

Marine Scotland



The Plan for Offshore Wind Energy in Scottish
Territorial Waters Pre-Screening for Appropriate
Assessment June 2010

marinescotland

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ISBN: 978-1-78045-056-8 (web only)

The Scottish Government
St Andrew's House
Edinburgh
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Produced for the Scottish Government by APS Group Scotland
DPPAS11359 (03/11)

Published by the Scottish Government, March 2011

AMENDMENT RECORD

Issue	Description	Date	Initials
1	1 st draft for internal review	28/1/2010	SI, JC, NO
1	Internal review complete	1/2/2010	RAC, PH
1	1 st draft sent for client comment	8/2/2010	SI
2	2 nd draft for client comment	22/4/2010	SI
3	3 rd draft for client comment	23/6/2010	SI

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LIMITATIONS

Halcrow Group Ltd has been instructed to provide Marine Scotland with a high level screening report that describes the need, if any, to undertake an Appropriate Assessment of their emerging offshore wind energy plan for Scottish Territorial Waters. The assessment is based on the information that has been made available at the time of publication. The report is presented as a consultation document. Any subsequent additional information arising during the consultation may allow refinement of the conclusions. It should be noted that:

- The findings of this report represent the professional opinion of experienced environmental scientists, ecologists and other specialists. Halcrow does not provide legal advice and the advice of lawyers may also be required;
- All work carried out in preparing this report has utilised and is based upon Halcrow's professional knowledge and understanding of current relevant European Union, UK and Scottish standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and cause any conclusions to become inappropriate or incorrect. Halcrow does not accept responsibility for advising of the facts or implications of any such changes;
- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by Halcrow for the accuracy of such information. All maps, illustrations and other sources of data are credited where appropriate;
- Every endeavour has been made to identify data sources, where appropriate. Additional data sources are listed in the baseline for reference;
- This report is by necessity a high level pre-screening. Due to scheduling difficulties, the AA has been undertaken in a reduced timeframe than was originally proposed in the joint Screening/Scoping Report (June 2009). A number of assumptions / associations / species groupings have therefore been made and are clearly stated in the text;
- This report is based upon the assessment of the ten short-term options for possible offshore wind development sites originally included in The Crown Estate's award of exclusivity agreements in February 2009. Since these options were identified, the Offshore Wind Plan and associated SEA has identified a series of medium and long term development options. As these options form part of the Plan, these will also need to be assessed in AA work subsequent to this report, including further high-level screening for AA; and

- This report represents the independent views and recommendations of the consultants conducting the analysis and may not necessarily reflect the opinions held by the Scottish Government.

NAMING CONVENTION

For the sake of brevity, this report will refer to the emerging offshore wind energy plan for Scottish Territorial Waters as the Plan. To avoid repetition, Latin names of species are only provided in Appendix 1 and Appendix 4.

ACRONYMS

AA	Appropriate Assessment
BAP	Biodiversity Action Plan
CO ₂	Carbon Dioxide
EC	European Commission
EIA	Environmental Impact Assessment
EU	European Union
GIS	Geographic Information System
ICZM	Integrated Coastal Zone Management
IMO	International Maritime Organization
MCA	Maritime and Coastguard Agency
MS	Marine Scotland
PPC	Pollution Prevention and Control
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation, as prescribed by the EC Habitats Directive (92/43/EEC)
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SNH	Scottish Natural Heritage
SNIFFER	Scotland and Northern Ireland Forum For Environmental Research
SPA	Special Protection Area as prescribed by the EC Birds Directive (79/409/EEC)
SSSI	Site of Special Scientific Interest
STW	Scottish Territorial Waters

1 INTRODUCTION

1.1 Background

1.1.1 This pre-screening report has been prepared by Halcrow Group Ltd. on behalf of Marine Scotland. The emerging plan for offshore wind in Scottish Territorial Waters was considered likely to have significant environmental effects. It therefore fell under the provisions of the Environmental Assessment (Scotland) Act, 2005 and would hence require a Strategic Environmental Assessment (SEA). Due to the possible impacts of the Plan on sites of international nature conservation interest, the Plan was also considered to need a screening for 'Appropriate Assessment' (AA) under the Scottish Habitats Regulations.¹

1.1.2 Marine Scotland undertook the combined screening and scoping stages of the SEA in June 2009. The scoping report first highlighted the need for a screening for AA to take place. This document is a pre-screening report under the Scottish Habitats Regulations for the ten short-term development options in the Plan.

