019 sHRA Report).
- 4.6 This conclusion has been reached by considering the Proposed Development alone and therefore an 'in combination' assessment has not been necessary as part of the screening process. Potential in-combination effects are considered at Stage 2 Appropriate Assessment.

⁹ Case law relating to the judgment by the Court of Justice of the European Union (People Over Wind and Sweetman, 12 April 2018, C-323/17). Full details are presented in paras. 2.20 *et seq.* of the 2019 sHRA Report.

5 Stage 2: Appropriate Assessment

Introduction

- 5.1 The Proposed Development is considered likely to have a significant effect on the Bluemull and Colgrave Sounds SPA, Otterswick and Graveland SPA, Fetlar SPA, and Hermaness and Saxa Vord and Valla Field SPA. This conclusion is reached in the absence of mitigation, which is required following the People Over Wind judgment (see paras. 2.20 *et seq* of the 2019 sHRA Report). Consequently, the requirement to complete an appropriate assessment is triggered, which considers the effects of the Proposed Development on the integrity of these European sites. Where potential adverse effects are identified, this part of the assessment needs to consider measures to mitigate the identified effects.

Qualifying species considered in this assessment

- 5.2 Paragraphs 7.7 (*et seq.*) of the 2019 sHRA Report considers the qualifying species of European sites that were recorded within the Site with reference to desk study and survey data collected during the period 2016 to 2018. It also considers habitats and species associated with a European site (irrespective of whether they are qualifying features) that are liable to affect the conservation objectives of the site, i.e., if those habitats and species are necessary to the conservation of the habitat types and species listed for the protected area (see *Holohan & Ors. v An Bord Pleanála*, 7 November 2018, C - 461/17).
- 5.3 On this basis, the assessment considers whether land within the Site is functionally linked to any European site. Qualifying features for which a functional linkage between the Site and a European site has been identified are carried through to the impact assessment. Table 2 below presents the conclusion reached by the 2019 sHRA report with regard to functional linkage for each qualifying species considered. The assessment set out in the 2019 sHRA report remains unchanged.

Table 2. Qualifying species for which a functional linkage between the Site and a European site has been identified (following the assessment within the 2019 sHRA Report).

Species	European site	Conclusion	Scoped in for further impact assessment?
Red throated diver	Bluemull and Colgrave Sounds SPA.	Land within the Site is functionally linked to the SPA for red-throated diver as it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status.	Yes
	Otterswick and Graveland SPA. Hermaness, Saxa Vord and Valla Field SPA.	Land within the Site is not functionally linked to the Otterswick and Graveland SPA for red-throated diver as it does not provide an important role in maintaining or restoring the population of the qualifying species at favourable conservation status.	No

Species	European site	Conclusion	Scoped in for further impact assessment?
Whimbrel	Fetlar SPA.	Land within the Site is not functionally linked to the Fetlar SPA for whimbrel as it does not provide an important role in maintaining or restoring the population of the qualifying species at favourable conservation status.	No
Dunlin	Fetlar SPA.	Land within the Site is functionally linked to the SPA population of dunlin as it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status.	Yes
Great skua	Fetlar SPA. Hermaness, Saxa Vord and Valla Field SPA.	Land within the Site is not functionally linked to either the Fetlar SPA or the Hermaness, Saxa Vord and Valla Field SPA for great skua as it does not provide an important role in maintaining or restoring the population of qualifying species at favourable conservation status within these European sites.	No
Arctic skua	Fetlar SPA.	Land within the Site is not functionally linked to the Fetlar SPA for Arctic skua as it does not provide an important role in maintaining or restoring the population of qualifying species at favourable conservation status within this European site	No
Arctic tern	Fetlar SPA.	Land within the Site is not functionally linked to the Fetlar SPA for Arctic tern as it does not provide an important role in maintaining or restoring the population of qualifying species at favourable conservation status within these European sites.	No

Species	European site	Conclusion	Scoped in for further impact assessment?
Fulmar	Fetlar SPA.	Land within the Site is not functionally linked to the Fetlar SPA for fulmar as it does not provide an important role in maintaining or restoring the population of qualifying species at favourable conservation status within this European site.	No

5.4 In summary, the 2019 sHRA Report concluded that a functional linkage existed between the Site and the Bluemull and Colgrave Sounds SPA for red-throated diver; and between the Site and the Fetlar SPA for dunlin. This assessment remains unchanged for the 2021 Layout.

5.5 In the following sections, the potential impacts to red-throated diver and dunlin are evaluated and appropriate mitigation measures considered when determining whether the Proposed Development may have an adverse effect on the integrity of the Bluemull and Colgrave Sounds SPA or Fetlar SPA. Impacts are considered for the construction, operation, and decommissioning phases of the Proposed Development.

5.6 The conservation objectives of the Bluemull and Colgrave Sounds SPA and Fetlar SPA in relation to red-throated diver and dunlin are set out below.

Bluemull and Colgrave Sounds SPA

Habitat description

5.7 Bluemull and Colgrave Sounds SPA stretches from the north coast of Yell through Bluemull Sound down through Colgrave Sound as far south as the White Hill of Vatsetter (approximately 3 km south of Hascosay). The coastline of the SPA is mostly cliff with occasional sandy beaches and bays.

5.8 The inshore waters throughout the site are generally less than 40 m deep but offshore, especially to the south of Fetlar, water depth rapidly increases. Sediments are largely gravel and sand and support a diversity of fish, polychaete worms, gastropod and bivalve molluscs.

Conservation Objectives – qualifying species

5.9 The draft conservation objectives for the SPA are described as follows:

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.
- Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term.

Condition assessment

- 5.10 Bluemull and Colgrave Sounds is a recently classified SPA and no condition assessment information is currently available (see <https://informatics.sepa.org.uk/ProtectedNatureSites/>; accessed 08 September 2021).

Fetlar SPA**Habitat description**

- 5.11 Fetlar is an island in the Shetland group, lying to the east and south respectively of the larger islands of Yell and Unst. The species-rich heath, bog and mire communities on the island support an important and characteristic breeding bird community, with the cliffs, rocky shores, and adjacent coastal waters important for breeding seabirds.
- 5.12 Fetlar SPA overlaps North Fetlar Site of Special Scientific Interest (SSSI), Lamb Hoga SSSI and Trona Mires SSSI. The seaward extension extends approximately 2 km into the marine environment to include the seabed, water column and surface.

Conservation Objectives – qualifying species

- 5.13 To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and
- 5.14 To ensure for the qualifying species that the following are maintained in the long term:
- Population of the species as a viable component of the site
 - Distribution of the species within site
 - Distribution and extent of habitats supporting the species
 - Structure, function and supporting processes of habitats supporting the species
 - No significant disturbance of the species

Condition assessment

- 5.15 NatureScot has published information about the condition of the qualifying features of the Fetlar SPA and these are summarised below (Source: <https://informatics.sepa.org.uk/ProtectedNatureSites/>, accessed 08 September 2021).
- 5.16 The condition of the SPA was last assessed on 21 June 2016 for some qualifying features, but some features were last assessed before this, the oldest assessment being for dunlin in 2003. The assessment has concluded that the SPA population of dunlin is in favourable condition.

Impact mechanisms on qualifying species**Noise, vibration or visual disturbance**

- 5.17 The extent of potential impacts through the mechanisms of noise, vibration or visual related disturbance are reduced for the 2021 Layout in comparison to the 2019 Layout because of a reduction in both the extent of the construction footprint, and number of operational turbines. Table 3 (below) presents a comparison of the number of territories predicted to be impacted during both the construction and operational phases between the 2019 Layout and the 2021 Layout because of habitat loss and disturbance / displacement.
- 5.18 The assessment within the 2019 sHRA report was based on assumptions that disturbance and displacement would impact all territories recorded within published species-specific

distances from infrastructure (during construction) and turbines (during operation). The sources for determining the disturbance distances for each species are set out in the 2019 sHRA Report, and within the 2019 EIA Report. The distances over which disturbance impacts are likely to occur have been amended for the assessments within the 2020 SEI, SEI 2 and this sHRA 2 in response to comments from RSPB Scotland received following submission of the 2019 EIA Report (as set out in the Consultation Responses section, above).

