Berwick Bank Onshore Transmission Infrastructure

Report to Inform Appropriate Assessment

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1. Introduction

1.1 Overview

ITPEnergised was appointed by the Applicant to undertake a Report to Inform Appropriate Assessment (RIAA) in relation to the onshore transmission works (OnTW) (the "Proposed Development") associated with the Berwick Bank offshore wind farm. The nearest boundary of the Proposed Development is located just under 5 km southeast of the East Lothian town of Dunbar (central British National Grid Reference: NT 743 741). The RIAA, which is based on desk study data and bird surveys undertaken in 2020 - 2021, was commissioned following a Habitats Regulations Appraisal (HRA) screening consultation undertaken in late 2021 with East Lothian Council (ELC) and NatureScot (NS) (summarised within Annex A and full report provided within Annex B).

Please note that this document relates only to the impacts of the onshore considerations associated with the onshore infrastructure located landward of Mean Low Wate Springs (MLWS), which includes the onshore cable route, onshore substation and associated infrastructure which are described in Section 1.2 below. For completeness this includes results from studies in the intertidal area (between MLWS and Mean High Water Springs (MHWS) completed as part of the offshore works, and considers effects of the onshore works on the intertidal area.

1.1.1 Purpose of this Document

Given the potential for connectivity between the Proposed Development and four Special Protection Areas (SPAs) of which one is also a Ramsar site, there is a potential for activities associated with the Proposed Development's construction and operation to result in adverse effects on the qualifying interests and conservation objectives of specific qualifying features. Consequently, an HRA screening exercise was undertaken in September and October 2021 which, upon consultation with NS and ELC, determined that an RIAA is considered necessary to identify the nature, extent and significance of any adverse effects on a number of specific SPA qualifying and assemblage species and, if confirmed, whether these are likely to impact the integrity of the designation.

This RIAA was undertaken in relation to specific receptors due to the Site's proximity to the following designated sites:

- the Firth of Forth SPA/Ramsar;
- Outer Firth of Forth and St Andrews Bay Complex SPA;
- St. Abb's Head to Fast Castle SPA; and
- Forth Islands SPA.

The HRA includes consideration of the results of a Breeding Bird Survey (BBS), Wintering bird survey (WBS) and Intertidal Study (IS). The BBS Study Area (Site plus 500 m), WBS Study Area (Site plus 250 m) and ornithology desk study areas are shown in Onshore EIA - Volume 2, Figure 8.1. and 8.2. The IS study area is shown in Offshore EIA – Volume 2, Chapter 11, Offshore and Intertidal Ornithology and consisted of surveys completed for the two proposed landfalls considered at the time of survey. As the northern landfall location was chosen only survey results recorded in the section around the northern landfall are included in this document. The BBS Study Area (Site plus 500 m), WBS Study Area and IS Study Areas are shown Figure 1.

The location of the application boundary (i.e., the "Site") and the Proposed Development layout are shown on Figures 1 and locations of designated sites outlined in Figure 2.

The planning application boundary for the Proposed Development extends to the Mean Low Water Springs (MLWS). The infrastructure to be located between the Mean High Water Springs (MHWS) and MLWS consists of cables to be installed via trenchless technology (i.e. horizontal directional drilling (HDD)). Impacts associated with this infrastructure have been assessed in the Offshore EIA Report (Volume 2, Chapter 11,

Offshore and Intertidal Ornithology), although given the commitment to use trenchless technology no likely significant effects have been predicted.

ITPEnergised has been commissioned by the Applicant to undertake the RIAA, as part of the HRA process, to inform the appropriate assessment which will be undertaken by ELC as the Competent Authority (CA) in determining the Proposed Development application.

1.2 The Proposed Development

The Proposed Development comprises the onshore elements of the Berwick Bank Wind Farm Project, and consists of the following:

- a new onshore substation;
- one landfall location;
- onshore cables within a cable corridor between the landfall and the new onshore substation, and between the new onshore substation and the Scottish Power Energy Networks (SPEN) Branxton substation; and
- associated ancillary infrastructure.

The lifetime of the Proposed Development is anticipated to be 35 years from the commencement of operation to commencement of decommissioning.

Landfall is planned to be made at Skateraw, located north-west of Torness Power Station and Skateraw harbour. The onshore cable corridor connects the new onshore substation, located north-east of Innerwick, with landfall and with the SPEN Branxton substation to the south-east (See Onshore EIA - Volume 2, Figure 8.1).

2. Legislative Background

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora ("The Habitats Directive"), as it has been given effect in UK domestic law, provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species through the establishment and conservation of an EU-wide network of sites. This network, formerly known as Natura 2000 and now termed the National Site Network in the UK, and is an ecological network of special areas of importance for nature conservation, composed of sites hosting rare and vulnerable habitats and species. This network is designed to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.

The UK has designated a number of sites of nature conservation importance which form part of the National Site Network. National Site Network sites relating to birds as qualifying features comprise Special Protected Areas (SPAs), while other non-avian species and habitats are designated as Special Areas of Conservation (SACs). In addition, as clarified in Policy 4 of the National Planning Framework 4 (NPF4), wetlands of international importance designated under the Ramsar Convention (Ramsar site wetlands) are also treated as designated National Site Network (referred to as Natura 2000 Sites in SPP) and are therefore also considered in HRAs (Scottish Government, 2023).

The procedures that must be followed when considering developments affecting National Site Network Sites are set out in Article 6 of the Habitats Directive. In Scotland, this process is implemented through the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) ("The Habitats Regulations").

Habitats Directive Article 6(3) sets out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. Although the UK has left the EU, this guidance remains in force. The methodology followed in this report to inform the Article 6 assessments has had regard to the following guidance and legislation:

- Guidance:
  - SNH (2018). Natura sites and the Habitats Regulations: How to consider proposals affecting SACs and SPAs in Scotland. The essential quick guide;
  - NatureScot (2022). Legislative Requirements for European Sites; and
  - EU Exit: habitats regulations in Scotland (2020).
- Legislation:
  - Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (also known as the 'Habitats Directive') (as amended);
  - Council Directive 2009/147/EC on the conservation of wild birds, codified version, (also known as the 'Birds Directive') (as amended); and
  - Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).

3. Overview of Scoping and Screening

3.1 Scoping Opinion

The scoping and screening process for the RIAA is summarised in Table 1 below and described in detail in the following sections.

Table 1: Screening and Scoping Summary

Date	Who	Action
1st October 2020	ELC	Outline the fact that the Site could impact on: ➢ Firth of Forth SPA; ➢ St Abb's Head to Fast Castle SPA; and ➢ Outer Firth of Forth and St Andrews Bay Complex SPA. And the potential requirement for HRA.
10th August 2021	ITPEnergised	Undertake HRA Screening and Issue Report to ELC and NS. The above three protected sites are screened in including the following species:- Firth of Forth SPA: Wintering pink-footed goose.

Date	Who	Action
		Outer Firth of Forth and St Andrews Bay Complex SPA: Breeding and wintering herring gull, wintering black-headed gull, wintering common gull and wintering eider. All SACs and other SPAs were screened out.
7th October 2021	ELC, NS, ITPEnergised	Following a review of the HRA Screening Report and meeting, ELC approve the results of the HRA Screening Report but outline the requirement for the additional sites / species to be considered. Firth of Forth SPA: Wintering Golden plover. St Abb's Head to Fast Castle SPA: Breeding herring gull. Forth Island SPA: Breeding herring gull.
1st February 2022	ITPEnergised	Completed RIAA to include following protected sites and species: Firth of Forth: ➢ Wintering pink-footed goose; and ➢ Wintering Golden plover St Abb's Head to Fast Castle SPA: ➢ Breeding herring gull. Outer Firth of Forth and St Andrews Bay Complex SPA: ➢ Breeding and wintering herring gull; ➢ Wintering black-headed gull; ➢ Wintering common gull; and ➢ Wintering eider.

ELC issued a Scoping Opinion for the Proposed Development on 1st October 2020. In their response within the Scoping Opinion, NatureScot outlined the following:

"Information to support Habitat Regulation Appraisal has not been considered. NatureScot advise that this proposal could affect the European sites listed below. Further information about these sites, and the special features they are designated to protect, can be found on the NatureScot SiteLink website (http://gateway.snh.gov.uk/sitelink/index.jsp) [1]

- *Firth of Forth SPA*
- *St Abb's Head to Fast Castle SPA*
- *Outer Firth of Forth and St Andrews Bay Complex SPA*

The status of these sites means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") or, for reserved matters the Conservation of Habitats and Species Regulations 2010 as amended apply. Consequently, the competent authority (East Lothian Council)

[1] Since response received, the updated link is https://sitelink.nature.scot/map

is required to consider the effect of the proposal on these sites before it can be consented. See NatureScot's guidance note Legislative Requirements for European Sites [2] for a summary of requirements.

The above sites may also be notified as Sites of Special Scientific Interest (SSSI) and/ or Ramsar sites. However, any issues raised in relation to these designations are fully addressed as part of the following consideration of the respective European sites.

HRA Stage 1 – is the proposal connected with conservation management of the European sites?

No – this proposal is not connected to conservation management of any European Site.

HRA Stage 2 – is the proposal 'likely to have significant effects' upon the European sites?

In plain English this asks whether there is any connectivity between the proposals and the European sites. The Scoping Report identifies (Table 8.1) the first two of the above list of European sites as being within the 10km Search Area, presumably to then be considered in the EIA Report. However it then goes on to scope the HRA process out of the EIA Report (Table 8.3). The Report does not make it clear whether this signifies that HRA will be considered in a separate supporting document, or if European sites are being scoped out of assessment altogether.

NatureScot advise that, having identified European sites as possible receptors, the HRA process does apply. Any forthcoming planning application should be supported by HRA or clear rationale as to why it is not required.

Firth of Forth Special Protection Area (SPA) and St Abb's Head to Fast Castle SPA: - Work that was previously carried out as part of the Neart na Gaoithe onshore transmission works planning application made a clear argument that Thorntonloch beach was of very limited value to birds and was not functionally linked to either Special Protection Area. That work may be applicable to the current proposal, however it did not include the Skateraw Harbour area, and so it is likely that some further assessment of that area is needed. There could potentially be impacts to St Abb's Head to Fast Castle SPA through sediment and pollution run-off though this should be controllable through standard mitigation measures.

Outer Firth of Forth and St Andrews Bay Complex pSPA: - This is a marine SPA and the impact of the offshore works may need more consideration. However, as there is connectivity to this site, habitat regulation appraisal will be required in order for any planning application for the onshore works to be determined.

HRA Stage 3 – will the proposal have adverse effects on the integrity of the European sites?

This stage of assessment may or may not be required depending on the conclusion of stage 2.

The Habitat Regulation Appraisal Appropriate Assessment of the East Lothian Local Plan is available here: https://www.eastlothian.gov.uk/downloads/file/27700/habitats_regulations_appraisal_-_ldp_2018 .

This document identified that "A study of existing visitor numbers and disturbance arising from these should be initiated. This information should be used to identify areas of coast where measures are required to reduce disturbance, such as through introduction of barriers, fences, ditches, or planting." This study, which would add to understanding of recreational pressures at this site, has not yet been carried out. Both Thorntonloch and Skateraw are used by people for recreation. It is possible that development activity that restricts access to these areas, or makes them less attractive for recreational use, could displace recreational activity to the coast at the Firth of Forth SPA. In the absence of the study, or information about recreational use of these areas, whether or not this is a potential issue is unclear.

Marine mammals including seals and porpoise have been observed along this coastline, but it is not a known haul out site for the former, therefore the intention to include impacts on marine mammals in the offshore EIAR is supported.

[2] https://www.nature.scot/doc/legislative-requirements-european-sites

Details of designated sites can be found at SNH's website http://gateway.snh.gov.uk/sitelink/, and of legislative requirements at http://www.snh.gov.uk/docs/A423286.pdf."

3.2 Overview of HRA Screening

A summary of the HRA screening report can be found in Annex A, with the full report provided in Annex B. Screening was conducted on a receptor pressure basis, where potential pressure pathways of relevance to each qualifying feature were screened. Pathways are considered using professional judgement based on the Proposed Development, including any aspects which may, in addition to their primary purpose, act to mitigate potential effects on European sites (such as standard pollution prevention controls).

Where an interaction could not be ruled out and is likely to result in Likely Significant Effect (LSE), or where LSE could not be ruled out, the site and its qualifying feature(s) were screened into Stage 2: Appropriate Assessment.

The following potential pressure pathways have been identified which may lead to adverse impacts on the SPA qualifying feature, with specific details presented in Table 2:

- Accidental pollution/contamination;
- Introduction/spread of Invasive Non-Native Species (INNS);
- Disturbance/displacement; and
- Loss/change of habitat.

Table 2: Potential pressure pathways for onshore Annex I bird species

Project Phase	Effect	Justification
Construction, operation and maintenance and decommissioning	Accidental pollution	During all phases there is a risk of accidental pollution from construction, operation and maintenance and decommissioning activities. Pollution incidents may impact birds through contamination. This could adversely affect breeding behaviour and success, and in some rare cases be fatal. However, pollution events are likely to be rare and the associated effects would be highly localised and small scale. As such, it is considered there is **no potential LSE** from this pressure.
	Introduction / spread of INNS	There is potential for the introduction or spread of INNS within the proposed footprint of the works. However, any existing stands (i.e. sections or areas) of INNS will be identified during pre-construction surveys and appropriate management/ protection measures will be implemented as per National legislation. As such, it is considered there is **no potential LSE** from this pressure.
	Disturbance / displacement	Birds may experience disturbance as a result of the construction, operation, maintenance and decommissioning phases. This may cause displacement or avoidance of the area surrounding the construction works and infrastructure.
	Habitat loss	Any habitat loss caused by the Proposed Development activities may lead to adverse impacts on ornithological populations that use the area as foraging grounds. Habitat loss may occur due to changing/recovering habitats as a result of ground disturbance following cable laying and associated infrastructure/buildings. The

Project Phase	Effect	Justification
		direct footprint of these objects/activities will be very small relative to the overall habitat available, all of which are common habitats (such as grassland or arable fields) used by species to forage and roost, and extend both north and south in the wider environs. Given the lack of key habitat to local birds being lost it is considered that there is **no potential LSE** from this pressure.