1.1.3 Table 1.1 below, presents some key facts in relation to the AA and SEA.

Table 1.1 Key Facts

Responsible Authority	Marine Scotland, Scottish Government
Title of Plan/ programme	Plan for Offshore Wind Development in Scottish Territorial Waters
Purpose of Plan	To provide a framework for progressing the development of offshore wind energy projects in Scottish Territorial Waters.
Plan Aims	The plan is intended to: <ul style="list-style-type: none">• define a national strategy for the development of offshore wind energy in Scottish territorial waters over the short, medium and long term.• set out a regional framework for offshore wind energy development, based on an assessment of environmental and technical capacity.• identify where sites could be prioritised for leasing, and other areas where development may require further assessment and planning before they are progressed, as a result of their environmental constraints.
Plan Area	There are ten possible short-term development sites, all of

¹ In Scotland, the EU Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations, the Habitats (Scotland) Regulations, 1994.

	which lie within Scottish Territorial Waters (within 12 nautical miles from the coast). Since the time of writing this report, the plan also now includes options for development in the medium and long term. These are not assessed in this screening document, as described in the 'Limitations' section at the front of the report.
Consultation Contact	Phil Alcock (Project Manager, Marine Scotland) T: 0131 244 6602 E: Phil.Alcock@scotland.gsi.gov.uk

1.2 Legislative background and guidance

1.2.1 This pre-screening report has been prepared in accordance with;

- EU Habitats Directive (Council Directive 92/43/EEC)
- EU Birds Directive (Council Directive 79/409/EEC)
- Scottish Executive guidance on Appropriate Assessment (AA)
- EC guidance on Appropriate Assessment
- Current best practice and guidance from Scottish Natural Heritage

1.3 Structure of this report

- Section 1: Introduction: provides background to the Plan and the requirement for SEA and screening for AA.
- Section 2: Appropriate Assessment Procedure: sets out the AA screening methodology and the legislative and consultation requirements.
- Section 3: Nature of Offshore Development: outlines the scope of the AA screening report.
- Section 4: Relevant International Sites: summarises the number and type of international sites that the AA screening report focuses on and their generic conservation requirements.
- Section 5: Analysis of the Plan: lists the ten development sites and summarises the assessment matrices (including potential in-combination effects of the Plan with other plans and programmes) of appendices 2 and 3.

- Section 6: Data Gaps and Uncertainties: identifies and describes data gaps and uncertainties.
- Section 7: Summary of the Assessment: summarises the amount of sites that have been identified as being potentially vulnerable to likely significant effects from the Plan and describes further work that is needed to comply with the requirements of the EU Habitats and Birds Directives² and Scottish Habitats Regulations.

1.4 Strategic Environmental Assessment (SEA)

As previously stated, an SEA of the Plan is also being undertaken in parallel with this AA pre- screening. SEA takes a wider approach to broader sustainability and environmental impacts, rather than the narrow approach that AA takes by focusing on the predicted impacts of plans on international sites. SEA follows the requirements of the SEA Directive (2001/42/EC) whereas AA follows the requirements of the Habitats Directive (Council Directive 92/43/EEC) and the Wild Birds Directive (Council Directive 79/409/EEC).

In line with guidance on AA produced by the Scottish Executive³, data collected during the Scoping Stage of the SEA has also been used to help establish the baseline for the AA. Note that in keeping with the level of the SEA, this AA is a high level and strategic study.

The SEA scoping process identified that international sites could potentially be affected by the Plan and noted the possible need for AA screening to take place originally. The final Environmental Report of the SEA was submitted to Marine Scotland in May 2010 and will be amended after a twelve week consultation period. The results of the AA will feed into the SEA post-adoption statement. Scottish Ministers also require that the AA process should be completed before adoption of the Plan.