Table 3. Comparison of predicted number of territories impacted because of disturbance / displacement.

Species	Number of Territories predicted to be disturbed or displaced by the 2019 Layout	Disturbance / displacement distance (with source reference)	Number of territories likely to be disturbed or displaced by the 2021 Layout accounting for the published reduction in abundance within disturbance distance (derived from source reference)
Red throated diver	6	500 m (Ruddock & Whitfield, 2007)	0
Dunlin	20 - 25	400 m (Sansom <i>et al.</i> , 2016)	10.27 (based on 79% reduction in abundance)

- 5.19 The locations of red-throated diver breeding lochans identified during the survey work are presented on **Confidential Figure 5**.
- 5.20 None of the lochans at which confirmed or probable breeding of red-throated diver was recorded during baseline survey work are within 500 m of the 2021 Layout. However, survey results indicate that the lochans used between the 2016 and 2018 breeding season varied, and other potentially suitable lochans are present nearer to the 2021 Layout. There remains a risk that disturbance or displacement impacts could occur during construction, operation and decommissioning of the Proposed Development, and could (in the absence of mitigation) contravene an objective of the Bluemull and Colgrave Sounds SPA.
- 5.21 Dunlin territory locations recorded during baseline survey work of the Site are presented on **Figure 3**.
- 5.22 The 2019 sHRA Report concluded that disturbance and displacement impacts on dunlin arising because of construction, operation and decommissioning of the Proposed Development would be minor. For the 2021 Layout, the number of territories predicted to be affected has reduced from a maximum of 25 to 10¹⁰. Potential impacts on dunlin through disturbance and displacement remain (albeit are lessened) and could (in the absence of mitigation) contravene an objective of the Fetlar SPA.

Increased mortality

Construction related mortality

- 5.23 During the construction phase of the Proposed Development, in the absence of mitigation, it is possible that birds nesting within the footprint of the Proposed Development could be killed or injured during the preparatory works (vegetation removal and soil stripping). Dunlin

¹⁰ Rounded to the nearest whole territory. The range presented for the 2019 Layout reflects the variance between the 2016 and 2018 distribution of territories. The number of territories within 400 m of the 2021 Layout was the same in both survey years.

is the only SPA qualifying feature (Fetlar SPA) that is potentially vulnerable to increased mortality in this way as survey identified 4 territories in 2016 and 5 territories in 2018 that were centred on (or very near to) infrastructure elements (e.g. turbine foundations, temporary crane pads and access tracks) of the 2021 Layout (see **Figure 3**). Impacted birds could form part of the SPA population (on the assumption that breeding individuals are not site faithful, and breeding populations interchange regularly; Hardy & Minton, 1980). Potential impacts on dunlin through construction and decommissioning phase mortality remain (albeit are lessened in comparison to the 2019 Layout) and could (in the absence of mitigation) contravene an objective of the Fetlar SPA.

Collision mortality

- 5.24 During the operation of the Proposed Development it is possible that birds flying through the wind farm will collide with moving turbine blades.
- 5.25 In response to consultation responses on the 2019 EIA Report and 2020 SEI, the collision risk has been reviewed for the 2021 Layout, both in light of the reduced number of turbines and smaller turbine dimensions within the 2021 Layout, and the specific comments from NatureScot. The full collision risk model for the 2021 Layout is presented in Appendix 6.1 of SEI 2.
- 5.26 Table 4 (below) presents a comparison of collision mortality predicted for the 2019 Layout and for the 2021 Layout. This accounts for the amendment to the collision risk model as set out in SEI 2. Collision risk analysis for whimbrel and dunlin has not been undertaken because insufficient flight activity within the collision risk volume was recorded during survey work. The risk of collision for these species is likely to be negligible.

Table 4. Comparison of collision related mortality on which the 2019 sHRA was based and following model amendments for the 2021 Layout.

Species	Collision rate as predicted for the 2019 Layout.	Collision rate as predicted for the 2021 Layout.	Difference between 2019 and 2021 predictions
Red throated diver	0.12 and 0.18 birds per annum. Average of 1 bird every 7.1 years. 4.3 collisions over the 30-year life of the wind farm.	0.21 to 0.29 birds per annum Average of 1 bird every 4.1 years 7.3 collisions over the 30-year life of the wind farm.	Increase of 3 collisions over the 30-year life of the wind farm ¹¹ .

- 5.27 Collision risk for red-throated diver is considered below in relation to the European Sites listed in the scope of this assessment. Collision mortality of dunlin is unlikely to occur and will not result in any adverse impact on the integrity of the Fetlar SPA.
- 5.28 The 2019 sHRA Report concluded that land within the Site is functionally linked to the SPA for red-throated diver as it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status. Increased mortality through collision could, therefore, adversely affect the integrity of the SPA.
- 5.29 The average predicted number of collisions for the 2021 layout is 0.25 birds per annum. This represents approximately 0.03 % of a total 407 pairs estimated to be present in the Shetland Natural Heritage Zone (NHZ) (Wilson *et al*, 2015).

¹¹ This increase is due to errors identified within the previous collision risk model which has been revised and peer reviewed for this sHRA 2.

- 5.30 The SPA population of 194 pairs (SNH, 2016 and JNCC, 2020) forms approximately 47.7 % of the NHZ population of red-throated diver. Therefore, a best estimate of the number of SPA birds potentially impacted by collision mortality at the Proposed Development would be 47.4 % of the predicted 0.25 average annual collisions (= 0.12 birds that are associated with the SPA per annum). This represents approximately 0.06 % of the annual SPA population.
- 5.31 The flight line data used to inform the collision risk model is presented on **Figure 4**. It can be seen from the figure that the highest concentrations of flight activity are located to the west of the 2021 Layout (predominantly at Gossa Water, and Grud Waters) and to the north-east of the 2021 Layout at Kussa Waters. Flights associated with lochans in these areas indicate that birds move away from the Proposed Development to foraging waters, and do not regularly overfly it on direct foraging flights. Birds present to the west of the 2021 Layout are most likely to head west to forage beyond the western coast of Yell (as is logical to minimise energy expenditure through taking the shortest flight route) and are therefore unlikely to represent part of the SPA population (which is located beyond the eastern coast of Yell). Any occasional flights onto the SPA are likely to occur between Gossa Water and Basta Voe, taking the shortest flight route that passes south-east of the 2021 Layout, and unlikely to involve overflying of turbines. This assumption is borne out by the results of the 2016 and 2018 survey work, which reports a low number of birds flying from Gossa Water to Basta Voe.
- 5.32 Data collected by Halley & Hopshaug (2007) at Smøla wind farm, Norway, suggests that red-throated diver are likely to actively avoid overflying or flying through turbine arrays. It is therefore likely that flight activity near the 2021 Layout will reduce in relation to the baseline condition, and that the likelihood of collision of any birds flying from Gossa Water to Basta Voe (and onto the SPA) would be very low.
- 5.33 Most flights recorded within the collision risk volume¹² are wheeling flights between lochans beyond the periphery of the 2021 Layout. It is likely that such flight activity would be at a lower risk of collision than that predicted by the model. As indicated above, birds associated with lochans beyond the periphery of the 2021 Layout are less likely to fly closer to operational turbines because of reported avoidance behaviour, and therefore likely to avoid collision. In addition, published data (Dürr, 2021) on red-throated diver collisions indicates a single collision has been reported in Europe. This suggests that the avoidance rate for this species is greater than that assumed by the model.
- 5.34 Given that the baseline data indicates that regular foraging flights over the 2021 Layout do not occur, the potential barrier effect of the Proposed Development is unlikely to have an impact on the energetic demands of individual birds, or on the distribution of the local population. Birds occupying lochans on the periphery of the Proposed Development will continue to primarily move away from it to forage. In addition, given that no lochans at which confirmed or probable breeding was recorded during the baseline survey work are within 500 m of the 2021 Layout an adverse impact on the number of birds using the Site is unlikely to occur.
- 5.35 In conclusion, the predicted collision risk of red-throated diver because of the Proposed Development is unlikely to have more than a very minor impact on SPA qualifying features. This is because a very small proportion of the flights entered into the model are likely to involve SPA birds, and any birds commuting between the Site and the SPA are unlikely to fly through the turbine array. However, collisions of birds that use the SPA cannot be ruled out, and there is a risk that could (in the absence of mitigation) contravene an objective of the Bluemull and Colgrave Sounds SPA.