3.2.1 Summary of Potential Pressure Pathways

In summary, the only pressure pathway considered with respect to qualifying features of SPA designations with potential connectivity is:

- Disturbance / displacement.

In this case, the only pressure pathway is considered to be disturbance/displacement and given the nature of the Proposed Development potential pressure associated with operation and maintenance (O&M) activities is thought to be significantly less (and of a shorter duration) than that presented by the construction phase and on a scale which fits within existing patterns of disturbance pressures from farming, recreation and other human activities in the area such as the busy roads, East Coast Main Line and industrial works at Torness Power Station and the cement works. Activities already present in the intertidal areas includes dog walkers and beach goes including surfers, industrial and agricultural areas of the Site will have frequent activity of large vehicles such as tractors, combine harvesters and lorries and vans while the main roads and railways will have regular usage of fast moving vehicles and trains.

Cable decommissioning will be decided toward the end of the project lifetime. The preferred option from a technical and environmental perspective is for the cable to be left *in situ* as far as is possible. If sections of the cable are needing to be removed, then any LSE are considered to be of a similar nature as during construction and likely to be of a shorter duration and cover the same or smaller area.

As such, LSE are primarily considered in terms of construction effects unless otherwise stated.

3.3 Screened In Designated Sites

In their guidance to assess the bird connectivity to SPA's, NatureScot outline a number of distances for both breeding and wintering bird species with the longest core range being for greylag and pink-footed goose at up to 20 km (SNH, 2016) and therefore this was the initial distance used to consider screening in and out SPA's. In terms of terrestrial ecology and habitats the search area is generally considered to be the distances covering a river catchment and is set at between 2-5 km with the larger 5 km used for screening in and out SAC's.

A total of four SPA designations are present within the search area, one of which is also designated as a Ramsar site. The names and distances to these protected sites is summarised in Table 3 and shown in Figure 2 and a detailed description of the site and the qualifying features for each protected site outlined in Sections 5 to 8 below.

Table 3: European Protected Sites Screened into the RIAA

Site Name	Designation	Distance from Site boundary
Outer Firth of Forth and St Andrews Bay Complex	SPA	Directly east
Firth of Forth	SPA/Ramsar	5.9 km northwest
St Abb's Castle to Fast Head	SPA	6.9 km southeast
Forth Islands	SPA	18 km northwest

No SAC is present within 5 km of the Site. Three SACs were identified between 5 km and 10 km of the Site, namely St Abb's Castle to Fast Head (designated for sea-cliff habitats), Berwickshire and North Northumberland Coast (designated for habitats and grey seal (*Halichoerus grypus*) and River Tweed (designated otter (*Lutra lutra)*, Atlantic salmon (*Salmo salar)*, river lamprey (*Lampetra fluviatilis*), brook lamprey (*Lampetra planeri*) and sea lamprey (*Petromyzon marinus*). Given their distance from the Site there are no potential pressure pathways connecting their qualifying features with the Proposed Development. The only potential pathway would be to the mobile grey seal. However, there are no known haul sites for grey seal around the Site.

As such, and approved by ELC (Annex A), as no impacts are predicted to occur on any SAC's, they are not considered any further within this document.

3.4 Species Screened into the Assessment

Screening has been completed with respect to the qualifying features of the SPAs within 20 km of the onshore cabling route between the landfall point, substation and the grid connection (as listed in Table 3) to determine which of the qualifying features required further consideration as part of the HRA (requiring further assessment as part of the RIAA). Following the HRA screening report being considered by ELC and NS, all the screened in species were agreed (as detailed in Annex A: Table 4).

The HRA Screening results were reviewed and discussed with ELC and NS. They responded (October 2021) as follows:

"*I am largely happy with the proposed scope of the HRA. I note the comments from the NatureScot Officer and agree with NatureScot's recommendation that Golden Plover (Firth of Forth SPA), Herring Gull (St Abb's Head SPA) and Herring Gull (Forth Islands SPA) are scoped in*."

Therefore, golden plover (*Pluvialis apricaria*) (Firth of Forth SPA), herring gull (*Larus argentatus*) (St Abb's Head to Fast Castle SPA) and herring gull (Forth Islands SPA) were screened in to the RIAA (this assessment).

In summary, the species, and respective designated sites, that are screened into this assessment are presented in Table 4 below.

Table 4: SPA Qualifying Species Screened into the RIAA

Designated Site	Species Screened in to Assessment
Outer Firth of Forth and St Andrews Bay Complex SPA	- Eider (non-breeding); - Herring gull (breeding and non-breeding*); - Black-headed gull (non-breeding)*; and - Common gull (non-breeding)*.
Firth of Forth SPA	- Pink-footed goose (non-breeding); and - Golden plover (non-breeding).
St Abb's Head to Fast Castle SPA	- Herring gull (breeding)*
Forth Islands SPA	- Herring gull (breeding)*

** Denotes a qualifying feature that is an assemblage feature only.*

4. Onshore Field Surveys

In order to adequately assess the baseline conditions for birds, the following field surveys were conducted with respect to the onshore cable route and included for both the Northern (which was selected) and Southern landfall (which has subsequently been removed from consideration[3]) options:

- Breeding Bird Survey (see Onshore EIA - Volume 4, Appendix 8.1);
- Wintering (non-breeding) Bird Survey (see Onshore EIA - Volume 4, Appendix 8.2); and
- Inter-tidal surveys (Offshore EIA - Volume 2, Chapter 11, Offshore and Intertidal Ornithology).

Details of the specific methods used, and the results of each survey can be found in the respective Technical Appendix. Further details on the desk study and the records found can be obtained from Technical Appendix 7.1.

Surveys for wintering birds were undertaken in the 2020/2021 winter period and the breeding bird survey was completed in 2020 in relation to the onshore cable corridor and associated infrastructure.

4.1 External Data Consultation

As part of the desk study to inform the baseline conditions, an external data consultation was undertaken in which the regional biological records centre, The Wildlife Information Centre (TWIC), were consulted on any historical data of relevance they may hold. This included for bird records from the following organisations:

- British Trust for Ornithology (BTO) – including records from the BTO, Joint Nature Conservation Committee (JNCC) and the Royal Society for the Protection of Birds (RSPB) partnership;
- East Lothian Council Ranger Service records;
- Scottish Ornithologists' Club - Borders records (2010-2019);
- Scottish Ornithologists' Club - Lothians Tetrad Bird Atlas 2007-13 (winter records);
- Scottish Ornithologists' Club - Lothians Tetrad Bird Atlas 2008-13 (breeding records); and
- The British Association for Shooting and Conservation - UK casual records from BASC members.

Although the dataset was comprehensive, only records from the last ten years (i.e. those from 2011) have been considered relevant as part of this assessment.

The details of the consultation and the data obtained can be found in Onshore EIA – Volume 4, Appendix 7.1.

5. Outer Firth of Forth and St Andrews Bay Complex SPA

5.1 Designated Site Description

The Outer Firth of Forth and St Andrews Bay Complex SPA is located directly east of the Site and is a large estuarine and marine designation on the south-eastern coast of Scotland, consisting of the two closely adjacent Firths of Forth and Tay and was first designated on 3rd December 2020 (NatureScot, 2022).

In the mid Firth of Forth a belt of mud-rich sediments lies between areas of sandy gravels and shell material on either side along the shore. As the estuary widens towards the outer firth, there are extensive areas of sandy and gravelly muds and fine sediments. In contrast St Andrews Bay contains clean sands and gravel

[3] Site selection details can be found in Volume 1, Chapter 4 of the Onshore EIA.

with only small areas of muddy sediments. Water depth is variable but large areas, in both the Firth of Forth and St Andrews Bay, are shallow and less than 10 m deep.

The area supports a wide variety of both pelagic and demersal fish, including sandeels, and crustaceans, molluscs and marine worms, all of which, especially sandeels, comprise the prey of the waterfowl species

5.2 Qualifying Interests

The Outer Firth of Forth and St Andrews Bay Complex SPA qualifies under Article 4.1 of the Habitat Regulations by regularly supporting a non-breeding population of European importance of the following Annex 1 species: red-throated diver (*Gavia stellata*) during the period 2001/02 to 2004/2005; Slavonian grebe (*Podiceps auritus*)during the period 2006/07 to 2010/11 (an average of 30 individuals; i.e., 2.7% of the Great Britain population; little gull (*Larus minutus*) during the period 2001/02 to 2004/05 (126 individuals; more than 50 individuals) and feeding common tern (*Sterna hirundo*) and Arctic tern (*Sterna paradisaea*) from the adjacent breeding colonies.

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory waterfowl species: Common eider (*Somateria mollissima*) and by regularly supporting in excess of 20,000 individual waterfowl including nationally important populations of the following species during the five year period 2001/02 to 2004/05: long tailed duck (*Clangula hyemalis*), common scoter, and during the period 2006/07-2010/11: velvet scoter (*Melanitta fusca*), common goldeneye (*Bucephala clangula*) and red-breasted merganser (*Mergus serrator*).

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the two following migratory species of seabird: foraging European shag (*Phalacrocorax aristotelis*) from the nearby colonies, and Northern gannet (*Morus bassanus*) during the period 1980-2006.

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual seabirds during the breeding season including nationally important populations of the following species during the period 1980-2006: Atlantic puffin (*Fratercula arctica*), black-legged kittiwake (*Rissa tridactyla*) Manx shearwater (*Puffinus puffinus*), common guillemot (*Uria aalge*) and herring gull.

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual seabirds during the non-breeding season including nationally important populations of the following species during the period 2003/04-2005/06: black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), and herring gull and, during the period 1980-2006: common guillemot, European shag, black-legged and razorbill (*Alca torda*).

5.2.1 Feature Summary

Feature Condition and Conservation Objectives

NatureScot is currently preparing conservation and management advice for all inshore marine protected areas and once finalised the advice documents will include the full Conservation Objectives for the SPA. This advice document is anticipated to incorporate site-specific supplementary advice and information to assist in the interpretation of the high-level Conservation Objectives. While site-specific advice and information is developed, the high-level Conservation Objectives will remain as draft (NatureScot & JNCC, 2021) but are unlikely to change. As such, in the absence of a final version of the advice document, the high-level Conservation Objectives remain pertinent to this appraisal.

"Draft Conservation Objectives:

- *1. To ensure that the qualifying features of the Outer Firth of Forth and St Andrews Bay Complex SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status;*

- *2. To ensure that the integrity of the Outer Firth of Forth and St Andrews Bay Complex SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:*
  - *2a. The populations of qualifying features are viable components of the site.*
  - *2b. The distributions of the qualifying features throughout the site are maintained by avoiding significant disturbance of the species.*
  - *2c. The supporting habitats and processes relevant to the qualifying features and their prey/food resources are maintained, or where appropriate restored, at the Outer Firth of Forth and St Andrews Bay Complex SPA."*

The HRA screening process summarised in Table 4 concluded four species, non-breeding eider, non-breeding black-headed gull, non-breeding common gull and breeding and non-breeding herring gull were scoped in and all other species were scoped out of the assessment (See Annex A: Table 5).

5.2.1.1 Eider (non-breeding)

Eider is a species of seaduck that is currently Amber Listed on the Bird of Conservation Concern 4 (Stanbury *et al.*, 2021) and lives along coastlines relying on shellfish, particularly mussels, for their main source of food. They are commonly found breeding along the Scottish and Northern English coasts but known to winter along most UK shores.

Given the relatively new status of the SPA designation, the condition of eider (non-breeding) as a qualifying feature has not been assessed, although for the purposes of this RIAA they are considered to be in a **Favourable** condition (as per NatureScot & JNCC, 2021), and no negative pressures have been identified.

5.2.1.2 Herring gull (breeding and non-breeding)

Herring gull are Red Listed on the Bird of Conservation Concern 4 (Stanbury *et al.*, 2021) and are also a Scottish Priority List species.

Despite the newly ratified status of the SPA, herring gull are considered to be in an **Unfavourable** condition at the Outer Firth of Forth and St Andrews Bay Complex SPA and therefore an overarching 'restore' objective is set for the site for this species.

5.2.1.3 Black-headed gull (non-breeding)

Black-headed gull are on the Scottish Priority list as well as being Amber Listed on the Birds of Conservation Concern 5 (Stanbury *et al.*, 2021).

Given the newly ratified status of the SPA, black-headed gull is considered to be in a **Favourable** condition at the Outer Firth of Forth and St Andrews Bay Complex SPA and therefore an overarching maintenance of that favourable status is expected.

5.2.1.4 Common gull (non-breeding)

Common gull are Amber-listed on the Birds of Conservation Concern 5 (Stanbury *et al.*, 2021).

Given the newly ratified status of the SPA, common gull are considered to be in a **Favourable** condition at the Outer Firth of Forth and St Andrews Bay Complex SPA and therefore an overarching maintenance of that favourable status is expected.

5.2.2 Assessment of Adverse Effects Alone

5.2.2.1 Eider (non-breeding)

There is no direct overlap between the onshore Project footprint and the SPA boundary (located at the Mean Low Water Springs (MLWS) line) at any point from making landfall at the transition joint bays and the remainder of the onshore cable route and associated infrastructure. The edge of the SPA lies 220 m away at its closest point from the nearest above ground infrastructure (i.e. landfall and the transition joint bays) and

works in the intertidal zone will be completed using trenchless technology and underground, meaning impacts on bird species are considered to be limited.

The wintering bird survey completed in 2020/2021 confirmed a single registration consisting of a raft of 36 birds at the north-western corner of the Site boundary (see Technical Appendix 8.2 and Figure TA8.2.3).

The intertidal surveys covered a strip 1,500 m wide opposite the coastline from the MHWS and opposite the two proposed landfall locations. The maximum disturbance distance impacting on bird species is considered to be at most 500 m out to see therefore only results from Sections A1 and B1 (See Figure 2) are considered relevant to this assessment.

A maximum of 69 individuals was recorded in February 2021 during intertidal surveys. The peak counts recorded during intertidal surveys total 151 individuals between September 2020 and March 2021 (taking highest values of in Sections A1 or B1 – See Figure 2 for locations and Offshore EIA – Volume 3, Appendix 11.2: Ornithology Inter-tidal Survey Report. Table 2) which equates to an average peak count of 22 birds per month, although it should be noted not all the intertidal records were recorded within 500 m of the landfall. Including all of the peak count records creating a worse scenario of 22 individuals that may be disturbed during construction activities this accounts for 0.1 % of the SPA population.