² Habitats Directive (Council Directive 92/43/EEC) and the Wild Birds Directive (Council Directive 79/409/EEC).

³ Scottish Executive, 2006. Assessing Development Plans in Terms of the Need for Appropriate Assessment; Interim Guidance May 2006.

2 APPROPRIATE ASSESSMENT PROCEDURE

2.1 Requirements of the Habitats Directive

AA is required where any plan, alone or 'in combination' with other plans, could have an adverse effect on the integrity of Natura 2000 Sites (i.e. Special Protection Areas (SPAs) designated under the recently codified EC Birds Directive⁴ and Special Areas of Conservation (SACs) designated under the EC Habitats Directive⁵). SACs and SPAs in terrestrial areas and Territorial Waters out to 12 nautical miles are designated under the Scottish Habitats Regulations. The UK is also party to the International Convention on Wetlands ('Ramsar' sites), signed in Ramsar, Iran (1971). Ramsar sites, like SPAs and SACs, are approved by Scottish Ministers. The procedure for listing Ramsar sites is the same as that for the classification of SPAs, and where, as in the great majority of cases so far, such sites are also considered for classification as SPAs, joint consultation and consideration is undertaken. For those sites which qualify for designation only under the Ramsar Convention (and not as SAC or SPA) the Scottish Executive⁶ has chosen as a matter of policy to apply the same considerations to their protection as if they were classified as SPAs. As the Ramsar Convention has worldwide coverage, the sites relevant to this project are referred to as 'international sites', an all encompassing term, rather than 'European sites' or 'Natura 2000' sites.

Other nature conservation sites that need to be considered are candidate SACs (cSACs), possible SACs (pSACs), draft SACs (dSACs) SPAs, potential (pSPAs) and Sites of Community Importance. These are all described in the glossary at the end of this document.

Plans that should be subject to the AA process are described in Article 6(3) of the European Habitats Directive:

'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject 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.'

⁴ Council Directive 2009/147/EC on the conservation of wild birds

⁵ Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora

⁶ Scottish Executive, 2006. Assessing Development Plans in Terms of the Need for Appropriate Assessment; Interim Guidance May 2006.

Article 6(4) of the Habitats Directive goes on to discuss alternative solutions, the Imperative Reasons of Overriding Public Interest (IROPI) test and compensatory measures:

'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.'

In Scotland, international sites of nature conservation importance are often underpinned by notification as Sites of Special Scientific Interest (SSSI). AA relates specifically and exclusively to the qualifying interests of international sites and not to the broader conservation interests or requirements under other SSSIs. However, the conservation objectives for international sites often relate to the SSSIs that underpin the international designations.

The Habitats Regulations aim to transpose the requirements of the Habitats Directive and Birds Directives into domestic legislation. These amendments apply to Scotland only. The Offshore Marine Conservation (Natural Habitats, &c.) (Amendment) Regulations 2010 (SI 2010/491)⁷, which came into force on 1st April 2010, were not considered at this time as these apply to areas between 12 and 200 nautical miles from the UK coast and the Plan sites are all within 12 nautical miles. However, if any development associated with the Plan were to occur beyond 12 nautical miles, i.e. beyond Scottish territorial waters, the Offshore Regulations would need to be considered in order to comply with the EU Habitats and Birds Directives.

2.2 The Appropriate Assessment Process

The following table provides a summary of the main stages in the AA process:

Table 2.1: Stages of Appropriate Assessment

Task AA1	Screening – identifying likely significant effects
Task AA2	Appropriate Assessment and ascertaining the effect on site integrity
Task AA3	Assessment of alternative solutions
Task AA4	Assessment where no alternatives exist and where adverse impacts remain

⁷ http://www.opsi.gov.uk/si/si2010/uksi_20100491_en_1, accessed on 14/4/2010.