¹² Defined by the horizontal area within 500 m of turbines and the vertical rotor-swept area.

Conclusions

- 5.36 In the absence of mitigation measures it is predicted that some qualifying features could be impacted by the Proposed Development. These impacts on SPA birds are summarised below.
- 5.37 During the construction phase the following impacts may occur:
- Possible disturbance and displacement of red-throated diver (if territories are established within 500 m of the 2021 Layout).
 - Disturbance and displacement of dunlin (up to 10 territories).
 - Death or injury of dunlin (up to 4 nest locations which may be directly impacted).
- 5.38 During the operation phase the following impacts may occur:
- Possible disturbance and displacement of red-throated diver (if territories are established within 500 m of the 2021 Layout).
 - Displacement of dunlin (up to 10 territories).
 - Collision of red-throated diver with turbines (0.25 birds per annum, or 0.12 birds potentially linked to the SPA population per annum).
- 5.39 During the decommissioning phase impacts may occur that are expected to be similar to those predicted for the construction phase.
- 5.40 In the absence of mitigation, adverse impacts on the integrity of the Bluemull and Colgrave Sounds SPA may occur because of possible disturbance and collision mortality of red-throated diver. These impacts need to be considered in the context of the following draft Conservation Objectives of the SPA:
- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.
 - Avoid significant mortality, injury, and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term.
- 5.41 In the absence of mitigation, adverse impacts on the integrity of the Fetlar SPA may occur because of possible disturbance and construction-phase mortality of dunlin. These impacts need to be considered in the context of the following Conservation Objectives of the SPA:
- Maintenance of the distribution and extent of habitats supporting the species
 - Maintenance of the structure, function and supporting processes of habitats supporting the species
 - Cause no significant disturbance of the species

Mitigation measures

- 5.42 The mitigation measures outlined in the 2019 sHRA Report will be broadly retained for the 2021 submission. However, minor amendments to the objectives of the habitat management plan proposed have been made to support the SEI 2 submission. These include a reduction of the number of off-site areas at which habitat enhancement measures will be implemented.
- 5.43 The Draft Habitat Management Plan (HMP) 3 (SEI 2 Appendix 7.1) provides an overview of proposed mitigation, habitat enhancement and focussed monitoring. Construction phase

mitigation measures will be set out in a Construction Environment Management Plan (CEMP). The CEMP will be developed (and agreed in consultation with stakeholders) which will set out the roles of an Ecological Clerk of Works, contain a program of pre-construction and construction-phase ornithological survey work, and set out method statements to ensure current best practice working methods are implemented.

- 5.44 A summary of the proposed mitigation measures is presented below.

Construction Phase Mitigation

Mitigation measures for red-throated diver

- 5.45 The footprint of the 2021 Layout is beyond 500 m of all confirmed and probable breeding lochans identified during the baseline survey work in 2016 and 2018.
- 5.46 An Ecological Clerk of Works (ECoW) will monitor diver activity at all lochans within 500 m of the 2021 Layout between mid-March and late-July pre-construction to determine breeding status at each lochan. If breeding is confirmed or assessed as probable at any monitored lochan, then a 500 m construction buffer around the lochan will be applied. Once the nest is established and chicks observed to be present, the construction buffer can be reduced based on the results of monitoring, the purpose of which is to identify the distance at which individual pairs start to show evidence of disturbance. The construction buffer will not be reduced below 300 m in line with the lower range of disturbance suggested by Ruddock & Whitfield (2007). Observation will continue at those lochans with confirmed breeding, and within 500 m of active disturbance to check for signs of disturbance behaviour (for example, alarm, frequent diving, or reluctance to return to the nest site). Details of the proposed exclusion measures are provided in Table 5.
- 5.47 These measures are likely to fully mitigate disturbance impacts on breeding red-throated diver during the construction phase of the Proposed Development.
- 5.48 Potential impacts on dunlin through disturbance and displacement remain (albeit are lessened) and could (in the absence of mitigation) contravene an objective of the Fetlar SPA.

Table 5. Exclusion zones and timing for avoidance of disturbance to red-throated diver during construction

Period	Breeding stage (as confirmed by ECoW)	Work exclusion distance
Mid-March to July inclusive	<i>Arrival, nest building, incubating</i>	500 m
April to August inclusive	<i>Chick brooding/provisioning</i>	>300 m (distance to be confirmed by monitoring of response to construction activities)

Mitigation measures for dunlin

- 5.49 To avoid destruction of the nests of birds (and the killing and injury of nestlings and destruction of eggs), vegetation will be removed in the winter (between October and February inclusive but preferably between November and January). If there is a need for destruction of habitats outside the period October to February inclusive, this will need to be overseen by an ECoW, whose role will be to establish whether breeding birds are present or not.
- 5.50 If construction must take place between March and August inclusive, the vegetation in any areas for tracks, material laydown, turbine bases and other infrastructure will be kept short

during the breeding season until such time that they are constructed. This will be achieved by mechanical cutting or strimming, where practicable, during the breeding season. If necessary other nesting deterrents may be used, such as visual bird scarers (e.g. kites). The cleared areas will be visited by an ECoW to check whether they have been colonised by nesting birds, advise on any restrictions the presence of nesting birds pose and whether further measures are needed to keep the vegetation under control and deter birds from nesting.

- 5.51 These measures are likely to mitigate impacts on breeding dunlin during the construction phase of the Proposed Development by minimising the risk of birds being harmed and disturbed whilst breeding. These measures are likely to result in the displacement of birds away from previous nesting sites.
- 5.52 An ECoW will scan for breeding birds within a perimeter of up to 400 m of the Proposed Development footprint (in line with published disturbance distances for the species reported in Sansom *et al.*, 2016) ahead of the active works.
- 5.53 If breeding is confirmed within this perimeter of the Proposed Development footprint, then active works will be prohibited in that area (as marked out by the ECoW) with allowance for passage by low-level construction traffic only until the ECoW is satisfied that the nesting attempt has been concluded / the young are capable of dispersal.

Operational Phase Mitigation

- 5.54 Post-construction management of breeding bird habitats within the Site will be undertaken for the life of the Proposed Development (30 years). The precise management regime will be detailed in Draft HMP 3. An overview of mitigation measures is provided below.

Mitigation / enhancement measures for red-throated diver

- 5.55 The footprint of the 2021 Layout is beyond 500 m of all confirmed and probable breeding lochans identified during the baseline survey work in 2016 and 2018.
- 5.56 If the operation of the Proposed Development results in the displacement of red-throated diver then the possible worst-case scenario is that the displaced birds will move off site and, if they are dominant, they may displace other birds from existing territories (which may then lose their dominance and become unproductive). Alternatively, the displaced birds may lose their dominance when they move into adjacent habitat areas, and ultimately, they may also become unproductive.
- 5.57 Examination of Ordnance Survey mapping and aerial photography indicates that there are 78 lochans within the Site; however, not all of these may be suitable as nesting locations for red-throated divers. Survey data from 2016 and 2018 indicate that there were unoccupied lochans during the breeding season in both years, which may be due to various reasons including:
- The population of red-throated diver may be below the breeding capacity for the habitat, i.e., there are more lochans than breeding pairs.
 - The lochans that are not being used may not be of suitable quality.
 - The lochans may be rendered unusable by other factors such as territorial breeding birds.
- 5.58 The breeding bird survey data indicate that in 2016 and 2018 the closest that a nest site (confirmed and unconfirmed) was to a neighbouring nest site was ca. 400 m. It is assumed from this that territorial behaviour by breeding red-throated diver means that nest sites are unlikely to be established within a 400 m buffer around an occupied nest site. If this is applied to lochans within the Site, it would be expected that a cluster of lochans in close

proximity to each other (i.e., within 400 m) may only support a single breeding pair of red-throated diver (not necessarily a pair per lochan).