The desk study records confirmed a total of 120 registrations (totalling 1,047 birds) for eider in the last 10 years located within 5 km of the Site boundary. Of the 120 registrations returned, nine were located within the Site boundary and totalled 62 birds.

Disturbance/ Displacement

The nearest onshore site infrastructure comes to within 50 m of typical habitat for eider (at high tide) and works are predicted to be limited to a maximum of two winter seasons (See Table 5.2: of Onshore EIA – Volume 1, Chapter 5: Proposed Development Description), although it is considered significant disturbance will be limited to drilling activities and more likely to be limited to one winter season. Merkel *et al*. (2009) studied eider disturbance from boats in Greenland and found that, left undisturbed, they tended to avoid feeding at high tides, concentrating on foraging at the start and end of daylight hours. Although active disturbance from boats was found, analyses of feeding activity indicated that eiders in the WBS Study Area had the capacity to adapt to human disturbances, indicated by a change in feeding time allocation when disturbed (Merkel *et al*., 2009).

The wintering bird survey confirmed a single registration for eider and the intertidal survey identified groups of eider in all winter months close to the shoreline, along with the historical records returned from the desk study for this species shows eider do use the area close to the landfall but only in small numbers. If you take an average figure from the WBS and intertidal surveys it comprises nine and 22 birds respectively. These counts comprise creating a worse scenario of 22 individuals that may be disturbed during construction activities which equates to just 0.1 % of the SPA designation population (21,546). Given the fact that a maximum of only 0.1 % of the SPA could be impacted and the fact that disturbed birds are likely to simply swim further out to sea or along the coast, any disturbance on eider is considered to be insignificant.

Therefore, it is considered that there is **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding eider feature of the Outer Firth of Forth and St Andrews Bay Complex SPA from any pressure associated with disturbance / displacement**.

5.2.2.2 Herring gull (breeding and non-breeding)

There is no direct overlap between the Proposed Development and the SPA boundary (located at the MLWS line) at any point from making landfall at the transition joint bays and the remainder of the onshore cable route and associated infrastructure. The edge of the SPA lies 220 m away at its closest point from the nearest infrastructure (i.e. landfall and the transition joint bays).

The wintering bird survey and intertidal survey confirmed multiple registrations throughout the survey in the WBS Study Area and IS Study Areas A1 and B1 (See Figure 1) including within the Site boundary (see Onshore EIA – Volume 4, Appendix 8.2 and Appendix Figure 8.2.3). Although herring gull were recorded during the breeding bird survey, no breeding territories were identified within the BBS Study Area (See

Figure 1). The desk study identified a further 240 records within 5 km of the site between 2011-2021 of which 13 records, totalling 333 individuals, were recorded within the Site. The desk study records of herring gull are notably spread throughout the wider East Lothian region.

Disturbance/ Displacement

The onshore site infrastructure is all located within what could be classed as typical habitat for herring gull (both for breeding, along the foreshore coastal edges, and non-breeding life-cycle stages). The SNH and JNCC document providing advice to support management of the SPA (SNH & JNCC, 2016) outlines that, with respect to vessel movements and disturbance, although all species display some level of avoidance behaviour:

> *"All other qualifying species are considered to be either not sensitive (gulls) or have a low sensitivity to visual disturbance created by vessel movement."*

In addition, in relation to the harvesting of intertidal shellfish and bait as disturbance pressure to the SPA features, SNH & JNCC (2016) state:

> *"Red-throated diver, Slavonian grebe, common scoter, velvet scoter, red-breasted merganser are considered to have a medium sensitivity to visual disturbance.*
>
> *All other qualifying species are considered to have low sensitivity to visual disturbance associated with shellfish harvesting."*

The visual, human presence and vehicle-associated disturbance from the limited footprint of the scheme (primarily in the form of the undergrounding construction works associated with the cable route) is considered to be limited and short-term temporal. Furthermore, herring gull are regularly witnessed utilising the ground disturbance associated with field ploughing and other farming activities to forage on worms and other invertebrates brought to the surface during the process. As such, they are assumed to have not only habitualised to some disturbance but to make opportunistic use of such disturbance.

Therefore, it is considered that there is **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding and breeding herring gull feature of the Outer Firth of Forth and St Andrews Bay Complex SPA from any pressure associated with disturbance / displacement**.

5.2.2.3 Black-headed gull (non-breeding)

There is no direct overlap between the Proposed Development and the SPA boundary (located at the MHLS line) at any point from making landfall at the transition joint bays and the remainder of the onshore cable route and associated infrastructure. The edge of the SPA lies 220 m away at its closest point from the nearest infrastructure (i.e. landfall and the transition joint bays).

The wintering bird survey confirmed multiple registrations of black-headed gull throughout the WBS Study Area (see Figure 1) on all four survey visits and IS Study Areas A1 and B1 (see Figure 1), including within the Site boundary (see Onshore EIA – Volume 4, Appendix 8.2 and Appendix Figure 8.2.3). A total of 53 registrations were recorded, which included 402 birds. A group of approximately 600 individuals was noted offshore east of Torness Power Station during the first survey visit in October. The desk study identified a further 120 records within 5 km of the site between 2011-2021, of which 12 records, totalling 279 individuals, were recorded within the Site boundary. The desk study records of black-headed gull are notably spread throughout the wider area.

Disturbance/Displacement

The onshore site infrastructure is all located within what could be classed as typical habitat for black-headed gull. The SNH and JNCC document providing advice to support management of the SPA (SNH & JNCC, 2016), as outlined above for herring gull (see Section 5.2.2.2 above) outlines that, with respect to vessel movements

and other fishing activities, although all species display some level of avoidance behaviour, gulls exhibit a low level of sensitivity to such disturbance.

The visual, human presence and vehicle-associated disturbance from the limited footprint of the scheme (primarily in the form of the undergrounding construction works associated with the cable route) is considered to be limited and short-term temporal. Furthermore, black-headed gull is regularly witnessed utilising the ground disturbance associated with field ploughing and other farming activities to forage on worms and other invertebrates brought to the surface during the process. As such, they are assumed to have not only habitualised to some disturbance but to make opportunistic use of such disturbance.

Therefore, it is considered that there is **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding black-headed gull feature of the Outer Firth of Forth and St Andrews Bay Complex SPA from any pressure associated with disturbance / displacement**.

5.2.2.4 Common gull (non-breeding)

There is no direct overlap between the onshore Project footprint and the SPA boundary (located at the MLWS line) at any point from making landfall at the transition joint bays and the remainder of the onshore cable route and associated infrastructure. The edge of the SPA lies 220 m away at its closest point from the nearest infrastructure (i.e., landfall and the transition joint bays).

The wintering bird survey recorded common gull on two of the four survey visits (visit 2, December, and 3, January), totalling 43 birds with 13 registrations widespread across the WBS Study Area (see Onshore EIA – Volume 4, Appendix 8.2 and Appendix Figure 8.2.3). The desk study identified a further 83 records within 5km of the site between 2011-2021 of which 5 records, totalling 267 individuals, were recorded within the Site. The desk study records of common gull are notably spread throughout the wider East Lothian region.

Disturbance/Displacement

The onshore site infrastructure is all located within what could be classed as typical habitat for common gull. The SNH and JNCC document providing advice to support management of the SPA (SNH & JNCC, 2016), as referred to above for herring gull (see Section 5.2.2.2 above) outlines that, with respect to vessel movements and other fishing activities, although all species display some level of avoidance behaviour, gulls exhibit a low level of sensitivity to such disturbance.

The visual, human presence and vehicle-associated disturbance from the limited footprint of the scheme (primarily in the form of the undergrounding construction works associated with the cable route) is considered to be limited and short-term temporal. Furthermore, common gull is regularly witnessed utilising the ground disturbance associated with field ploughing and other farming activities to forage on worms and other invertebrates brought to the surface during the process. As such, gulls are assumed to have not only habitualised to some disturbance but to make opportunistic use of it.

Therefore, it is considered that there is **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding common gull feature of the Outer Firth of Forth and St Andrews Bay Complex SPA from any pressure associated with disturbance / displacement**.

5.2.3 Assessment of Adverse Effects In-combination

As part of the onshore EIA for the Proposed Development a Cumulative Effects Assessment (CEA) takes into account the effects associated with the Proposed Development together with other relevant plans, projects and activities. Cumulative effects are therefore the combined effect of the Proposed Development in combination with the effects from a number of different projects, on the same receptor or resource. Please see Volume 1, Chapter 2 of the Onshore EIA Report for detail on CEA methodology.

A total of three projects and plans have been selected as relevant to the CEA presented within the ornithology chapter (Onshore EIA – Volume 1, Chapter 8: Ornithology) are based upon the results of a screening exercise (see Onshore EIA – Volume 4, Appendix 2.4). this was further reduced to two following a further project being scoped out due to the distance involved.

A planning application for a cable route and sub-station which overlaps the site (SPEN Eastern Link Project, 22/00852/PPM & 22/00002/SGC) is in ongoing dialogue and breeding bird and wintering bird surveys were completed in 2021. The cable route and proposed sub-station location overlapped with the site which was covered by surveys for the Proposed Development. A similar range of species were recorded during the bird surveys and the EIA Report scoped out all designated sites and species bar wintering curlew, breeding peregrine falcon and breeding herring gull. The predicted impacts on all three receptors were concluded to be minor and not significant during construction, operation and cumulatively.

Another similar scheme is a (currently withdrawn) application for the construction of a 400 kilovolt (kV) gas insulated switchgear (GIS) substation and associated works (SPEN Branxton Grid Substation, 21/01569/PM). This works area which would overlap the current site but the planning application has not been submitted to date. The withdrawn EIA predicts no significant effects on bird species with basic mitigation outlined to fully offset both the breeding bird and wintering bird assemblages including herring gull, peregrine and curlew (SP Energy Networks, 2021).

In addition to the two projects outlined above the impacts of the Berwick Bank Wind Farm Offshore Proposed Development is also considered as part of the CEA. Eider, common gull, black-headed gull and herring gull were recorded during offshore surveys including the surveys completed as part of intertidal study. No significant impacts were predicted on these four species as part of the EIA Report for the offshore study and therefore there will be no significant impacts on these species with respect to disturbance or displacement from construction activities, as part of the CEA for the onshore works.

It is considered that there would be no contribution in terms of adverse effects on wintering eider, black-headed gull, common gull and breeding and wintering herring gull with any other development on the integrity of the Outer Firth of Forth and St Andrews Bay Complex SPA and its conservation objectives.

5.2.4 Summary

The potential pressure pathway identified in relation to non-breeding eider, herring gull, black-headed gull, common gull and breeding herring gull includes disturbance/displacement. The baseline assessment included wintering bird surveys in 2020/2021, as well as breeding bird surveys in 2020, and intertidal surveys in 2020/2021, to establish use of the onshore cable route and wider area by priority birds of conservation value. The baseline surveys were further complimented through consultation and purchasing of historical data from TWIC (which included records from the BTO and RSPB as well as other data sources).

Due to the lack of proximity and the proposed route taken by the onshore cable it is determined there will be **no adverse effect on integrity, having regard to the conservation objectives of the screened in features of the Firth of Forth and St Andrews Bay Complex SPA from the identified pressure associated with any effect resulting from the Project (alone or in combination)**.

6. Firth of Forth SPA

6.1 Designated Site Description

The Site is located south of the Firth of Forth SPA, 5.9 km north-west at its closest point. The Firth of Forth SPA is located on the east coast of Scotland and is a complex estuarine site extending 55 km and covering 6,313.72 ha from Alloa in the west to the East Lothian and Fife coasts, including intertidal flats, rocky shore, saltmarsh, lagoons and sand dune habitats, in the east (JNCC, 2001).

6.2 Qualifying Interests:

The Firth of Forth SPA qualifies under Article 4.1 of the Birds Directive for regularly supporting wintering populations of the Annex 1 species: red-throated diver, Slavonian grebe, golden plover and bar-tailed godwit (*Limosa lapponica*). The SPA also qualifies under Article 4.1 for regularly supporting populations of European importance of the Annex 1 species sandwich tern (*Sterna sandvicensis*) during the passage period.

The SPA further qualifies under Article 4.2 of the Birds Directive by regularly supporting populations of European importance of the wintering migratory species: pink-footed goose (*Anser brachyrhynchus*), shelduck (*Tadorna tadorna*), knot (*Calidris canutus*), redshank (*Tringa totanus*) and turnstone (*Arenaria interpres*). The SPA also qualifies under Article 4.2 for regularly supporting a wintering assemblage, in excess of 20,000 individual waterfowl, of European importance: a winter peak mean of 95,000 waterfowl, comprising 45,000 wildfowl and 50,000 waders including nationally important populations of the following species: scaup (*Aythya marila*);Slavonian grebe; golden plover; bar-tailed godwit; pink-footed; shelduck; knot; redshank); turnstone; great crested grebe (*Podiceps cristatus*); cormorant (*Phalacrocorax carbo*); red-throated diver (90 individuals); curlew (*Numenius arquata*); eider; long-tailed duck; common scoter (*Melanitta nigra*); velvet scoter; goldeneye (*Bucephala clangula*); red-breasted merganser (*Mergus serrator*); oystercatcher (*Haematopus ostralegus*); ringed plover (*Charadrius hiaticula*) ; grey plover (*Pluvialis squatarola*) and dunlin (*Calidris alpina*).

In the five-year winter period 1991/92 to 1995/96 the assemblage additionally included nationally important populations greater than 2,000 individuals of: mallard (*Anas platyrhynchos*); lapwing (*Vanellus vanellus*); and wigeon (*Anas penelope*).

6.2.1 Feature Summary

Feature Condition and Conservation Objectives

The Conservation Objectives of the Firth of Forth SPA are as follows:

- *"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*
- *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*."

The HRA screening process summarised in Table 4 concluded two species, non-breeding pink-footed goose and non-breeding golden plover, were scoped in and all other species were scoped out of the assessment (See Annex A: Table 5).