AA promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the Plan should aim to avoid any negative impacts on international sites by identifying possible impacts early in plan-making, and altering the Plan in order to avoid such impacts. These possible significant impacts should be identified during the screening phase; Task AA1, and adverse effects on the integrity of international sites should be identified in Task AA2. A brief description of the steps is provided below;

a) Task AA1 - Screening

The first consideration in the screening assessment is whether the Plan is directly connected with or necessary to site management for nature conservation. The second consideration is whether the Plan is likely to have a significant effect (either individually or in combination with other plans or projects) on the conservation objectives for which the international sites have been designated, taking into account advice from SNH.

This report represents the preliminary findings of Task AA1; the AA screening phase.

It should be noted that due to the extensive geographical area that the Plan covers, it is likely that a very large number of international sites will be 'screened in' to the AA. As such, this pre-screening report provides a high level assessment of impacts and a detailed evidence based assessment of significance of impacts will be undertaken at the next stage (Appropriate Assessment). If it is found that the Plan is likely to cause a likely significant effect on international sites, these same sites will be assessed to determine whether these effects are adverse.

b) Task AA2 – AA

If the screening assessment, in agreement with SNH, concludes that the Plan is likely to cause significant impacts on any international site, the Plan must be subject to a full AA. The implications of the Plan must then be assessed in view of the site's conservation objectives (i.e. the reasons for which it was designated), so as to ascertain whether or not it will adversely affect the integrity of an international site.

c) Task AA3 – Assessment of Alternative Solutions

This stage should assess alternative ways of achieving the objectives of the Plan that avoid adverse impacts on the integrity of international sites. According to EC guidance⁸, it should include consideration of alternative locations, different scales or designs of development or alternative processes as well as a 'zero option', i.e. a without-plan scenario. It is the responsibility of the competent authority (described in section 2.3) to determine whether alternative solutions exist.

⁸ EC, 2001. Assessment of Plans and Projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC

d) Task AA4 - Assessment where no alternatives exist and where adverse impacts remain

Mitigation measures should be applied during the AA process to the point where no adverse impacts on the site(s) remain. In fact, if the Plan is likely to result in any adverse effects on the integrity of the sites, and no further practicable mitigation is possible, permission could only be granted if the Scottish Government is satisfied that: (a) there are no available alternative solutions, (b) the Plan is required for imperative reasons of overriding public interest (the IROPI test) and (c) compensatory measures are implemented (e.g. compensatory habitat creation) to maintain the coherence of the network of international sites.

2.3 Appropriate Assessment and Land Use Planning Documents

In October 2005, the European Court of Justice ruled that 'appropriate assessments' must be carried out on all land use planning documents in the United Kingdom in order to demonstrate that their implementation would not adversely affect sites designated as of being of European importance. Following the ruling, the Scottish Executive published two draft amendments to the Habitats Regulations in 2007⁹ and again in 2010 to incorporate elements of the newly consolidated Conservation of Habitats and Species Regulations 2010, which primarily apply to England and Wales but also to Scotland in relation to reserved matters.¹⁰

2.4 Role of Organisations

(a) Competent Authorities

In the case of the Plan, the body responsible for overseeing the development of the sites, Marine Scotland, takes the role of competent authority for the purposes of the Habitats Regulations.

Competent authorities are responsible for:

- making an Appropriate Assessment before deciding to undertake, or give any consent, permission or other authorisation for a plan or project likely to have a significant effect on an international site, either alone or in combination with other plans and projects;
- involving Scottish Natural Heritage (SNH) at the outset of plan preparation and taking advice on the need and form of any Appropriate Assessment and the conclusions of such an assessment; and

⁹ Conservation (Natural Habitats & C. Amendment (Scotland) Regulations 2007 and the Conservation (Natural Habitats & C. Amendment (No.2) (Scotland) Regulations 2007

¹⁰ Source: <http://www.jncc.gov.uk/page-1379>

- ensuring that if there is a negative assessment of a plan or project, agreement to that plan or programme is only given if there are no alternative solutions, it must be carried out for imperative reasons of overriding public interest, and any compensatory measures that may be required are secured.