- 5.59 Within the Site there are 78 lochans arranged in 36 clusters, i.e., if territorial behaviour is taken into account, the 78 lochans may only support up to 36 breeding pairs of red-throated diver. In 2016 a total of 3 breeding pairs of red-throated diver were present (confirmed / unconfirmed) and in 2018 a total of 6 breeding pairs were present.
- 5.60 The high proportion of unoccupied lochans in 2016 and 2018 may be due to low numbers of red-throated diver or predation, but it may also be due to habitat quality, in which case enhancement could increase their suitability. Enhancement of lochans (particularly in the north-western part of the Site) may also serve to draw breeding birds away from the Proposed Development and reduce risk of collision.
- 5.61 Enhancement of small, degraded lochans locally (beyond 500 m of turbine locations) will be undertaken during the construction phase (so that enhancement measures are allowed to establish as early into the operation phase of the Wind Farm as possible).
- 5.62 Measures for enhancement of lochans for divers will include one or more of the following:
- Profiling of degraded or poached margins.
 - Creating peat islands.
 - Providing nesting rafts (on sheltered lochans).
 - Damming lochan outflows to raise and stabilise water levels.
- 5.63 The enhancement of lochans will provide new nesting opportunities for those red-throated divers that may be displaced by the presence of operating wind turbines and the occasional presence of maintenance personnel. These measures are likely to fully mitigate impacts on displaced red-throated diver during the operation phase of the Proposed Development (no breeding lochans within 500 m of the 2021 Layout were recorded during baseline survey work, but suitable habitat exists).

Mitigation / enhancement measures for dunlin

- 5.64 The enhancement of upland habitats will provide new nesting opportunities for dunlin that are displaced by the presence of operating wind turbines and the occasional presence of maintenance personnel. The proposed enhancement measures are likely to fully mitigate impacts on displaced dunlin during the operation phase of the Proposed Development (up to 10 territories may be displaced).
- 5.65 Grazing management will also occur near to high densities of breeding dunlin. Where retained, these, and other identified areas of blanket bog, should be free from grazing between April and July inclusive to allow a cover sward to develop, where possible. Several scrapes will also be created in areas of managed blanket bog to provide feeding opportunities for dunlin.

Monitoring

- 5.66 A comprehensive monitoring programme will be implemented to record the use of the Site by birds following construction. Survey effort will be comparable to pre-construction baseline work. The frequency of monitoring and specific methods will be agreed with NatureScot and other interested parties prior to commencement of any works.
- 5.67 Monitoring surveys will be reported on and will include a thorough desk-study (including, for example, data from National census surveys, SBC, and Shetland Oil Terminal Environmental Advisory Group (SOTEAG) reports) to enable comparison of survey data with population trends throughout Shetland as a whole. If monitoring reveals that habitat

enhancement measures have not been successful (considering population trends etc), a programme of further habitat enhancement will be agreed with NatureScot and Shetland Islands Council and implemented. This will include further habitat enhancement at locations that are more distant from the wind turbines.

Decommissioning Phase Mitigation

5.68 Decommissioning mitigation will broadly follow measures proposed for construction of the Proposed Development. Mitigation will be tailored to avoidance of impacts (through disturbance and displacement) on those species that breed, roost or forage within the Site at that time.

Impact summary

5.69 Considering the proposed mitigation measures that are described in the section above the residual impacts on qualifying features (birds) are as follows:

5.70 During the construction phase the following impacts may occur:

- Possible disturbance and displacement of red-throated diver. Pre-development surveys, appropriate timing of the work and the use of buffer zones will ensure that disturbance and displacement of red-throated diver do not occur. Baseline survey work did not identify any breeding lochans within 500 m of the 2021 Layout.
- Disturbance and displacement of dunlin. Pre-development surveys, appropriate timing of the work and the use of buffer zones will ensure that disturbance and displacement of dunlin does not occur. Baseline survey work identified a small number of (up to 10) territories within 400 m of the 2021 Layout.
- Death or injury of dunlin. Pre-development surveys and the adoption of habitat management measures will ensure that death or injury of dunlin is not likely.

5.71 During the operation phase the following impacts may occur:

- Possible disturbance and displacement of red-throated diver (if territories are established within 500 m of the 2021 Layout), but this will be minimised through enhancement of lochans in locations beyond 500 m of turbines and roads.
- Displacement of dunlin (up to 10 territories) but this will be minimised through enhancement of breeding habitat beyond 400 m of turbines and roads.
- Collision of red-throated diver with turbines (0.25 birds per annum, or 0.12 birds potentially linked to the SPA population per annum), but this will be minimised through enhancement of lochans in locations away from turbines.

5.72 It is anticipated that any displaced red-throated diver or dunlin will be accommodated through habitat enhancement to create more favourable breeding habitat. It is expected that displacement effects can be fully mitigated through habitat enhancement.

5.73 Collision events for red-throated diver are predicted to be low and will affect up to 1.9 % of the estimated 194 pairs using the SPA (SNH 2016) over the 30-year life of the wind farm. This figure is likely to be much lower, as the 2021 Layout does not intersect any regularly used commuting route onto the SPA. The enhancement of lochans away from operational turbines, and near to offshore feeding grounds to the west of Yell will further reduce the risk of collision.

5.74 Considering the proposed mitigation measures, it is concluded that the Proposed Development will not have an adverse effect on the integrity of Bluemull and Colgrave Sounds SPA or Fetlar SPA. The land within the Site is functionally linked to the Bluemull and Colgrave Sounds SPA for red-throated diver and to the Fetlar SPA for dunlin. Proposed

measures will ensure that impacts on red-throated diver and dunlin are mitigated. This assessment is in line with the conclusions of the 2019 sHRA Report.

6 The Identification of Other Plans and Projects

Overview

- 6.1 As part of the assessment, other plans and projects with potential to have ‘in-combination’ impacts on European sites have also been considered (as required under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended)). The scope of the ‘in-combination’ assessment has been derived with reference to the source-pathway-receptor model, which highlights whether there is any potential pathway that connects the Proposed Development, in-combination with other plans and projects, to any European site.
- 6.2 The appropriate assessment has considered the impacts arising from the construction of the wind farm on the Bluemull and Colgrave Sounds SPA and Fetlar SPA. In summary, an impact is only likely to occur in combination with another plan or project if it is possible that they could collectively impact on the same population of qualifying features (i.e. birds).
- 6.3 In-combination effects are most likely to result with regard to those qualifying features for which a residual effect is predicted, particularly if the core range of these features includes other planned, consented or built development. Given the wide-ranging behaviour of some species found within the Site, it is considered reasonable that in-combination effects should be considered in relation to other plans or projects that fall within the Shetland NHZ.
- 6.4 There are five consented wind farms within the Shetland NHZ for which the ornithological impact assessment have been reviewed. This remains unchanged from the 2019 sHRA Report. Further details of these wind farms, and the full assessment of cumulative effects following SNH (2012) guidance are presented in the 2020 SEI, and SEI 2.
- 6.5 Table 6 (below) presents the total collision mortality (birds per year), and Table 7 presents the predicted disturbance / displacement impacts (number of territories lost) reported for the 2021 Layout and all wind farms in the scope of in-combination assessment (except for Gremista, for which there is no quantitative data). in-combination collision mortality impacts are considered for red-throated diver; and in-combination disturbance / displacement impacts are considered for red-throated diver and dunlin.
- 6.6 The number of birds and territories affected are presented in relation to the population of each qualifying species at each respective European site. These figures account for the proportion of the Shetland NHZ population (derived from Pennington *et al.* 2004 for dunlin, and Wilson *et al.* 2015 for red-throated diver) that contribute to the populations at each European site. It assumes that the same proportions can be applied to the total number of birds impacted at each wind farm in reaching a best estimate of the number of SPA birds impacted.