6.2.1.1 Pink-footed goose (non-breeding)

Pink-footed goose is currently an Amber-listed species on the Bird of Conservation Concern 5 (Stanbury *et al.*, 2021). This species does not breed in the UK, but large numbers congregate here for the winter season from their breeding grounds in the northern tundra (in Iceland, northern Norway and Greenland). They feed primarily in agricultural habitats, preferring stubble fields, managed grasslands and typical agricultural cereal and root crops (Mitchel & Hearn, 2004). Pink-footed goose will travel large distances (up to 20 km) from roosting sites to feed in fields (Mitchel, 2012).

The Pink-footed goose (non-breeding) feature condition of the SPA was last assessed in March 2015 and was identified as being of **Favourable Maintained** condition with no negative pressures having been identified.

6.2.1.2 Golden plover (non-breeding)

Golden plover is a species of wader that is currently Green Listed on the Bird of Conservation Concern 5 (Stanbury *et al.*, 2021), and so has experienced a relatively stable population over the previous 50 years although it is listed on the Scottish Priority List. This species breeds in the upland moorland of the UK, but ventures to lower-level fields, farmland and shorelines to forage and over-winter in large flocks.

The golden plover (non-breeding) feature condition of the SPA was last assessed in March 2015 and was identified as being of **Unfavourable Declining** condition with no negative pressures having been identified.

6.2.2 Assessment of Adverse Effects Alone

The Firth of Forth SPA boundary is located 6.8 km northwest of the cable landfall point and transition joint bays (being the nearest onshore infrastructure).

6.2.2.1 Pink-footed goose (non-breeding)

The wintering bird survey recorded pink-footed goose on all four survey visits, totalling 51 registrations consisting of 4,139 individuals (see Onshore EIA – Volume 4, Appendix 8.2 and Appendix Figure 8.2.3). Two large groups of 1,250 and 640 individuals were recorded in the south-east of the Site during the first survey visit in October. Numbers of records and individuals were significantly higher on the first survey visit (31 registrations consisting of 3,146 birds) in comparison to visit 2 (5 registrations, 185 birds), 3 (5 registrations, 216 birds) and 4 (10 registrations, 592 birds), indicating that the higher numbers noted at this early stage of winter were of passage migrants on route to their roosting grounds.

Pink-footed goose were not recorded within the intertidal surveys. The desk study records confirmed 30 records (totalling 6,199 birds) for pink-footed goose in the last 10 years located within 5 km of the Site boundary. Of the 30 records returned, two were located within the Site boundary and totalled 530 birds.

Disturbance/ Displacement

The onshore site infrastructure is located within what is considered to be typical habitat for wintering pink-footed goose. Mitchel and Hearn (2004) found that pink-footed goose was some of the most sensitive goose species to disturbance with freedom from people (particularly shooting parties) being of higher importance than proximity to primary habitats, such as shoreline (Bell *et al.,* 1998). The geese associated with the Firth of Forth SPA are primarily recognised as utilising the Aberlady Bay roost site (Mitchel, 2014), as well as the Skinflats roost site in the upper Forth, with foraging areas ranging over most of central and western parts of East Lothian. Some foraging locations are noted in and around the estuary of the River Tyne (west of Dunbar), however this is towards the outer reaches of the full typical 20 km extent of pink-footed goose foraging from roost sites (Mitchel (2014), SNH (2016)) and is a further 10 km west of the nearest part of the Site boundary.

Although the wintering bird survey confirmed pink-footed goose registrations on all survey visits, the numbers recorded were significantly weighted to the first visit in October implying they were birds from the initial winter influx on passage to winter roosts elsewhere. Wilson *et al.* (2015) outlined that there is a high seasonal turnover of birds in Scotland, with many birds that spend the winter in England only passing through Scotland while in transit. Scotland therefore holds more pink-footed geese in the autumn than it does for most of the winter (Wilson *et al.*, 2015).

Although pink-footed goose is found to make use of the habitats within the Site and wider area, the predominant landscape use within the region consists of the same preferable habitats and so foraging resource is considered to be plentiful. Furthermore, given the distance from the nearest part of the Site boundary to the nearest roost location for the Firth of Forth SPA pink-footed goose population (i.e. about 25.7 km to the Aberlady Bay roost site) it is considered unlikely that the birds recorded here are of SPA provenance.

The total construction programme is anticipated to take 36 months, although this is associated with works progressing along the onshore cable length as the installation progresses (i.e. this does not equate to 36 months of construction occurring throughout the entire Site boundary) and so would be very localised. If, as a precautionary measure, it was assumed pink-footed goose found in and around the Site were of SPA provenance then the associated disturbance that may result from the construction works would be considered to be short term temporal. Also, with so much foraging habitat/resource located elsewhere within the Site and the wider landscape, any disturbance or displacement pressure would not be considered to be of significance to any geese found here.

Therefore, it is considered that there is **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding pink-footed goose feature of the Firth of Forth SPA from any pressure associated with disturbance / displacement**.

6.2.2.2 Golden plover (non-breeding)

Golden plover was recorded during all four wintering bird visits with a total of 15 registrations totalling 893 birds being recorded, of which five groups of over 100 were noted. The larger groups were associated with roosting individuals located in fields inland from the coast (see Onshore EIA – Volume 4 Appendix Figure 8.2.4). The closest registration to any proposed infrastructure was within 60 m, with the remaining registrations spread throughout suitable habitats of the wider Site.

Golden plover were not recorded within the intertidal surveys. The external desk study data returned a total of 21 records (consisting of 2,014 birds) within the last 10 years located within 5 km of the Site boundary, of which 8 registrations (1,216 birds) were noted within the Site boundary.

Although NatureScot publish long-established guidance on assessing connectivity with SPAs (SNH, 2016), for golden plover this guidance relates only to breeding birds rather than wintering. As a precaution, if the ranges presented for breeding golden plover are considered for wintering birds, then the core range would be 3 km, extending out to a maximum of 11 km (SNH, 2016), meaning that the Site would be within the outer 4.2 km of the maximum range.

Although golden plover is found to make use of the habitats within the Site and wider area, the predominant landscape use within the region consists of the same preferable habitats and so foraging resource is considered to be plentiful.

The total construction programme is anticipated to take 36 months, although this is associated with works progressing along the onshore cable length as the installation progresses (i.e., this does not equate to 36 months of construction occurring throughout the entire Site boundary) and so would be highly localised. If, as a precautionary measure, it was assumed that any golden plover found in and around the Site were of SPA provenance then the associated disturbance that may result from the construction works would be considered to be short term temporal. Also, with so much foraging habitat/resource located elsewhere within the Site and the wider landscape, any disturbance or displacement pressure would not be considered to be of significance to any birds found here.

Therefore, it is considered that there is **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding golden plover feature of the Firth of Forth SPA from any pressure associated with disturbance / displacement**.

6.2.3 Assessment of Adverse Effects In-combination

As discussed and described in Section 5.2.3, a total of two projects and the Berwick Bank Wind Farm Offshore Proposed Development are considered to the in-combination assessment.

The SPEN Eastern Link Project, SPEN Branxton Grid Substation did not predict any impacts on non-breeding populations of golden plover of pink-footed goose. The Berwick Bank Wind Farm Offshore Proposed Development did not record either species during surveys that were impacted by the proposed works and therefore no impacts were predicted on either species. No in-combination impacts are therefore predicted on either species from all three projects in addition to the Proposed Development.

It is considered that there would be no contribution in terms of adverse effects on wintering pink-footed geese or golden plover either in-combination with any other development on the integrity of the Firth of Forth SPA and its conservation objectives.

6.2.4 Summary

The potential pressure pathway identified in relation to non-breeding pink-footed goose and golden plover included disturbance/displacement. The baseline assessment included wintering bird surveys in 2020/2021 and intertidal surveys in 2020/2021 to establish use of the onshore cable route and wider area by priority birds of conservation value. Pink-footed goose and golden plover were both recorded during the wintering bird survey with multiple registrations. The baseline surveys were further complimented through consultation and purchasing of historical data from TWIC (which included records from the BTO and RSPB as well as other data sources).

Although it cannot be determined whether the golden plover and pink-footed goose recorded within the Site boundary (and nearby) may be of SPA provenance, following the precautionary principle it was assumed they were. Despite this, due to the route taken by the proposed onshore cable, the nature of the proposed works and the availability of suitable roosting and foraging habitat in the wider area, it is determined there will be **no adverse effect on integrity, having regard to the conservation objectives of the non-breeding pink-footed goose and golden plover as features of the Firth of Forth SPA from the identified pressure associated with any effect resulting from the Project (alone or in combination)**.

7. St Abb's Head to Fast Castle SPA

7.1 Site Description

St Abb's Head to Fast Castle SPA lies 6.9 km south-east of the Site and comprises an area of sea cliffs and coastal strip stretching over 10 km along the Berwickshire Coast north of St Abb's (JNCC, 2001). The boundary of the SPA overlaps with that of St Abb's Head to Fast Castle SSSI, and the seaward extension extends approximately 1 km into the marine environment to include the seabed, water column and surface.

7.2 Qualifying Interests:

N.B. All figures below relate to numbers at the time of classification except where amended by the 2001 SPA Review.

St Abb's Head to Fast Castle SPA qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual seabirds. The site regularly supports 79,560 seabirds including nationally important populations of the following species: razorbill; common guillemot; black-legged kittiwake; herring gull; and European shag. The HRA screening process summarised in Table 4 concluded a single species, breeding herring gull, was scoped in and all other species were scoped out of the assessment (See Annex A).

7.2.1 Feature Summary

Feature Condition and Conservation Objectives

The Conservation Objectives of the St Abb's Head to Fast Castle SPA are as follows:

- *"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*
- *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*."

The SPA overlaps with both the St Abb's Head to Fast Castle SAC and the Berwickshire and North Northumberland Coast SAC.

7.2.1.1 Herring gull (breeding)

Herring gull are Red Listed on the Bird of Conservation Concern 5 (Stanbury *et al.*, 2015) and are also a Scottish Priority List species.

The most recent condition assessment of breeding herring gull (as part of the overall assemblage qualifier) resulted in an assessed condition of **Unfavourable** at the At Abb's Head to Fast Castle SPA.

7.2.2 Assessment of Adverse Effects Alone

7.2.2.1 Herring gull (breeding)

There is no direct overlap between the onshore Project footprint and the SPA boundary. The edge of the SPA lies 8.7 km away at its closest point from the nearest infrastructure (i.e., onshore cable route at the proposed substation location).

Although herring gull were recorded during the breeding bird survey, no breeding territories were identified within the BBS Study Area. Intertidal surveys recorded herring gull in all months in the IS Study Areas A1 and B1 (see Figure 1). The desk study identified a further 240 records within 5 km of the site between 2011-2021 of which 13 records, totalling 333 individuals, were recorded within the Site. The desk study records of herring gull are notably spread throughout the wider East Lothian region

Disturbance/Displacement

The onshore site infrastructure is all located within what could be classed as typical habitat for herring gull. The SNH and JNCC document providing advice to support management of the Outer Firth of Forth and St Andrews Bay Complex SPA (SNH & JNCC, 2016), as referred to above (see Section 5.2.2.2), outlines that, with respect to vessel movements and other fishing activities, although all species display some level of avoidance behaviour, gulls exhibit a low level of sensitivity to such disturbance.

Visual, human presence and vehicle-associated disturbance from the limited footprint of the scheme (primarily in the form of the undergrounding construction works associated with the cable route) is considered to be limited and short-term temporal. Furthermore, herring gull are regularly witnessed utilising the ground disturbance associated with field ploughing and other farming activities to forage on worms and other invertebrates brought to the surface during the process. As such, they are assumed to have not only habitualised to some disturbance but to make opportunistic use of such disturbance.

Therefore, it is considered that there is **no likely adverse effect on integrity, having regard to the conservation objectives of the breeding herring gull feature of the St Abb's Head to Fast Castle SPA from any pressure associated with disturbance / displacement**.

7.2.3 Assessment of Adverse Effects In-Combination

As discussed and described in Section 5.2.3 a total of two projects and the Berwick Bank Wind Farm Offshore Proposed Development are considered to the in-combination assessment.

The SPEN Eastern Link Project and SPEN Branxton Grid Substation did not predict any significant impacts on any species. The assessment of the SPEN Eastern Link Project assessed the impacts on breeding herring gull as minor and not significant. The Berwick Bank Wind Farm Offshore Proposed Development did not predict any significant impacts on breeding herring gull as a result of disturbance or displacement during construction.

It is therefore considered that there would be no contribution in terms of adverse effects on breeding herring gull as a result of disturbance or displacement during construction either in-combination with any other development on the integrity of the St Abb's Head to Fast Castle SPA and its conservation objectives.

7.2.4 Summary

The potential pressure pathway identified in relation to breeding herring gull, as part of the overall assemblage of the St Abb's Head to Fast Castle SPA, included disturbance/displacement. The baseline assessment included breeding bird surveys in 2020 (as well as wintering bird surveys in 2020/2021 and intertidal surveys in 2020/2021) to establish use of the onshore cable route and wider area by priority birds of conservation value. Herring gull were not recorded as a breeding species during the breeding bird survey but was regularly record as a foraging or roosting species during all surveys. The baseline surveys were further complimented through consultation and purchasing of historical data from TWIC (which included records from the BTO and RSPB as well as other data sources).

Due to the lack of proximity and the proposed route taken by the onshore cable it is determined there will be **no adverse effect on integrity, having regard to the conservation objectives of the breeding herring gull feature of the St Abb's Head to Fast Castle SPA from the identified pressure associated with any effect resulting from the Project (alone or in combination)**.

8. Forth Islands SPA

8.1 Site Description

Forth Islands SPA consists of a series of islands supporting the main seabird colonies in the Firth of Forth. The islands of Inchmickery, Isle of May, Fidra, The Lamb, Craigleith and Bass Rock were classified on 25 April 1990. The extension to the site, classified on the 16 February 2004 consists of the island of Long Craig, which, at the time of classification, supported the largest colony of roseate tern in Scotland. It is the most northerly of only six regular British colonies. The seaward extension extends approximately 2 km into the marine environment to include the seabed, water column and surface.

The boundary of the SPA overlaps with the boundaries of the following Sites of Special Scientific Interest: Long Craig, Inchmickery, Forth Islands, Bass Rock and the Isle of May. A small overlap also occurs with the Firth of Forth SPA.