Scottish Guidance¹¹ also recommends that, at each consultative stage of the plan, a short paper should be produced by the competent authority. This should set out *'how the authority has determined that there is not likely to be a significant effect and, where an Appropriate Assessment has been undertaken, the conclusions reached and what action is proposed or has been taken to comply with the Habitats Directive.'*

(b) Scottish Natural Heritage (SNH)

SNH implements, on behalf of the Scottish Government, international conventions and EC Directives on nature conservation encompassed in the Conservation (Natural Habitats, &c.) Regulations 1994 and the Conservation (Natural Habitats, &c.) (Scotland) Amendment Regulations 2007, by:

- providing advice on whether plans and programmes are likely to have a significant effect (either alone or in combination with other plans and projects) when requested to do so;
- advising competent authorities whether a plan or programme is necessary for the management of the site;
- commenting on Appropriate Assessments;
- providing advice on the ecological requirements of any compensatory measures; and
- providing advice on the suitability of any proposed compensatory measures.

The 2007 Habitat Regulations amendments imply that the competent authority can agree if the plan is likely to cause significant impacts, but it cannot 'give effect' to the plan until an AA has been carried out and determined that it will not adversely affect the integrity of the international site(s).

(c) The Scottish Government

The Scottish Government is responsible for:

¹¹ Scottish Executive, 2006. Assessing Development Plans in Terms of the Need for Appropriate Assessment; Interim Guidance May 2006.

- directing the plan-making authority not to give effect to a plan that may have an adverse affect on site integrity;
- securing any necessary compensatory measures to ensure that the overall coherence of the international site network is protected;
- confirming that any compensatory measures are sufficient to maintain the coherence of the international site network; and finally
- informing the European Commission of the measures adopted.

It should be reiterated that, in order to satisfy the Scottish Habitats Regulations, the remit of the AA covers international sites, including Ramsar sites, in addition to the Natura 2000 network described in the EC (2000) and EC (2001) guidance. Therefore the Scottish Government would in practice inform the EC of the measures adopted in relation to international sites rather than solely the Natura 2000 sites described in the EC guidance.

2.5 Determining impacts on International Sites

The significance of a plan's effects on an international site depends on whether the "integrity" of the site is affected. Article 6(3) of the Habitats Directive requires that:

*'the competent national authorities shall agree to the plan... only after having ascertained that it will not adversely affect the **integrity of the site** concerned...'*

To determine what is meant by the "integrity" of the site, it is important to discover why the site was designated. This is a key stage in the AA process. Guidance¹² recommends that the following information should thus be collated, where possible, for each relevant international site:

- Qualifying interest features: These are the reasons why the international site has been designated, for instance the endangered species that occupy the SAC; rare habitats that occur there; or threatened birds that breed or over-winter in the SPA. The AA focuses on the qualifying interest features that were the primary reasons for the site's designation.
- The site's conservation objectives: These help to focus the assessment. Conservation objectives are a statement of the overall nature conservation requirements for a site, expressed in terms of the favourable condition required for the habitats and/or species for which the site was selected.

The EC (2001) guidance states, "A site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self repair and self renewal under dynamic conditions is maintained, and a minimum of external management support is required."

¹² Scottish Executive, 2006. Assessing Development Plans in Terms of the Need for Appropriate Assessment; Interim Guidance May 2006.

The integrity of a site relies on the maintenance of an environment, which will sustain its qualifying features and ensure its continuing viability. Legally the focus of AA is on the site's qualifying features and associated conservation objectives, but these rely fundamentally on ecological processes and functions for their maintenance in a favourable condition and cannot be appraised in isolation from them. Essential to the maintenance of interest features and the integrity of the site are those environmental conditions, which enable key ecological processes and functions to persist. Although the focus of the AA will be on the qualifying features and associated conservation objectives of international sites, wider ecological processes will be considered, where known, to assist in the assessment of potential impacts on the qualifying features and conservation objectives.