Table 6. In-combination assessment of collision mortality (birds per year).

Species	Population estimate			Impact of other wind farms		In combination impacts	
	Population of SPA (individuals)	Population of Shetland NHZ (individuals)	% of the Shetland NHZ population contributing to the SPA population.	Sum of collision mortality (birds/year) at other wind farms	% of SPA population potentially killed by other wind farms per annum	Collision mortality (birds/year) at the Proposed Development	% of SPA population potentially killed by the Proposed Development and other wind farms in combination per annum
<i>Red-throated diver</i>	388	814	47.7 %	1.58 - 2.98	0.19 – 0.36	0.21 - 0.29	0.22 - 0.4

Table 7. In-combination assessment of displacement (number of territories adversely impacted by displacement or disturbance during operation).

Species	Population estimate			Impact of other wind farms		In combination impacts	
	Population of SPA (pairs)	Population of Shetland NHZ (pairs)	% of the Shetland NHZ population contributing to the SPA population.	Pairs displaced by other wind farms	% of SPA population affected by other wind farms	Pairs displaced by Proposed Development	% of SPA population affected by Proposed Development and other wind farms in combination
<i>Red-throated diver</i>	194	407	47.7 %	4 - 5	0.98 – 1.23	0	0.98 – 1.23
<i>Dunlin</i>	90	1,700	5.3 %	11	0.66	10.27	1.25

Assessment of In-combination Effects

- 6.7 In-combination collision impacts for red-throated diver are low and predicted to affect less than 0.5 % of the Bluemull and Colgrave Sounds SPA population per annum. This figure is likely to be an over-estimate as the 2021 Layout does not intersect any regularly used commuting route onto the SPA. The enhancement of lochans away from operational turbines, and near to offshore feeding grounds to the west of Yell will further reduce the risk of collision. The Conservation Objectives of the Bluemull and Colgrave Sounds SPA are, therefore, unlikely to be compromised because of the Proposed Development in combination with other wind farms.
- 6.8 In-combination displacement impacts are unlikely to occur for red throated diver. No additional breeding pairs are predicted to be disturbed or displaced by the Proposed Development.
- 6.9 For dunlin, in-combination displacement impacts are marginally greater because of the Proposed Development than the baseline condition (other wind farms only). However, it is expected that displacement effects can be fully mitigated through habitat enhancement beyond 400 m of the 2021 Layout. The Conservation Objectives of the Fetlar SPA are, therefore, unlikely to be compromised because of the Proposed Development in combination with other wind farms.

7 Conclusions

- 7.1 The conclusions of the 2019 sHRA Report have not changed in respect of potential impacts of the Proposed Development on European sites.
- 7.2 The Proposed Development is not directly connected with or necessary to the management of any European site (Regulation 63 of the Conservation of Habitats and Species Regulations 2017).
- 7.3 With reference to Regulation 63 of the Conservation of Habitats and Species Regulations 2017, the assessment has concluded that some aspects of the Proposed Development could have a significant effect on the Bluemull and Colgrave Sounds SPA, Otterswick and Graveland SPA, Fetlar SPA, and Hermaness and Saxa Vord and Valla Field SPA, when considered alone and in the absence of mitigation. For this reason, an 'appropriate assessment' has been carried out. In reaching this conclusion consideration has been given to the implications of the judgment released from the Court of Justice of the European Union 'People Over Wind and Sweetman', 12 April 2018, C-323/17.
- 7.4 The shadow appropriate assessment has concluded that the Proposed Development is not likely to have a significant effect on the East Mires and Lumbister SAC as no impact mechanism has been identified for this European site. As a result, this European site has been excluded from the assessment.
- 7.5 The shadow appropriate assessment has considered impacts on all habitats and species associated with the Bluemull and Colgrave Sounds SPA, Otterswick and Graveland SPA, Fetlar SPA, and Hermaness and Saxa Vord and Valla Field SPA (irrespective of whether they are qualifying features) if impacts on those habitats and species are liable to affect the conservation objectives of the site. This takes into account the direction provided by a second recent European Court judgment (Holohan & Ors. v An Bord Pleanála, 7 November 2018, C - 461/17).
- 7.6 The results of desk study and survey have led to the conclusion that land within the Proposed Development is functionally linked with the Bluemull and Colgrave Sounds SPA for red-throated diver, and that it is functionally linked with the Fetlar SPA for dunlin. With regard to all identified impacts, it is concluded that, in view of the Site's conservation objectives and applying best scientific knowledge, there will be no adverse effect on the integrity of any European site due to the Proposed Development. The Proposed Development will not impact directly on Bluemull and Colgrave Sounds SPA, Otterswick and Graveland SPA, Fetlar SPA, and Hermaness and Saxa Vord and Valla Field SPA.
- 7.7 It is considered unlikely that the residual impacts, following implementation of the proposed mitigation measures, arising as a result of the Proposed Development would be significantly greater when taken in combination with other wind farm developments than in isolation.

8 References

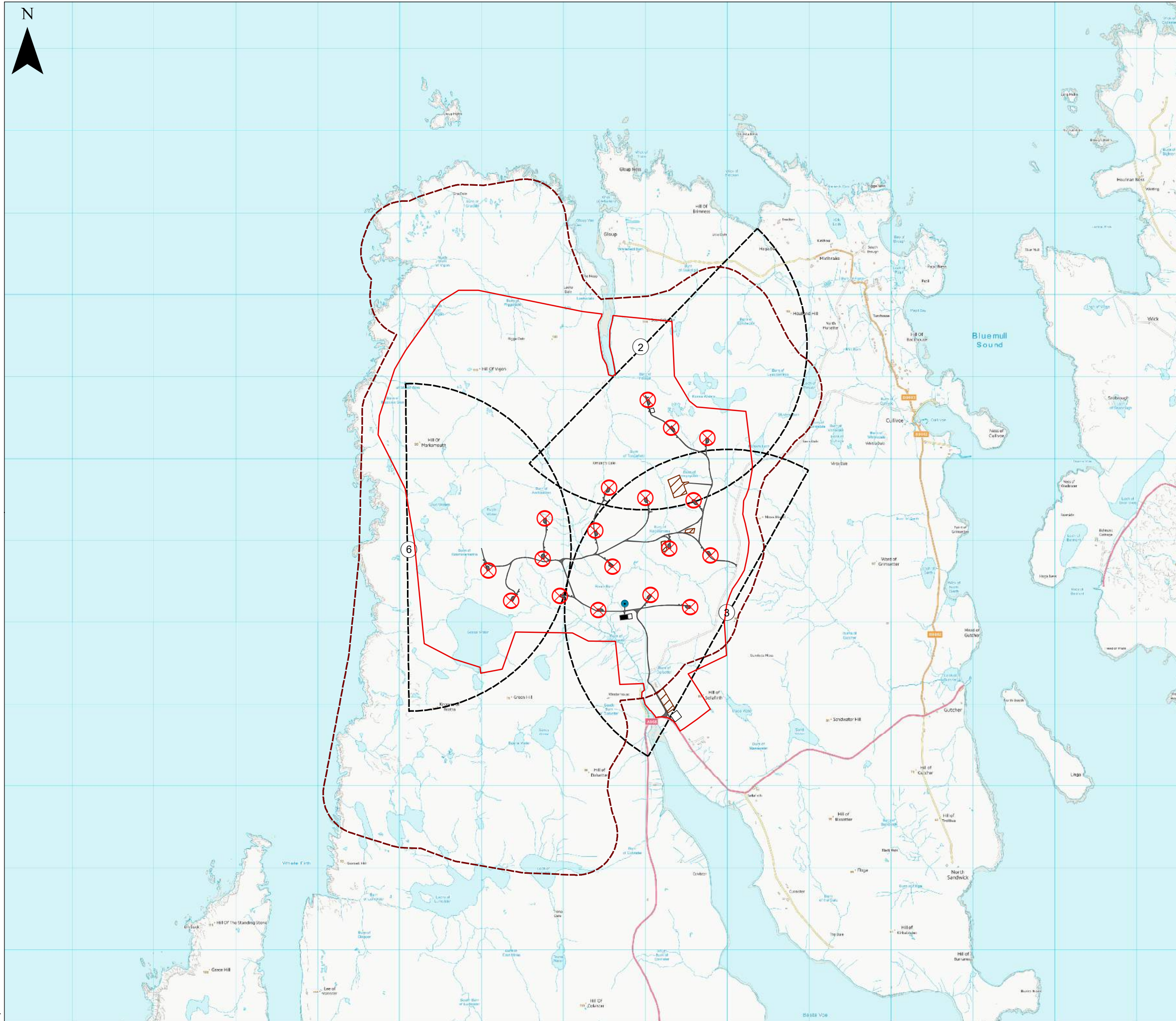
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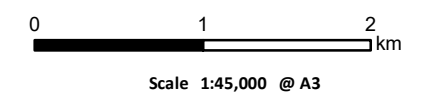
9 Appendices