8.2 Qualifying Interests:

Forth Islands SPA qualifies under Article 4.1 by regularly supporting populations of European Importance of the Annex 1 species: Arctic tern (*Sterna paradisaea*); roseate tern (*Sterna dougallii*); common tern and sandwich tern.

Forth Islands SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the migratory species: northern gannet; European shag; lesser black-backed gull (*Larus fuscus*) and Atlantic puffin.

Forth Islands SPA also qualifies under Article 4.2 by regularly supporting nationally important populations of razorbill; common guillemot; black-legged kittiwake; herring gull and great cormorant.

The HRA screening process summarised in Table 4 concluded a single species, breeding herring gull, was scoped in and all other species were scoped out of the assessment (see Annex A: Table 5).

8.2.1 Feature Summary

Feature Condition and Conservation Objectives

The Conservation Objectives of the Forth Islands SPA are as follows:

- *"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*
- *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*."

8.2.1.1 Herring gull (breeding)

Herring gull are Red Listed on the Bird of Conservation Concern 5 (Stanbury *et al.*, 2015) and are also a Scottish Priority List species.

The most recent condition assessment of breeding herring gull (as part of the overall assemblage qualifier) resulted in an assessed condition of **Favourable Maintained** at the Forth Islands SPA.

8.2.2 Assessment of Adverse Effects Alone

8.2.2.1 Herring gull (breeding)

There is no direct overlap between the onshore Project footprint and the SPA and the nearest edge of the SPA lies 18 km northwest at its closest point from the nearest infrastructure (i.e. landfall and the transition joint bays).

Although herring gull were recorded during the breeding bird survey, no breeding territories were identified within the BBS Study Area. Intertidal surveys recorded herring gull in all months in the IS Study Areas A1 and B1 (See Figure 1). The desk study identified a further 240 records within 5 km of the site between 2011-2021 of which 13 records, totalling 333 individuals, were recorded within the Site. The desk study records of herring gull are notably spread throughout the wider East Lothian region.

Disturbance/Displacement

The onshore site infrastructure is all located within what could be classed as typical habitat for herring gull. The SNH and JNCC document providing advice to support management of the Forth Islands SPA (SNH & JNCC, 2016), as outlined above for herring gull (see Section 5.2.2.2 above) outlines that, with respect to vessel movements and other fishing activities, although all species display some level of avoidance behaviour, gulls exhibit a low level of sensitivity to such disturbance.

The visual, human presence and vehicle-associated disturbance from the limited footprint of the scheme (primarily in the form of the undergrounding construction works associated with the cable route) is considered to be limited and short-term temporal. Furthermore, herring gull are regularly witnessed utilising the ground disturbance associated with field ploughing and other farming activities to forage on worms and other invertebrates brought to the surface during the process. As such, they are assumed to have not only habitualised to some disturbance but to make opportunistic use of such disturbance.

Therefore, it is considered that there is **no potential for an adverse effect on integrity, having regard to the conservation objectives of the breeding herring gull feature of the Forth Islands SPA from any pressure associated with disturbance / displacement**.

8.2.3 Assessment of Adverse Effects In-combination

As discussed and described in Section 5.2.3 a total of two projects and the Berwick Bank Wind Farm Offshore Proposed Development are considered to the in-combination assessment.

The SPEN Eastern Link Project, SPEN Branxton Grid Substation did not predict any significant impacts on any species. The assessment of the SPEN Eastern Link Project assessed the impacts on breeding herring gull as minor and not significant. The Berwick Bank Offshore Proposed Development did not predict any significant impacts on breeding herring gull as a result of displacement or disturbance during construction.

It is considered that there would be no contribution in terms of adverse effects on breeding herring gull as a result of disturbance or displacement during construction either in-combination with any other development on the integrity of the **Forth Islands SPA** and its conservation objectives.

8.2.4 Summary

The potential pressure pathway identified in relation to breeding herring gull included disturbance/displacement. The baseline assessment included breeding bird surveys in 2020 (as well as wintering bird surveys in 2020/2021 and intertidal surveys in 2020/2021) to establish use of the onshore

cable route and wider area by priority birds of conservation value. Herring gull were recorded during the breeding bird surveys on multiple occasions. The baseline surveys were further complimented through consultation and purchasing of historical data from TWIC (which included records from the BTO and RSPB as well as other data sources).

Due to the lack of proximity and the proposed route taken by the onshore cable it is determined there will be **no adverse effect on integrity, having regard to the conservation objectives of the breeding herring gull feature of the Forth Islands SPA from the identified pressure associated with any effect associated with the Project (alone or in combination)**.

8.2.4.1 Conclusions

The potential for connectivity between the Proposed Development and four Special Protection Areas (SPAs) namely the Firth of Forth SPA/Ramsar; the Outer Firth of Forth and St Andrews Bay Complex SPA; the St. Abb's Head to Fast Castle SPA; and the Forth Islands SPA. A screening exercise completed in September and October 2021 outlined specific qualifying species and assemblage species that may be subject to negative impacts due to the proposed development:-

- the Firth of Forth SPA/Ramsar – wintering pink-footed goose and wintering golden plover;
- Outer Firth of Forth and St Andrews Bay Complex SPA (wintering eider, black-headed gull, common gull and herring gull;
- St. Abb's Head to Fast Castle SPA (breeding herring gull); and
- Forth Islands SPA (breeding herring gull).

The assessment determined there will be **no adverse effect on integrity, having regard to the conservation objectives of the screened in features of the Firth of Forth and St Andrews Bay Complex SPA,** the Firth of Forth SPA/Ramsar, St. Abb's Head to Fast Castle SPA and Forth Islands SPA **from the identified pressure associated with any effect resulting from the Project (alone or in-combination)**.

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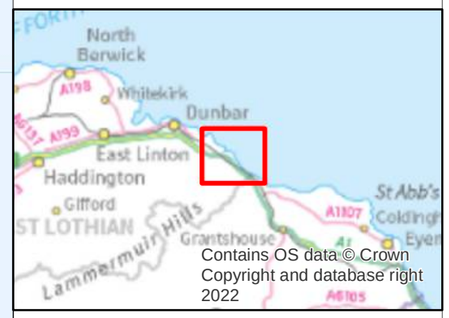
Figure 1 – Study Areas

N

A3
A2
A1
B3
B2
B1
C3
C2
C1
D3
D2
D1

Key:

- Site Boundary
- WBS Study Area (250m)
- BBS Study Area (500m)
- Intertidal Survey Areas
- Proposed Development Infrastructure



0 0.5 1 1.5 km

Scale 1:24,000 @ A3

Berwick Bank
Report to Inform Appropriate Assessment

Figure 1

Ornitthology Study Areas

Date:	Drawn by:	Checked by:	Version:
09/12/2022	RT	MD	V1

Project Number: 2944

Figure 2 – Protected Sites

Key:

- Site Boundary
- 5km Search Buffer
- 20km Search Buffer

Protected Sites

- Firth of Forth SPA/Ramsar
- Forth Islands SPA
- Outer Firth of Forth and St Andrews Bay Complex SPA
- St Abb's Head to Fast Castle SPA

0 4.5 9 km

Scale 1:165,000 @ A3

sse ITPENERGISED

Berwick Bank
Report to Inform Appropriate Assessment

Figure 2

Ornithological Designations

Date: 02/12/2022	Drawn by: AT	Checked by: MF	Version: V1

Project Number: 2944

Annex A – HRA Screening Results

Table 5: Sites screened for the next stage of the assessment for the Proposed Development in relation to Annex I birds (From HRA Screening)

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
Firth of Forth	**Wintering Annex 1 Species**	6.8km		
	Red-throated Diver		Out	Coastal species in winter and not recorded during surveys. Considered unlikely to travel >6km to site.
	Slavonian Grebe		Out	Coastal species in winter and not recorded during surveys. Considered unlikely to travel >6km to site.
	Golden Plover		Out	Commonly recorded during wintering bird survey with a total of 763 individuals across the four visits. Despite being present, considered unlikely to travel >6km from SPA to site to forage or roost.
	Bar-tailed Godwit		Out	Not recorded during surveys and considered unlikely to travel >6km to site.
	Passage Annex 1 Species			
	Sandwich Tern		Out	A single bird recorded was likely a bird moving on passage to the Firth of Forth from breeding grounds further south. Despite a single registration of this species, it is considered unlikely that **LSE** resulting from disturbance will be experienced by this species.
	Migratory species			
	Pink-footed Goose		In	Recorded regularly throughout the survey area during wintering bird surveys with a total of 2,397 individuals recorded. Much of the survey area is suitable habitat for this species being arable or grassland fields and pink-footed geese can travel distances of 20km or more from roost sites to forage in fields during the day (SNH,2016).

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Shelduck		Out	Not recorded during surveys and considered unlikely to travel >6km from SPA to site to forage or roost.
	Knot		Out	Not recorded during surveys and considered unlikely to travel >6km from SPA to site to forage or roost.
	Redshank		Out	A total of 46 individuals were recorded during the four wintering bird survey visits however considered unlikely to travel >6km from SPA to site to forage or roost.
	Turnstone		Out	Not recorded during surveys and considered unlikely to travel >6km from SPA to site to forage or roost.
	Assemblage – winter			
	Scaup		Out	Coastal species in winter and not recorded during surveys. considered unlikely to travel >6km to site.
	Great crested Grebe			Not recorded during surveys. considered unlikely to travel >6km from SPA to site to forage or roost.
	Cormorant			Recorded in small numbers during wintering bird surveys, however considered unlikely to travel >6km from SPA to site to forage or roost.
	Curlew			Commonly recorded during wintering bird survey with a total of 431 individuals across the four visits but considered unlikely to travel >6km from SPA to site to forage or roost.
	Eider			Considered unlikely to travel >6km from SPA to site to forage or roost.
	Long-tailed Duck			Coastal species in winter and not recorded during surveys. Considered unlikely to travel >6km to site.
	Common Scoter			Coastal species in winter and not recorded during surveys. Considered unlikely to travel >6km to site.
	Velvet Scoter			Coastal species in winter and not recorded during surveys. considered unlikely to travel >6km to site.

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Goosander			Considered unlikely to travel >6km from SPA to site to forage or roost.
	Red-breasted Merganser			Coastal species in winter and not recorded during surveys. Considered unlikely to travel >6km to site.
	Oystercatcher			Commonly recorded during wintering bird survey with a total of 376 individuals across the four survey visits, however this species if considered unlikely to travel >6km from SPA to site to forage or roost.
	Ringed Plover			Not recorded during survey and considered unlikely to travel >6km from SPA to site to forage or roost.
	Grey Plover			Recorded in small numbers during wintering bird surveys, however considered unlikely to travel >6km from SPA to site to forage or roost.
	Dunlin (schinzii race)			Not recorded during survey and considered unlikely to travel >6km from SPA to site to forage or roost.
	Mallard			Considered unlikely to travel >6km from SPA to site to forage or roost.
	Lapwing			Recorded during wintering bird survey visit (296) but considered unlikely to travel >6km from SPA to site to forage or roost.
	Wigeon			Recorded in small numbers during wintering bird surveys however considered unlikely to travel >6km from SPA to site to forage or roost.
Outer Firth of Forth and St Andrews Bay Complex	**Wintering**	Directly East		
	Red-throated Diver		Out	Not recorded during surveys, considered likely to remain offshore during winter months.
	Slavonian Grebe		Out	Not recorded during surveys, considered likely to remain offshore during winter months.
	Little Gull		Out	Not recorded during surveys.
	Foraging breeding season			

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Common Tern		Out	Not recorded during breeding bird surveys and considered likely to forage offshore.
	Arctic Tern		Out	Not recorded during breeding bird surveys and considered likely to forage offshore.
	Migratory waterfowl			
	Eider		**In**	A group of 36 birds recorded during wintering bird survey on the fringes of the Site. Common close to or on beaches.
	Waterfowl Assemblage			
	Long-tailed Duck		Out	Seaduck, considered likely to remain out to sea during winter. Not recorded during wintering bird survey.
	Common Scoter		Out	Seaduck, considered likely to remain out to sea during winter. Not recorded during wintering bird survey.
	Velvet Scoter		Out	Seaduck, considered likely to remain out to sea during winter. Not recorded during wintering bird survey.
	Goldeneye		Out	Not recorded during surveys, considered likely to remain on the sea during winter months.
	Red-breasted Merganser		Out	Not recorded during surveys, considered likely to remain on the sea during winter months.
	Migratory seabird - summer foraging			
	Shag		Out	Seabird, considered likely to forage off the coast to forage and not recorded during breeding bird surveys.
	Gannet		Out	Seabird, considered likely to forage off the coast to forage and not recorded during breeding bird surveys.
	Breeding Seabird			

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Puffin		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Kittiwake		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Manx Shearwater		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Guillemot		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Herring Gull		**In**	Commonly recorded during breeding bird survey with a total of 651 individuals recorded across the three survey visits. Herring gull are an adaptive species and will breed on coastal cliffs but also building and other structures meaning breeding habitat is widely available within and adjacent to the Site. The coast and inland fields provide good foraging habitat for this species.
	Non-Breeding seabirds			
	Black-headed gull		**In**	Commonly recorded during wintering bird survey with a total of 217 individuals recorded across the four survey visits. Foraging and roosting habitat present along coast and in open fields inland.
	Common Gull		**In**	Recorded in small numbers during wintering bird survey with a total of 46 individuals recorded across the 4 visits. Foraging and roosting habitat present along coast and in open fields inland.
	Herring Gull		**In**	Commonly recorded during wintering bird survey with a total of 1,268 individuals recorded across the four survey visits. Foraging and roosting habitat present along coast and in open fields inland.
	Guillemot		Out	Seabird, likely to remain off the coast in winter months.
	Shag		Out	Seabird, likely to remain off the coast in winter months.
	Kittiwake		Out	Seabird, likely to remain off the coast in winter months.

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
St Abb's Castle to Fast Head	**Breeding seabird assemblage**	6.9km		
	Razorbill		Out	Breeds on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.
	Guillemot		Out	Breeds on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.
	Kittiwake		Out	Breeds on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.
	Herring Gull		Out	Recorded during breeding bird survey but birds from the SPA population are unlikely to travel 6.9km to the Site during breeding season.
	Shag		Out	Breed on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.