Appendix 1: Figures

(overleaf)



- KEY**
- Site Boundary
 - ⊗ Turbine locations
- Infrastructure**
- Met mast
 - Substation
 - Site compound
 - Access track and hardstanding
 - Borrow pits
- Survey Areas**
- 1 Vantage point location
 - 2 km 180° viewsheds
 - Moorland Breeding Bird Survey Area

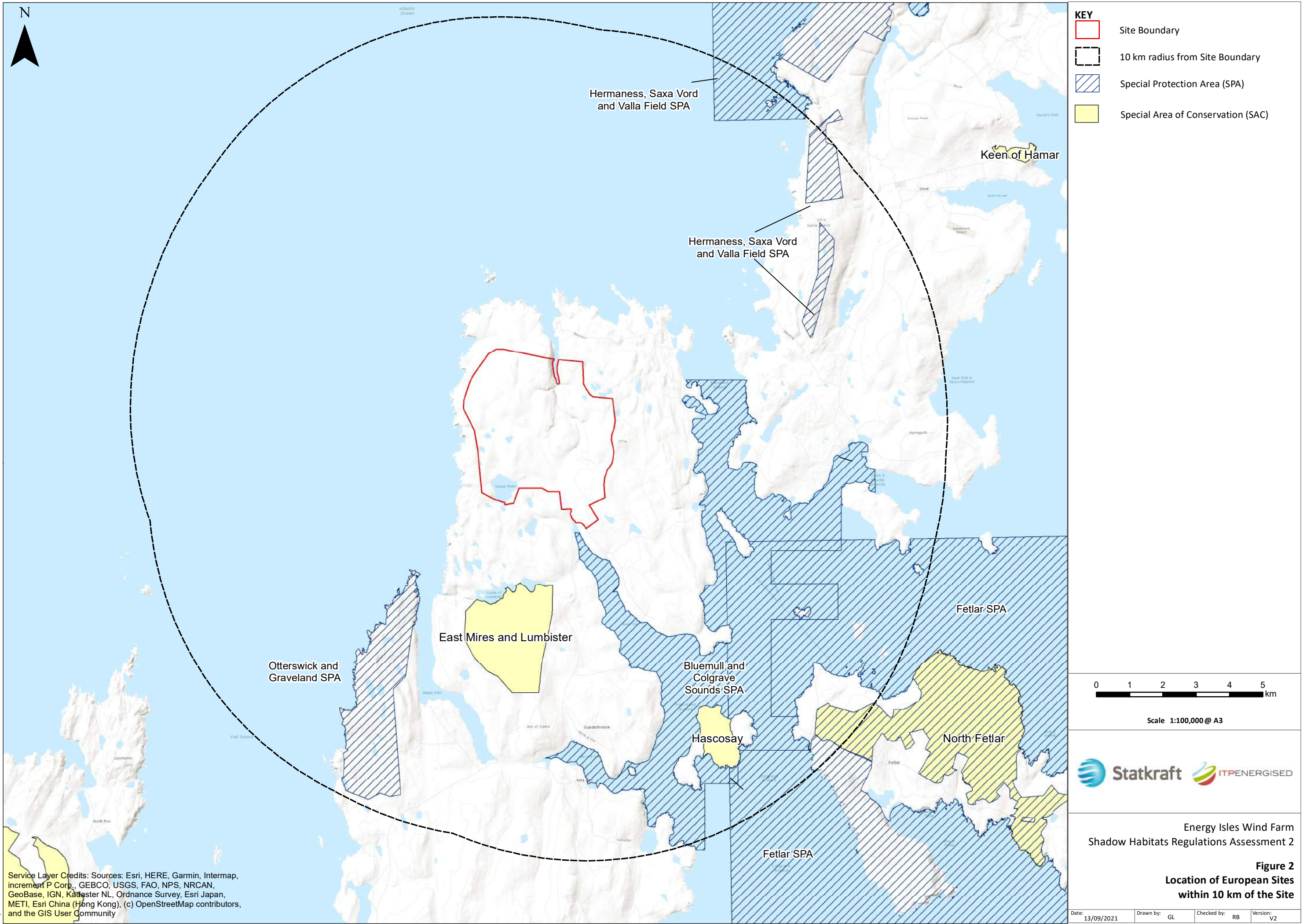


Energy Isles Wind Farm
Shadow Habitats Regulations Appraisal 2

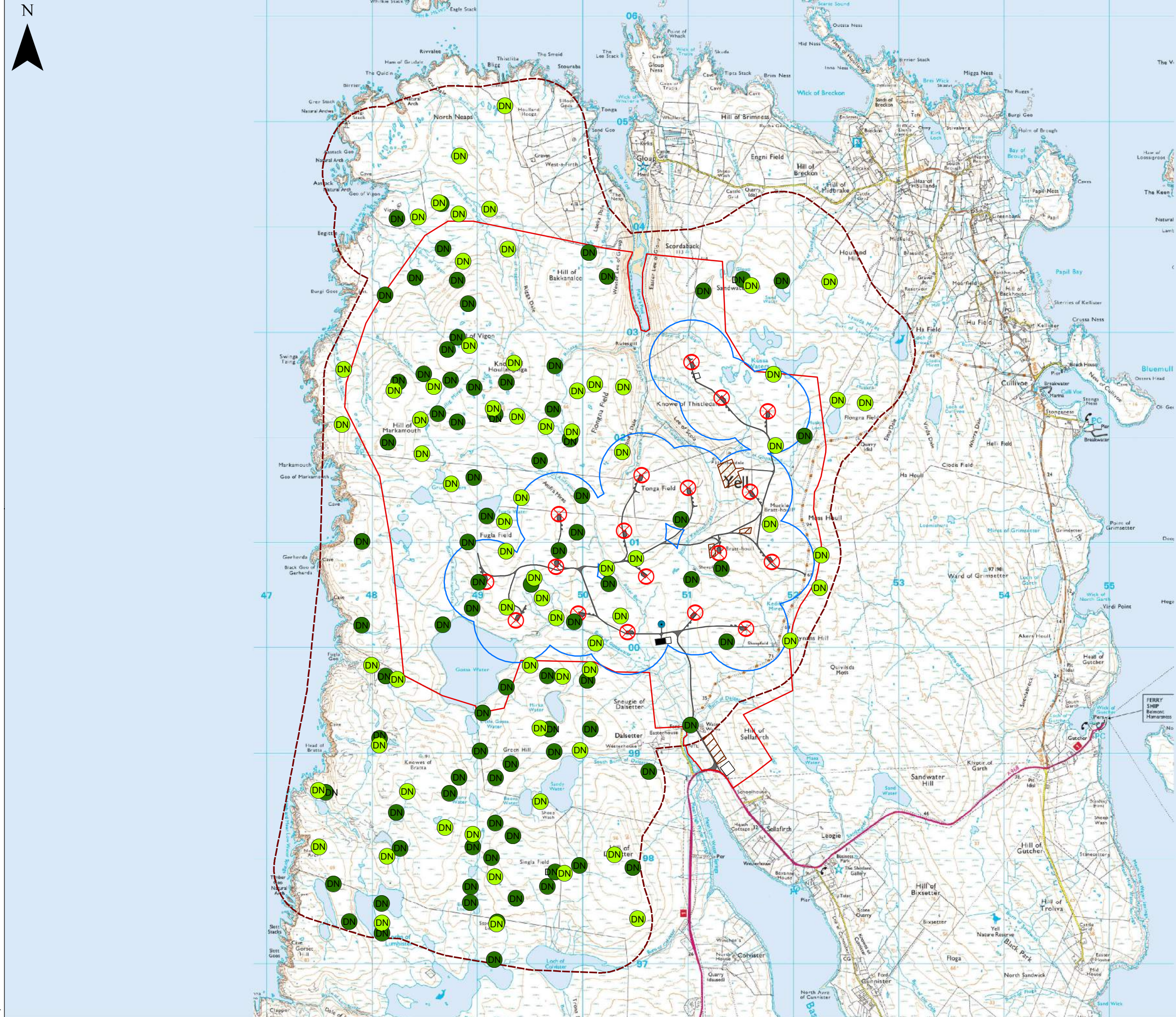
Figure 1
Site location
and survey areas

Date: 13/09/2021	Drawn by: GL	Checked by: RB	Version: V1
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Project Number: 2380



Project Number: 11075
 Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



KEY

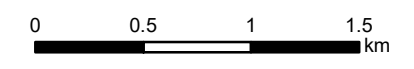
- Site Boundary
- ⊗ Turbine locations
- Moorland Breeding Bird Survey Area

Infrastructure

- Met mast
- Substation
- Site compound
- Access track and hardstanding
- Borrow pits
- 400 m turbine buffer

Dunlin

- DN Breeding season 2016
- DN Breeding season 2018



Scale 1:35,000 @ A3



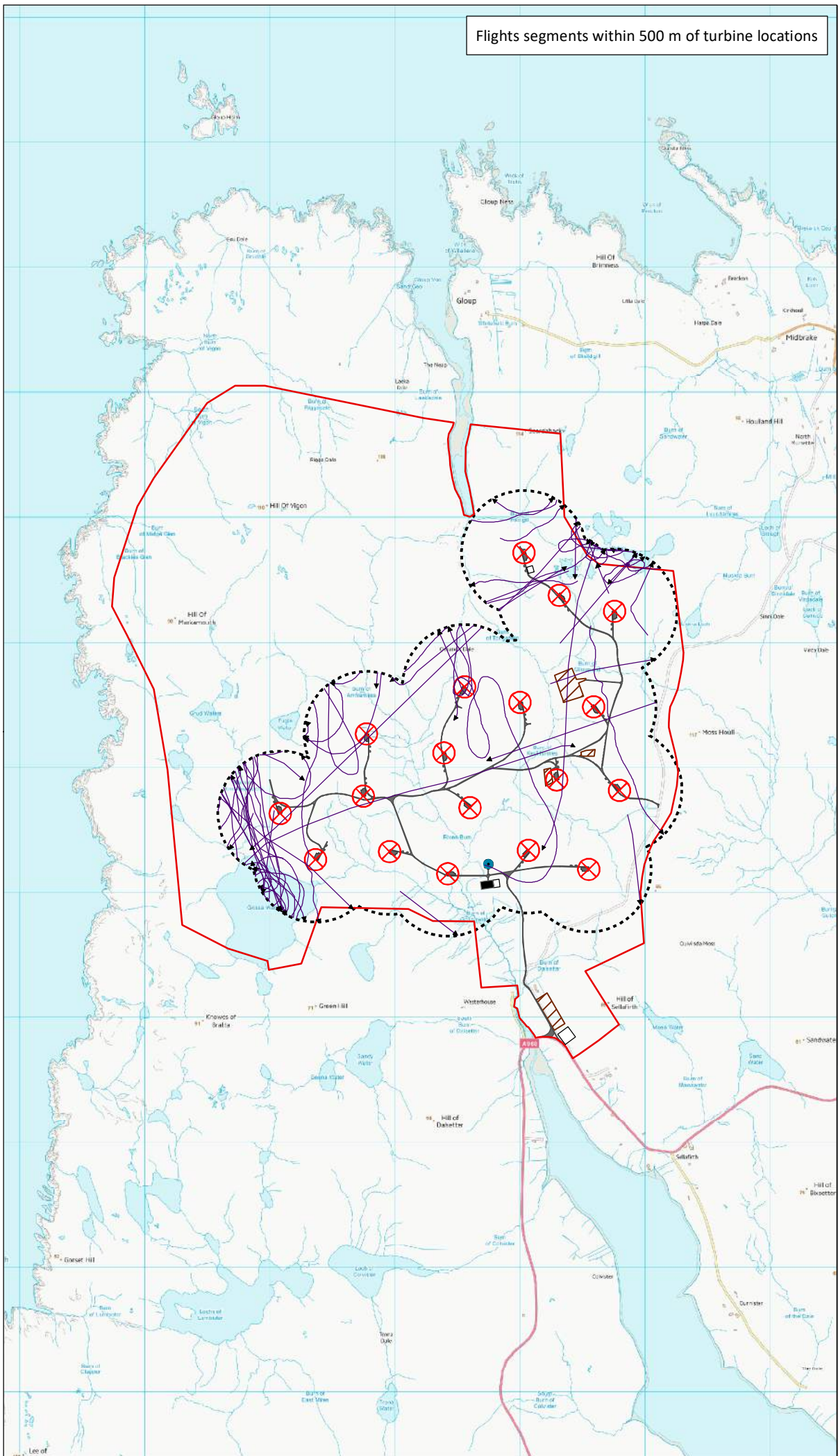
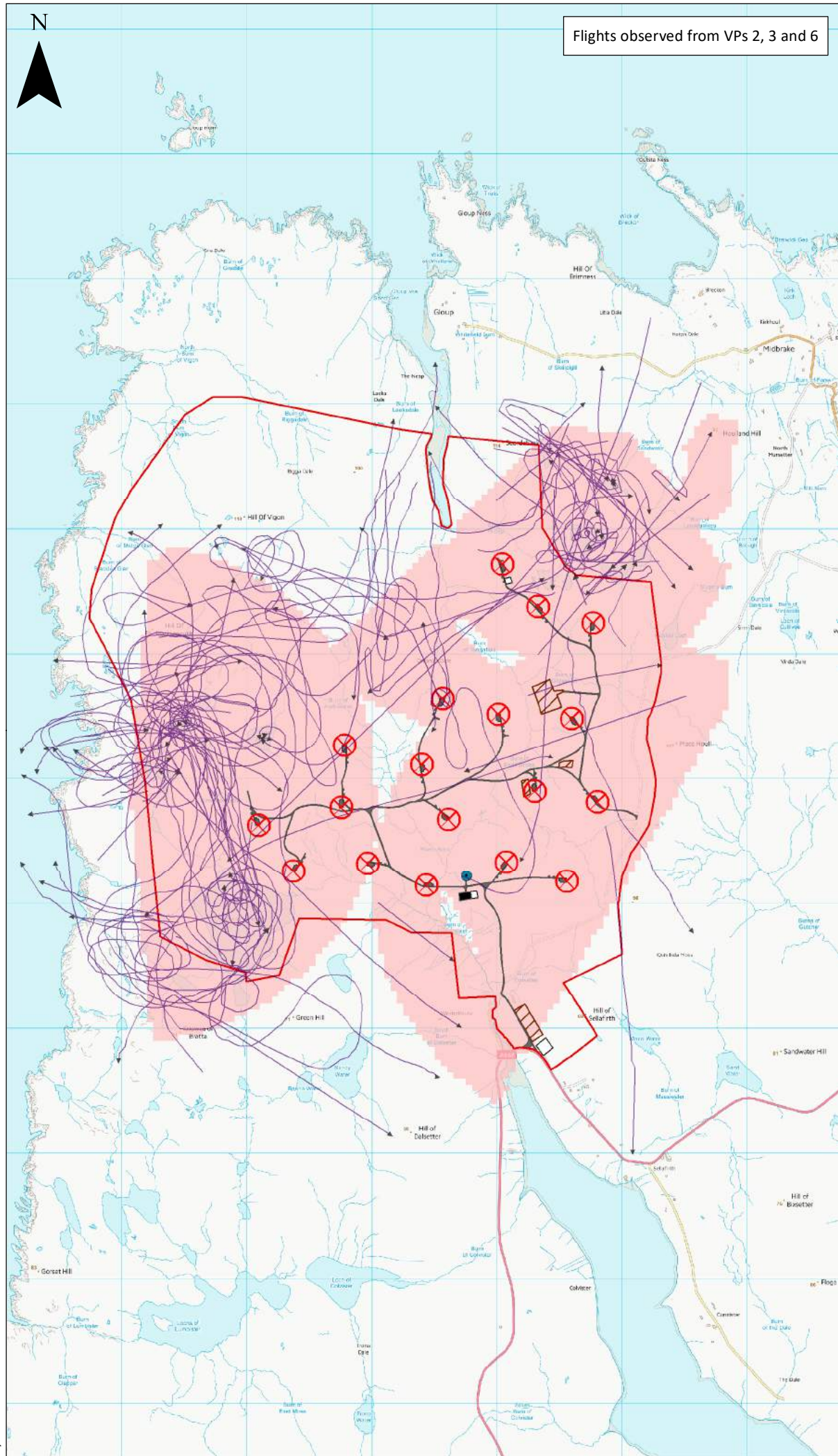
Energy Isles Wind Farm
Shadow Habitats Regulations Appraisal 2