Annex B – HRA Screening Report

Berwick Bank Onshore Transmission Infrastructure

HRA Screening Report

Client:	SSE Renewables
Project/Proposal No:	2944
Version:	1.1
Date:	2021-08-10

Document Information

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Revision History

Version	Date	Authored	Reviewed	Approved	Notes
0.1	07-07-2021	A Taylor	R King	-	Internal review
0.2	14-07-2021	A Taylor	R King	-	Internal Review
1.0	28/07/2021	A Taylor	R King	G Tait	For client issue
1.1	10/08/2021	A Taylor	G Tait	G Tait	Updated to address client comments

Contents

1. Introduction

1.1 Overview

ITPEnergised was appointed by SSE Renewables to undertake the screening process which aims to assess the requirement for a shadow Habitats Regulations Appraisal (HRA). The screening process will aim to identify whether there are any likely significant effects due to the Proposed Development of the onshore transmission infrastructure associated with the Berwick Bank offshore wind farm, southeast of Dunbar (the Proposed Development) on any European protected sites and will incorporate the results of the ecology and ornithology surveys completed for the Proposed Development. The survey area incorporated the Proposed Development scoping boundary as detailed in the location plan (shown in Figure 1) hereafter referred to as the 'Site'.

1.2 Purpose of this Document

This report presents the screening exercise in relation to the Proposed Development HRA. The structure of this report is as follows:

- Details of the Proposed Development (Section 1.4);
- Legislative Background (Section 2);
- The screening exercise, including the identification of sites and the assessment of exposure to effect pathways resulting from the Proposed Development (Sections 3 - 6).

Where there is credible evidence that there is no risk that the Proposed Development activities are 'likely to have a significant effect' (LSE) on specific features of a European or Ramsar site by undermining its conservation objective(s), these features have been screened out and will not require further assessment. Where such determination has been concluded, the justification is noted within the relevant receptor chapters.

If a credible impact pathway is identified, or there is reasonable doubt whether the Proposed Development will or will not result in LSE, in view of the conservation objectives, then the respective site and feature has been screened into the HRA to be taken forward to the next stage, Appropriate Assessment (AA).

1.3 Site Description

The Site is approximately 678.9 hectares (ha) in size and extends from north-west of Skateraw Harbour to Bilsdean in the south. This is the full scoping boundary, which covers multiple landfall and substation options. The Proposed Development site will reduce following option selection. The A1 trunk road and the East Coast Mainline railway pass through the Site from the north-west to the south-east. The Site largely comprises agricultural land with a mixture of arable and grazed fields. A number of watercourses traverse the Site from the west and enter the North Sea to the east. Braidwood Burn and Ogle Burn run through the western reaches of the Site, Branxton burn to the south of the Site and Thornton Burn through the centre of the Site. These watercourses are commonly associated with corridors of scrub and mixed woodland habitat. The, majority of woodland habitat present within the Site is located within the southern and southeastern reaches. The Site also includes a number of small hamlets and farm steadings. Larger settlements include Crowhill, Branxton and Lawfield to the south of the A1 and Skateraw and Thorntonloch to the north. Torness Nuclear Power Station is located outwith the north-eastern boundary of the Site at Torness Point and Thorntonloch Caravan Park is located to the east of Thorntonloch. The Site includes areas of the coastline at the two proposed landfall locations to the north and south of Torness Point.

1.4 The Proposed Development

The Proposed Development comprises the onshore elements of the Berwick Bank Project, and consists of the following;

- One landfall location and transition pit;
- a new wind farm onshore substation;
- the connecting primarily underground onshore cables (between landfall(s) and the new substation and between the new substation and the grid connection substation at Branxton) with the option of a short section of overhead lines (OHL) and cable bridge (which may be the subject of a separate application under the appropriate legislation);
- potential new and upgraded access tracks to the substation, cable construction corridor and landfall(s); and
- associated ancillary infrastructure.

The lifetime of the Proposed Development is currently anticipated to be 50 years from the commencement of operation to commencement of decommissioning.

Currently two landfall and associated substation location options are being considered, Skateraw and Thorntonloch, with multiple cable options being explored for landfall to substation and substation to grid connection at Branxton. Option selection is scheduled for October 2021, therefore this shadow HRA has assessed both options, taking the whole Site boundary into consideration, as shown in Figure 1. A 250m buffer was applied for the wintering birds survey and a 500m buffer for the breeding bird surveys.

2. Legislative Background

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora ("The Habitats Directive"), provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species through the establishment and conservation of an EU-wide network of sites. This network is known as Natura 2000 and is an European ecological network of special areas of importance for nature conservation, composed of sites hosting rare and vulnerable habitats and species. This network is designed to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.

The UK has designated a number of sites of nature conservation importance which form part of a network of Natura 2000 Sites. Natura 2000 Sites relating to birds as qualifying features comprise Special Protected Areas (SPAs), while other non-avian species and habitats are designated as Special Areas of Conservation (SACs). In addition, as clarified by paragraphs 207 to 211 of the Scottish Planning Policy 2014, wetlands of international importance designated under the Ramsar Convention (Ramsar site wetlands) are also treated as designated Natura 2000 Sites and/or Sites of Special Scientific Interest (SSSIs) and are therefore also considered in HRAs.

The procedures that must be followed when considering developments affecting Natura 2000 Sites are set out in Article 6 of the Habitats Directive. In Scotland, this process is implemented through the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) ("The Habitats Regulations").

Habitats Directive Article 6(3) set out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in this report to inform the Article 6 assessments has had regard to the following guidance and legislation:

- Guidance:
  - SNH (2018b). Natura sites and the Habitats Regulations: How to consider proposals affecting SACs and SPAs in Scotland. The essential quick guide.
- Legislation:
  - Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (also known as the 'Habitats Directive').
  - Council Directive 2009/147/EC on the conservation of wild birds, codified version, (also known as the 'Birds Directive').
  - The European Communities (Birds and Natural Habitats) Regulations 2011 to 2015.

3. Scoping Opinion

East Lothian Council (ELC) issued a Scoping Opinion for the Proposed Development on 1st October 2020. In their response within the scoping opinion, NatureScot outlined the following:

"Information to support Habitat Regulation Appraisal has not been considered. NatureScot advise that this proposal could affect the European sites listed below. Further information about these sites, and the special features they are designated to protect, can be found on the NatureScot SiteLink website (http://gateway.snh.gov.uk/sitelink/index.jsp)

- *Firth of Forth SPA*
- *St Abb's Head to Fast Castle SPA*
- *Outer Firth of Forth and St Andrews Bay Complex SPA*

The status of these sites means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (the "Habitats Regulations") or, for reserved matters the Conservation of Habitats and Species Regulations 2010 as amended apply. Consequently, the competent authority (East Lothian Council) is required to consider the effect of the proposal on these sites before it can be consented. See NatureScot's guidance note Legislative Requirements for European Sites [1] for a summary of requirements.

The above sites may also be notified as Sites of Special Scientific Interest (SSSI) and/ or Ramsar sites. However, any issues raised in relation to these designations are fully addressed as part of the following consideration of the respective European sites.

[1] Hyperlink to https://www.nature.scot/sites/default/files/2017-12/Legislative%20requirements%20for%20European%20Sites%20-%20updated%20November%2030th%202017%20%28B449621%29_1.pdf

HRA Stage 1 – is the proposal connected with conservation management of the European sites?

No – this proposal is not connected to conservation management of any European Site.

HRA Stage 2 – is the proposal 'likely to have significant effects' upon the European sites?

In plain English this asks whether there is any connectivity between the proposals and the European sites. The Scoping Report identifies (Table 8.1) the first two of the above list of European sites as being within the 10km Search Area, presumably to then be considered in the EIA Report. However it then goes on to scope the HRA process out of the EIA Report (Table 8.3). The Report does not make it clear whether this signifies that HRA will be considered in a separate supporting document, or if European sites are being scoped out of assessment altogether.

Naturescot advise that, having identified European sites as possible receptors, the HRA process does apply. Any forthcoming planning application should be supported by HRA or clear rationale as to why it is not required.

Firth of Forth Special Protection Area (SPA) and St Abb's Head to Fast Castle SPA: - Work that was previously carried out as part of the Neart na Gaoithe onshore transmission works planning application made a clear argument that Thorntonloch beach was of very limited value to birds and was not functionally linked to either Special Protection Area. That work may be applicable to the current proposal, however it did not include the Skateraw Harbour area, and so it is likely that some further assessment of that area is needed. There could potentially be impacts to St Abbs Head to Fast Castle SPA through sediment and pollution run-off though this should be controllable through standard mitigation measures.

Outer Firth of Forth and St Andrews Bay Complex pSPA: - This is a marine SPA and the impact of the offshore works may need more consideration. However, as there is connectivity to this site, habitat regulation appraisal will be required in order for any planning application for the onshore works to be determined.

HRA Stage 3 – will the proposal have adverse effects on the integrity of the European sites?

This stage of assessment may or may not be required depending on the conclusion of stage 2.

The Habitat Regulation Appraisal Appropriate Assessment of the East Lothian Local Plan is available here: https://www.eastlothian.gov.uk/downloads/file/27700/habitats_regulations_appraisal_-_ldp_2018 .

This document identified that "A study of existing visitor numbers and disturbance arising from these should be initiated. This information should be used to identify areas of coast where measures are required to reduce disturbance, such as through introduction of barriers, fences, ditches, or planting." This study, which would add to understanding of recreational pressures at this site, has not yet been carried out. Both Thorntonloch and Skateraw are used by people for recreation. It is possible that development activity that restricts access to these areas, or makes them less attractive for recreational use, could displace recreational activity to the coast at the Firth of Forth SPA. In the absence of the study, or information about recreational use of these areas, whether or not this is a potential issue is unclear.

Marine mammals including seals and porpoise have been observed along this coastline, but it is not a known haul out site for the former, therefore the intention to include impacts on marine mammals in the offshore EIAR is supported.

Details of designated sites can be found at SNH's website http://gateway.snh.gov.uk/sitelink/, and of legislative requirements at http://www.snh.gov.uk/docs/A423286.pdf."

4. Identification of Relevant Designated Sites

4.1 Introduction

All SPA's within 20km of the Site and SAC's within 5km of the Site were identified for further consideration. A total of three Natura 2000 designations are present within search area, all three are SPAs, one of which is also designated as a Ramsar wetland. The names and distance to these protected sites is summarised in Table 1 and shown in Figure 2 and a detailed description of the site and the qualifying features for each protected site outlined in Section 4.2 below.

A total of three SAC's were identified between 5 and 10km of the Site (St Abb's Castle to Fast Head, Berwickshire and North Northumberland Coast and River Tweed) but due to their distance from the Site there are no potential pressure pathways connecting their qualifying features with the Proposed Development. As such, these designations are not considered any further within this document.

Table 1: European Protected Sites

Site Name	Designation	Distance from the Site
Firth of Forth	SPA/Ramsar	6.8km north-west
Outer Firth of Forth and St Andrews Bay Complex	SPA	Directly east
St Abb's Castle to Fast Head	SPA	6.9km south-east

4.2 Special Protection Areas

4.2.1 Firth of Forth SPA

4.2.1.1 Designated Site Description

The Site is located south of the Firth of Forth SPA, 6.8km north-west at its closest point. The Firth of Forth SPA is located on the east coast of Scotland and is a complex estuarine site extending 55km and covering 6,313.72ha from Alloa in the west to the East Lothian and Fife coasts including intertidal flats, rocky shore, saltmarsh, lagoons and sand dune habitats, in the east (JNCC, 2001).

4.2.1.2 Qualifying Interests:

The Firth of Forth SPA qualifies under Article 4.1 of the Birds Directive for regularly supporting wintering populations of the Annex 1 species: red-throated diver (*Gavia stellata*), Slavonian grebe (*Podiceps auritus*), golden plover (*Pluvialis apricaria*) and bar-tailed godwit (*Limosa lapponica*). The SPA also qualifies under Article 4.1 for regularly supporting populations of European importance of the Annex 1 species sandwich tern (*Sterna sandvicensis*) during the passage period.

The SPA further qualifies under Article 4.2 of the Birds Directive by regularly supporting populations of European importance of the wintering migratory species: pink-footed goose (*Anser brachyrhynchus*), shelduck (*Tadorna tadorna*), knot (*Calidris canutus*), redshank (*Tringa totanus*) and turnstone (*Arenaria interpres*). The SPA also qualifies under Article 4.2 for regularly supporting a wintering assemblage, in excess of 20,000 individual waterfowl, of European importance: a winter peak mean of 95,000 waterfowl, comprising 45,000 wildfowl and 50,000 waders including nationally important populations of the following species: scaup (*Aythya marila*);Slavonian grebe; golden plover; bar-tailed godwit; pink-footed; shelduck; knot; redshank); turnstone; great crested grebe (*Podiceps cristatus*); cormorant (*Phalacrocorax carbo*); red-throated diver (90 individuals); curlew (*Numenius arquata*); eider (*Somateria mollissima*); long-tailed duck (*Clangula hyemalis*); common scoter (*Melanitta nigra*); velvet scoter (*Melanitta fusca*); goldeneye

(*Bucephala clangula*); red-breasted merganser (*Mergus serrator*); oystercatcher (*Haematopus ostralegus*); ringed plover (*Charadrius hiaticula*) ; grey plover (*Pluvialis squatarola*); and dunlin (*Calidris alpina alpina*).

In the five year winter period 1991/92 to 1995/96 the assemblage additionally included nationally important populations greater than 2,000 individuals of: mallard (*Anas platyrhynchos*); lapwing (*Vanellus vanellus*); and wigeon (*Anas penelope*).

4.2.2 Outer Forth SPA

4.2.2.1 Designated Site Description

The Outer Firth of Forth and St Andrews Bay Complex SPA lies directly east of the Site and is a large estuarine/marine site on south-east coast of Scotland consisting of the two closely adjacent Firths of Forth and Tay (JNCC, 2001). In the mid Firth of Forth a belt of mud-rich sediments lies between areas of sandy gravels and shell material on either side along the shore. As the estuary widens towards the outer firth, there are extensive areas of sandy and gravelly muds and fine sediments. In contrast St Andrews Bay contains clean sands and gravel with only small areas of muddy sediments. Water depth is variable but large areas, in both the Firth of Forth and St Andrews Bay, are shallow and less than 10m deep.