Figure 3

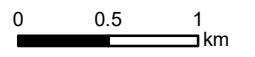
Dunlin territories

Date: 13/09/2021	Drawn by: GL	Checked by: RB	Version: V2
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Project Number: 11075



- KEY**
- Site Boundary
 - ⊗ Turbine locations
 - VP Viewsheds
 - 500 m radius from turbine locations
- Infrastructure**
- Met mast
 - Substation
 - Site compound
 - Access track and hardstanding
 - Borrow pits
- Red-throated diver**
- Flights at collision risk height



Scale 1:42,000 @ A3



Energy Isles Wind Farm
Shadow Habitats Regulations Appraisal 2

Figure 4

Red-Throated Diver flights

Date: 13-Sep-21	Drawn by: GL	Checked by: RB	Version: V2
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Appendix 2: Summaries of Relevant Policy, Legislation and Other Instruments

9.1 This section briefly summarises the legislation, policy and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

Scottish Planning Policy

9.2 The revised and updated Scottish Planning Policy (SPP) was adopted by the Scottish Government in 2014. The SPP sets out planning policies including those that relate to the protection of biodiversity. A summary of key policies within the SPP that relate to biodiversity are set out below.

9.3 The SPP introduces a presumption in favour of development that contributes to sustainable development. This means that policies and decisions should be guided by a number of principles that are set out within the SPP, and these include the need to protect, enhance and promote access to natural heritage, including green infrastructure, landscape and the wider environment (summarised in Paragraphs 28 and 29).

9.4 In Paragraph 195, the SPP notes that planning authorities, and all public bodies, have a duty under the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity. This duty must be reflected in development plans and development management decisions. They also have a duty under the Water Environment and Water Services (Scotland) Act 2003 to protect and improve Scotland's water environment.

9.5 International, national and locally designated areas and sites as outlined in the SPP (Paragraph 196) should be identified and afforded the appropriate level of protection in development plans.

9.6 Paragraph 200 relates to the sensitivity of wild land and states that plans should identify and safeguard the character of areas of wild land as identified on the 2014 SNH map of wild land areas. Paragraph 215 states that development may be appropriate in wild land in some circumstances; significant effects would need to be substantially overcome by siting, design or other mitigation.

9.7 Development management decisions should take account of potential effects on landscapes, the natural and water environment, including cumulative effects (Paragraph 202). Developers should seek to minimise adverse impacts through careful planning and design, considering the services which the natural environment is providing and maximising the potential for enhancement.

9.8 Planning permission should be refused where the nature or scale of proposed development would have an unacceptable impact on the natural environment. Direct or indirect effects on statutorily protected sites will be an important consideration, but designation does not impose an automatic prohibition on development (Paragraph 203).

9.9 Paragraph 207 and the need for "appropriate assessment" for any development plan or proposal likely to have a significant effect on Natura 2000 sites (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)).

9.10 The presence (or potential presence) of a legally protected species is an important consideration in decisions on planning applications (Paragraph 214). The level of protection afforded by legislation must be factored into the planning and design of development and any impacts must be fully considered prior to the determination of an application.

9.11 Ancient semi-natural woodland is an irreplaceable resource and, along with other woodlands, hedgerows and individual trees, should be protected from adverse impacts resulting from development (Paragraph 216).

Scottish wildlife legislation

9.12 In Scotland wildlife is afforded protection via a range of legal instruments. The key Acts and Regulations, which have been taken into account throughout this assessment, are as follows:

- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)¹³
- Wildlife and Countryside Act 1981 (as amended)
- Nature Conservation (Scotland) Act 2004 (as amended)
- The Protection of Badgers Act 1992

Protected species - Wildlife and Countryside Act 1981 (as amended in Scotland).

- 9.13 Protected animals are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended in Scotland), (all EPS are also protected under the 1981 Act). In summary, this legislation makes it an offence to intentionally or recklessly:
- Kill, injure or take any wild animal listed on Schedule 5
 - Damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection or to disturb such an animal when it is occupying a structure or place for that purpose.
- 9.14 All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended in Scotland) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, it is an offence to disturb any wild bird listed on Schedule 1 of the act whilst it is building a nest or is in, on, or near a nest containing eggs or young, or whilst lekking; or to disturb the dependent young of any wild bird listed on Schedule 1.

Competent authorities

- 9.15 Under Regulation 7 of the Conservation of Habitats and Species Regulations 2017 (as amended) a “competent authority” includes “any Minister of the Crown..., government department, statutory undertaker, public body of any description or person holding a public office.
- 9.16 In accordance with Regulation 9, “a competent authority must exercise their functions which are relevant to nature conservation, including marine conservation, so as to secure compliance with the requirements of the [Habitats and Birds] Directives. This means for instance that when considering development proposals a competent authority should consider whether EPS or European Protected Sites are to be affected by those works and, if so, must show that they have given consideration as to whether derogation requirements can be met.

Birds

- 9.17 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.
- 9.18 The Conservation of Habitats and Species Regulations 2017 (as amended) places duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of wild birds (2009/147/EC, ‘Birds Directive’¹⁴) (Regulation 10 (3)) requires that the objective is the ‘preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive...’ Regulation 10 (7) states: ‘In considering which measures may be appropriate for the purpose of security or contributing to the objective in [Regulation 10 (3)] Paragraph 3, appropriate account must be taken of economic and recreational requirements’.

¹³ In so far as they apply to Scotland, see Regulation 2 of 2017 Regulations for provisions relevant to Scotland.

¹⁴ 2009/147/EC Birds Directive (30 November 2009. European Parliament and the Council of the European Union.

- 9.19 In relation to the duties placed on competent authorities under the 2017 Regulations, Regulation 10 (8) states: 'So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).'