The area supports a wide variety of both pelagic and demersal fish, including sandeels, and crustaceans, molluscs and marine worms, all of which, especially sandeels, comprise the prey of the waterfowl species

4.2.2.2 Qualifying Interests:

The Outer Firth of Forth and St Andrews Bay Complex SPA qualifies under Article 4.1 by regularly supporting a non-breeding population of European importance of the following Annex 1 species: red-throated diver during the period 2001/02 to 2004/2005; Slavonian grebe during the period 2006/07 to 2010/11 (an average of 30 individuals (2.7% of the Great Britain population); Little Gull (*Larus minutus*) during the period 2001/02 to 2004/05 (126 individuals; more than 50 individuals) and feeding common tern (*Sterna hirundo*) and Arctic tern (*Sterna paradisaea*) from the adjacent breeding colonies.

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory waterfowl species: Common eider (*Somateria mollissima*) and by regularly supporting in excess of 20,000 individual waterfowl including nationally important populations of the following species during the five year period 2001/02 to 2004/05: long tailed duck (*Clangula hyemalis*), common scoter and during the period 2006/07-2010/11: velvet scoter, common goldeneye (*Bucephala clangula*) and red-breasted merganser (*Mergus serrator*).

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the two following migratory species of seabird: foraging European shag (*Phalacrocorax aristotelis*) from the nearby colonies, and Northern gannet (*Morus bassanus*) during the period 1980-2006.

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual seabirds during the breeding season including nationally important populations of the following species during the period 1980-2006: Atlantic puffin (*Fratercula arctica*), black-legged kittiwake (*Rissa tridactyla*) Manx shearwater (*Puffinus puffinus*), common guillemot (*Uria aalge*) and herring gull (*Larus argentatus*).

The Outer Firth of Forth and St Andrews Bay Complex SPA further qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual seabirds during the non-breeding season including nationally important populations of the following species during the period 2003/04-2005/06: black-headed gull (*Chroicocephalus ridibundus*), common gull (Larus canus), and herring gull and, during the period 1980-2006: common guillemot, European shag, black-legged and razorbill (*Alca torda*).

4.2.3 St Abb's Head to Fast Castle SPA

4.2.3.1 Site Description

St Abb's Head to Fast Castle SPA lies 6.9km south-east of the Site and comprises an area of sea cliffs and coastal strip stretching over 10km along the Berwickshire Coast north of St Abbs (JNCC, 2001). The boundary of the SPA overlaps with that of St Abb's Head to Fast Castle SSSI, and the seaward extension extends approximately 1 km into the marine environment to include the seabed, water column and surface.

4.2.3.2 Qualifying Interests:

N.B. All figures relate to numbers at the time of classification except where amended by the 2001 SPA Review.

St Abb's Head to Fast Castle SPA qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual seabirds. The site regularly supports 79,560 seabirds including nationally important populations of the following species: razorbill; common guillemot; black-legged kittiwake; herring gull; and European shag.

5. Screening for Onshore Species of Bird

Screening has been completed with respect to the qualifying features of SPAs within 20km of the onshore cabling route between the landfall point, substation and the grid connection. Details of exposure pathways and the potential impacts identified are detailed below. It is assumed that for any Natura 2000 site or Ramsar site that overlaps with the Site footprint will be affected and will be screened in for further assessment within Stage 2.

5.1 Potential Pressure Pathways

The following potential pressure pathways have been identified which may lead to adverse impacts on the SPA qualifying feature, with specific details presented in Table 2:

- Accidental pollution/contamination;
- Introduction/spread of Invasive Non-Native Species (INNS);
- Disturbance/displacement; and
- Loss/change of habitat.

Table 2: Potential pressure pathways for onshore Annex I bird species

Project Phase	Effect	Justification
Construction, operation and maintenance and decommissioning	Accidental pollution	During all phases there is a risk of accidental pollution from construction, operational and maintenance and decommissioning activities. Pollution incidents may impact birds through contamination. This may adversely affect breeding behaviour and success, and in some rare cases can be fatal. However, pollution events are likely to be rare and the associated effects would be highly localised, small scale and located outwith any preferred foraging habitats. As such, it is considered there is **no potential LSE** from this pressure.
	Introduction / spread of INNS	There is potential for the introduction or spread of INNS within the proposed footprint of the works. However, any existing stands of INNS will be identified during pre-construction

Project Phase	Effect	Justification
		surveys and appropriate management/ protection measures will be implemented as per National legislation. As such, it is considered there is **no potential LSE** from this pressure.
	Disturbance / displacement	Birds may experience disturbance as a result of the construction, operation, maintenance and decommissioning phases. This may cause displacement or avoidance of the area surrounding the construction works and infrastructure.
	Habitat loss	Any habitat loss caused by the Proposed Development activities may lead to adverse impacts on ornithological populations that use the area as foraging grounds. Habitat loss may occur due to changing/recovering habitats as a result of ground disturbance following cable laying and associated infrastructure/buildings. The direct footprint of these objects/activities will be very small relative to the overall habitat available, the majority of which can use a number of common habitats to forage and roost such as grassland or arable fields in the wider environs. Given the lack of key habitat to local birds being lost it is considered that there is **no potential LSE** from this pressure.

5.1.1 Summary of Potential Pressure Pathways

In summary, the only pressure pathway considered with respect to qualifying features of SPA designations with potential connectivity is:

- Disturbance / displacement.

5.2 Surveys for Designated Species of Bird

5.2.1 Breeding Bird Survey

A breeding bird survey, comprising three visits, was completed between June and July 2020, with methods following that of an adopted Common Bird Census (CBS) survey was carried out in line with methods detailed in Gilbert *et al*., (2011). Transects were completed to access as much habitat as possible with areas of sensitive farmland surveyed from field edges. Transects were followed in order to cover with close proximity all high value habitats to breeding birds such as woodland and coastal grassland. A summary of records of all designated species of bird recorded during the survey are presented in Appendix A of this document.

As the landfall, substation and cable route are yet to be finalised all records of bird sightings within the scoping boundary and a 500m survey buffer have been included in this screening process.

5.2.2 Wintering Bird Survey

A wintering bird walkover survey was carried out between December 2020 and February 2021 to identify winter roosting and foraging bird populations within the Site and a wider 2500m study area and included four visits.

Additional vantage points along the inter-tidal zones were completed to target species such as wading birds and seabirds. The remainder of the survey was a walkover survey that was carried out in line with methods detailed in Gilbert *et al*., (2011) and consisted of a total of four visits undertaken on the following dates:

- 1 December 2018;
- 9 January 2019;
- 22 January 2019; and
- 5 February 2019.

As the landfall, substation and cable route are yet to be finalised all records of bird sightings within the scoping boundary and survey buffer have been included in the screening process.

The full results of the ornithology surveys with respect to the qualifying interests of the three SPAs are detailed in Appendix A of this document.

5.3 Screening

Table 3 presents a species level screening for each of the qualifying species for the three Natura designated sites, taking into account the results of the breeding and wintering bird surveys.

Table 3: Sites screened for the next stage of the assessment for the Proposed Development in relation to Annex I birds

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
Firth of Forth	**Wintering Annex 1 Species**	6.8km		
	Red-throated Diver		Out	Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.
	Slavonian Grebe		Out	Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.
	Golden Plover		Out	Commonly recorded during wintering bird survey with a total of 763 individuals across the four visits. Despite being present, considered unlikely to travel >6km from SPA to site to forage or roost.
	Bar-tailed Godwit		Out	Not recorded during surveys and unlikely to travel >6km to site.
	Passage Annex 1 Species			
	Sandwich Tern		Out	A single bird recorded was likely a bird moving on passage to the Firth of Forth from breeding grounds further south. Despite a single registration of this species, it is considered unlikely that **LSE** resulting from disturbance will be experienced by this species.
	Migratory species			
	Pink-footed Goose		In	Recorded regularly throughout the survey area during wintering bird surveys with a total of 2,397 individuals recorded. Much of the survey area is suitable habitat for this species being arable or grassland fields and pink-footed geese can travel distances of 20km or more from roost sites to forage in fields during the day (SNH,2016).
	Shelduck		Out	Not recorded during surveys and unlikely to travel >6km from SPA to site to forage or roost.
	Knot		Out	Not recorded during surveys and unlikely to travel >6km from SPA to site to forage or roost.

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Redshank		Out	A total of 46 individuals were recorded during the four wintering bird survey visits however unlikely to travel >6km from SPA to site to forage or roost.
	Turnstone		Out	Not recorded during surveys and unlikely to travel >6km from SPA to site to forage or roost.
	Assemblage – winter			
	Scaup		Out	Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.
	Great crested Grebe			Not recorded during surveys. Unlikely to travel >6km from SPA to site to forage or roost.
	Cormorant			Recorded in small numbers during wintering bird surveys, however considered unlikely to travel >6km from SPA to site to forage or roost.
	Curlew			Commonly recorded during wintering bird survey with a total of 431 individuals across the four visits but considered unlikely to travel >6km from SPA to site to forage or roost.
	Eider			Unlikely to travel >6km from SPA to site to forage or roost.
	Long-tailed Duck			Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.
	Common Scoter			Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.
	Velvet Scoter			Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.
	Goosander			Unlikely to travel >6km from SPA to site to forage or roost.
	Red-breasted Merganser			Coastal species in winter and not recorded during surveys. Unlikely to travel >6km to site.

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Oystercatcher			Commonly recorded during wintering bird survey with a total of 376 individuals across the four survey visits, however this species if considered unlikely to travel >6km from SPA to site to forage or roost.
	Ringed Plover			Not recorded during survey and considered unlikely to travel >6km from SPA to site to forage or roost.
	Grey Plover			Recorded in small numbers during wintering bird surveys, however considered unlikely to travel >6km from SPA to site to forage or roost.
	Dunlin (schinzii race)			Not recorded during survey and considered unlikely to travel >6km from SPA to site to forage or roost.
	Mallard			Unlikely to travel >6km from SPA to site to forage or roost.
	Lapwing			Recorded during wintering bird survey visit (296) but considered unlikely to travel >6km from SPA to site to forage or roost.
	Wigeon			Recorded in small numbers during wintering bird surveys however considered unlikely to travel >6km from SPA to site to forage or roost.
Outer Firth of Forth and St Andrews Bay Complex	**Wintering**	Directly East		
	Red-throated Diver		Out	Not recorded during surveys, likely to remain offshore during winter months.
	Slavonian Grebe		Out	Not recorded during surveys, likely to remain offshore during winter months.
	Little Gull		Out	Not recorded during surveys.
	Foraging breeding season			
	Common Tern		Out	Not recorded during breeding bird surveys and likely to forage offshore.
	Arctic Tern		Out	Not recorded during breeding bird surveys and likely to forage offshore.
	Migratory waterfowl			

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Eider		**In**	A group of 36 birds recorded during wintering bird survey on the fringes of the Site. Common close to or on beaches.
	Waterfowl Assemblage			
	Long-tailed Duck		Out	Seaduck, likely to remain out to sea during winter. Not recorded during wintering bird survey.
	Common Scoter		Out	Seaduck, likely to remain out to sea during winter. Not recorded during wintering bird survey.
	Velvet Scoter		Out	Seaduck, likely to remain out to sea during winter. Not recorded during wintering bird survey.
	Goldeneye		Out	Not recorded during surveys, likely to remain on the sea during winter months.
	Red-breasted Merganser		Out	Not recorded during surveys, likely to remain on the sea during winter months.
	Migratory seabird - summer foraging			
	Shag		Out	Seabird, likely to forage off the coast to forage and not recorded during breeding bird surveys.
	Gannet		Out	Seabird, likely to forage off the coast to forage and not recorded during breeding bird surveys.
	Breeding Seabird			
	Puffin		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Kittiwake		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Manx Shearwater		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Guillemot		Out	Not recorded during breeding bird surveys, no breeding habitat within the Site, likely to forage on the open sea.
	Herring Gull		**In**	Commonly recorded during breeding bird survey with a total of 651 individuals recorded across the three survey visits. Herring gull are an adaptive species and will breed on coastal cliffs but also building and other structures meaning breeding habitat is widely available within and adjacent to the Site. The coast and inland fields provide good foraging habitat for this species.
	Non-Breeding seabirds			
	Black-headed gull		**In**	Commonly recorded during wintering bird survey with a total of 217 individuals recorded across the four survey visits. Foraging and roosting habitat present along coast and in open fields inland.
	Common Gull		**In**	Recorded in small numbers during wintering bird survey with a total of 46 individuals recorded across the 4 visits. Foraging and roosting habitat present along coast and in open fields inland.
	Herring Gull		**In**	Commonly recorded during wintering bird survey with a total of 1,268 individuals recorded across the four survey visits. Foraging and roosting habitat present along coast and in open fields inland.
	Guillemot		Out	Seabird, likely to remain off the coast in winter months.
	Shag		Out	Seabird, likely to remain off the coast in winter months.
	Kittiwake		Out	Seabird, likely to remain off the coast in winter months.
St Abb's Castle to Fast Head	**Breeding seabird assemblage**	6.9km		
	Razorbill		Out	Breeds on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.

Site Name	Category of Interest Feature	Distance (km)	Screening Decision	Reason for Screening Decision
	Guillemot		Out	Breeds on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.
	Kittiwake		Out	Breeds on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.
	Herring Gull		Out	Recorded during breeding bird survey but birds from the SPA population are unlikely to travel 6.9km to the Site during breeding season.
	Shag		Out	Breed on cliffs and not recorded during breeding bird survey. Unlikely to travel from breeding cliffs to Site.

6. Conclusion

Of the three European sites within the search area of the Site, two have been screened in and are considered to require a HRA assessment based on the potential for LSE from the Proposed Development:

- Outer Firth of Forth and St Andrews Bay Complex SPA; and
- Firth of Forth SPA.

The following site has been screened out:-

- St Abb's Castle to Fast Head SPA.

7. References

Gilbert G, Gibbons DW & Evans J (2011). Bird monitoring methods, a manual of techniques for key UK species. RSPB, Sandy, Bedfordshire UK.

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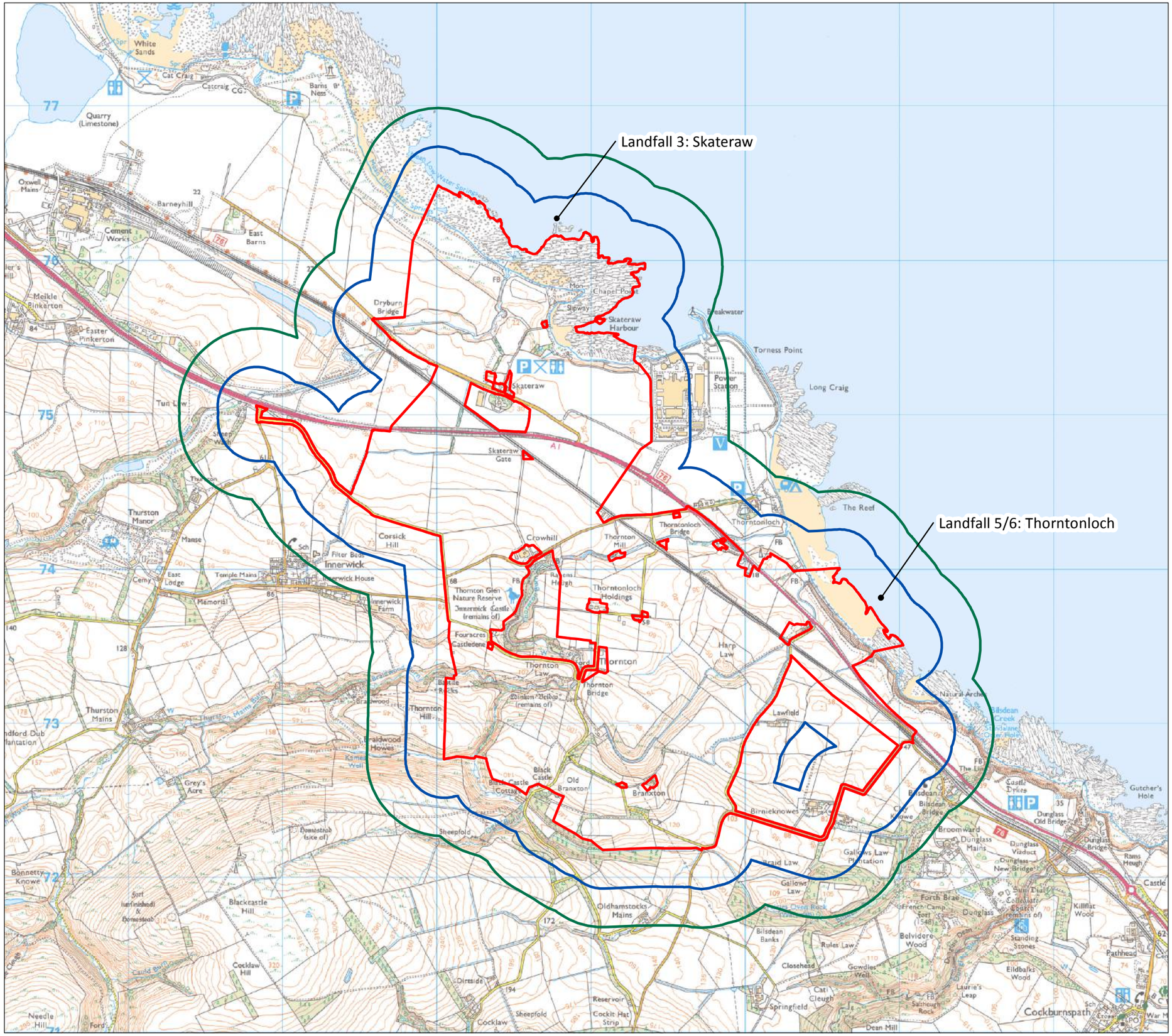
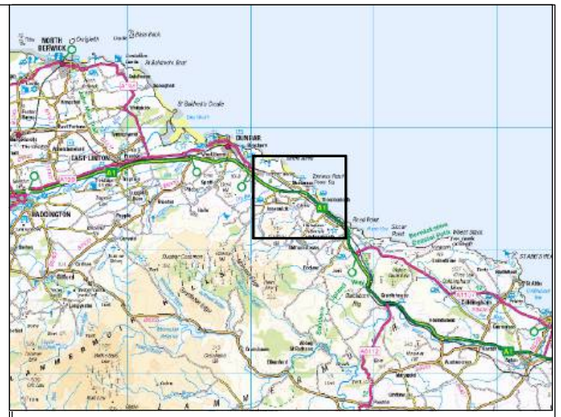
Figures

Figure 1: Scoping Boundary





Legend

- Scoping Boundary
- WBS 250m buffer
- BBS 500m buffer

0 0.25 0.5 1 1.5 km

N

Project Name

BERWICK BANK WIND FARM

Drawing Title

Scoping Boundary and Survey Buffers

Rev	Date	Details	Status	Drwn	Rqst	Chkd	Appd
R1	06/08/21	First Issue	-	GT	-	-	-
	-						
	-						

Drawing Number

Figure 1

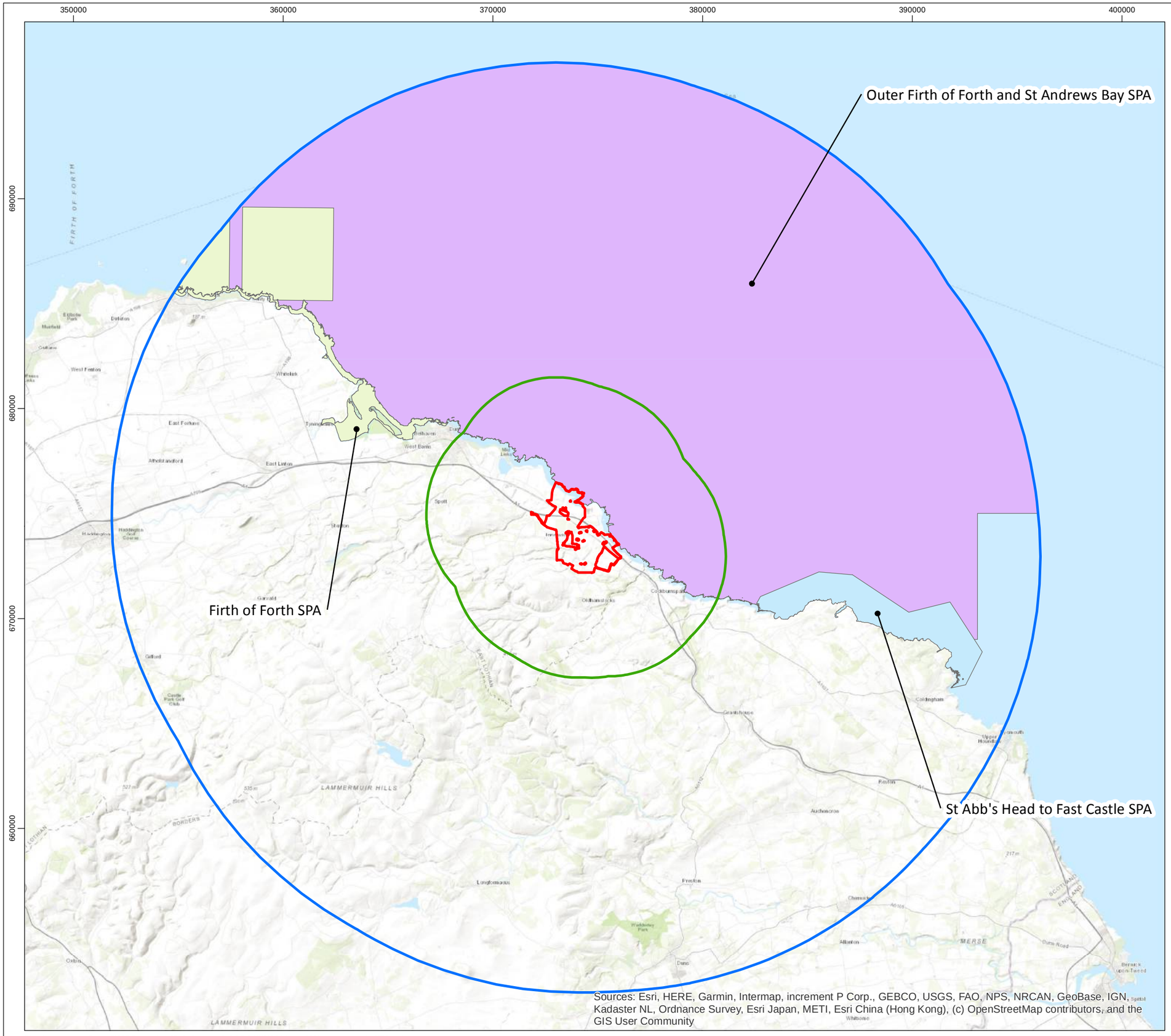
Scale	Plot Size	Datum	Projection
1:25,000	A3	OSGB36	BNG

ITPENERGISED

sse Renewables

File ref: F:\Clients\S\SSE Renewables\2944 - Seagreen 2_3\6 GIS\MXD\SG2 Adhoc\2944_Scoping Boundary for HRA.mxd

Figure 2: European Protected Sites



Legend

- Scoping Boundary
- 5km buffer
- 20km buffer

Special Protection Areas (SPA)

- Firth of Forth
- Outer Firth of Forth and St Andrews Bay Complex
- St Abb's Head to Fast Castle

0 2.5 5 10 km

N

Project Name

BERWICK BANK WIND FARM

Drawing Title

European Sites

Rev	Date	Details	Status	Drwn	Rqst	Chkd	Appd
R1	22/07/21	First Issue	-	GT	-	-	-
	-						
	-						

Drawing Number

Figure 2

Scale	Plot Size	Datum	Projection
1:180,000	A3	OSGB36	BNG

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

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Appendix A – Ornithology Survey Results

Table 1 – Results: Recorded Firth of Forth SPA qualifying species

Firth of forth - Qualifying species	Distance to site – 6km	Result - Wintering / Breeding - visit			
		1	2	3	4
Red-throated Diver	*Gavia stellata*				
Slavonian Grebe	*Podiceps auritus*				
Golden Plover	*Pluvialis apricaria*	527	152	61	23
Bar-tailed Godwit	*Limosa lapponica*				
Sandwich Tern	*Sterna sandvicensis*	1			
Migratory					
Pink-footed Goose	*Anser brachyrhynchus*	1743	147	96	411
Shelduck	*Tadorna tadorna*				
Knot	*Calidris canutus*				
Redshank	*Tringa totanus*	3	3	17	23
Turnstone	*Arenaria interpres*				
Scaup	*Aythya marila*				
Great crested Grebe	*Podiceps cristatus*				
Cormorant	*Phalacrocorax carbo*			3	
Curlew	*Numenius arquata*	162	63	148	58
Eider	*Somateria mollissima*				36
Long-tailed Duck	*Clangula hyemalis*				
Common Scoter	*Melanitta nigra*				
Velvet Scoter	*Melanitta fusca*				
Goosander	*Mergus merganser*				
Red-breasted Merganser	*Mergus serrator*				
Oystercatcher	*Haematopus ostralegus*	183		95	98
Ringed Plover	*Charadrius hiaticula*				
Grey Plover	*Pluvialis squatarola*			4	
Dunlin (schinzii race)	*Calidris alpina schinzii*				
Mallard	*Anas platyrhynchos*				
Lapwing	*Vanellus vanellus*	296			
Wigeon	*Anas penelope*			7	

From the results of the surveys completed a total of eleven qualifying species were recorded from the firth of Forth SPA namely wading species curlew, lapwing, golden plover, oystercatcher, redshank and grey plover; waterfowl pink-footed goose, eider and wigeon as seabirds cormorant and sandwich tern. The SPA lies over

6km to the north of the Site and it is considered out of the eleven species recorded only pink-footed goose is likely to travel the 6 km distance in order to regularly forage or roost. Pink-footed geese are known to travel up to 20km from roost sites to forage and despite the SPA being 6km north of the Site, the nearest known roost location for this species within the SPA to the Site is located at Aberlady Bay which is 25km north-west of the Site. It is therefore considered unlikely the pink-footed geese recorded during the winter surveys are part of the SPA population.

Table 2 – Results: Recorded Outer Forth SPA qualifying species

Outer Forth - Qualifying species	Distance to site = 0km	Result - Wintering / Breeding - visit			
		1	2	3	4
Red-throated Diver	*Gavia stellata*				
Slavonian Grebe	*Podiceps auritus*				
Little Gull	*Hydrocoloeus minutus*				
Common Tern	*Sterna hirundo*				
Arctic Tern	*Sterna paradisaea*				
Eider	*Somateria mollissima*				36
Long-tailed Duck	*Clangula hyemalis*				
Common Scoter	*Melanitta nigra*				
Velvet Scoter	*Melanitta fusca*				
Goldeneye	*Bucephala clangula*				
Red-breasted Merganser	*Mergus serrator*				
Shag	*Phalacrocorax aristotelis*				
Gannet	*Morus bassanus*				
Puffin	*Fratercula arctica*				N/A
Kittiwake	*Rissa tridactyla*				N/A
Manx Shearwater	*Puffinus puffinus*				N/A
Guillemot	*Uria aalge*				N/A
Herring Gull	*Larus argentatus*	191	286	174	N/A
Black-headed gull	*Chroicocephalus ridibundus*	114	31	39	33
Common Gull	*Larus canus*		13	33	
Herring Gull	*Larus argentatus*	579	128	287	274
Guillemot	*Uria aalge*				
Shag	*Phalacrocorax aristotelis*				
Kittiwake	*Rissa tridactyla*				

From the results of the surveys completed a total of five qualifying species were recorded from the Outer Forth SPA namely eider as well as breeding and wintering herring gull and wintering black-headed and common gull.

The Outer Forth SPA lies in direct proximity to the Site so it is considered a possibility that the proposed development could have impacts on these four SPA species.

Table 3 – Results: Recorded St Abbs Head SPA qualifying species

St Abbs Head to Fast Castle	Distance to site = 7km	1	2	3	4
Breeding Seabird					
Herring Gull	*Larus argentatus*	191	286	174	N/A
Guillemot	*Uria aalge*				N/A
Shag	*Phalacrocorax aristotelis*				N/A
Kittiwake	*Rissa tridactyla*				N/A
Razorbill	*Alca torda*				N/A

A single qualifying species, breeding herring gull, were recorded during breeding bird surveys at the Site. It is considered unlikely that breeding herring gull would travel the 7km between the Site and the SPA to forage or roost.

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