2.6 Screening for AA: Methodology

The methodology developed for this AA is based upon the following guidance documents:

- Circular 6/1995 (and 2000 update): Nature Conservation: Implementation in Scotland EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds ("The Habitats and Birds Directives")
- Scottish Executive, 2006. Assessing Development Plans in terms of the need for Appropriate Assessment
- EC, 2001. Assessment of Plans and Projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC; and
- EC, 2000. Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/CEE
- Consultation with SNH established that the principal guidance documents for the AA should be the EC (2000) and EC (2001) guidance listed above.

The basic methodology followed in this report is outlined below:

AA Screening Stage

- determine whether the project or plan is directly connected with or necessary to the management of the site;
- describe the project or plan and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the international site;
- identify the potential effects on the international site; and

- assess the significance of any effects on the international site.
- The following steps remain to be undertaken at the next stage of screening and full strategic AA;
- where a significant effect on an international site remains likely, agreeing method and scope of AA with SNH;
- for each likely significant effect, alone or in-combination, assessing the implications for the international site in light of its conservation objectives;
- listing any avoidance or mitigation measures necessary to avoid adverse effects on site integrity; and
- consulting SNH as part of Regulation 48(3) of the Scottish Habitats Regulations. If it can be ascertained that the plan will not adversely affect the integrity of international sites, the plan can be adopted.

2.7 Consultation

Consultation on the methodology for the screening report took place via one-to-one discussions with SNH at the SEA stakeholder workshop held at the Halcrow Edinburgh office on Tuesday 5th January 2010 and via subsequent email discussions with SNH. Subsequent consultation also established that the correct international sites, with several suggested additions from SNH, had been identified. However, the final list of sites awaits formal agreement with SNH and other consultees. Since informal consultation¹³ with SNH took place several more international sites have been added to the screening process. These sites and their qualifying interest features are listed in full in Appendix 4. This report will be made available to SNH, as statutory consultee and a range of other key stakeholders, to invite comment in preparation for further screening and full strategic AA.

¹³ Email correspondence received 20/1/2010.

3 NATURE OF OFFSHORE DEVELOPMENT

3.1 Scope and objectives of this report

The scope of this pre-screening report comprises the prediction of likely significant effects on international sites from construction, operation and decommissioning of the following potential developments associated with the ten short-term sites;

- the wind turbines themselves;
- export cable routes;
- ancillary structures, e.g. electricity substations;
- operations and maintenance activities; and
- decommissioning activities, e.g. cable removal

The medium-term development options that were proposed in the Plan subsequently to the first draft of this screening report being undertaken have not been assessed but may need to be in the future if they remain as potential options for development.

This report is based on the understanding that all wind turbines, inter-array cabling and offshore substations will be located within the ten short-term development zone boundaries, with the only development outside these zones being export cables and associated onshore structures. It has been assumed that all development zones will be connected directly to the mainland and that offshore inter-connectors will not be used. In practice, cable routes will be optimised but for the purpose of this AA we have assumed a 'straight line connection'. Precise cable routes have not yet been formulated and would need to be considered in more detail in later stages of AA.

Possible turbine numbers and exact locations of turbines within the development zones are not yet known and will be informed by the SEA and AA. There have been no assumptions regarding turbine design. The area occupied by turbines is shown in section 5.1 of this report.

While the decisions regarding offshore wind energy deployment are still being formulated it is possible that new technologies associated with the turbines themselves, or associated infrastructure, will be developed. This may influence where they are located, how they are constructed and their size – any of which could have a bearing on their potential to cause likely significant effects on international sites.

The objectives of this report are to list and collect baseline data on all international sites potentially affected by the Plan. This represents the first stage of task AA1, described in section 2.2. A more detailed examination of the

evidence base of all the habitats and species of all international sites screened into the assessment is needed in order to gain a better understanding of 'likely significant effect'. It is intended to produce this updated screening assessment after the consultees have been given an opportunity to respond to this preliminary report.

3.2 Data on habitats and species

This report does not repeat earlier work carried out for the Scottish Marine Renewables SEA in terms of sightings data. Due to the very large number of international sites potentially affected by the Plan, this report focuses on **summarising the key potential impacts** that will need addressing at the next stage of assessment.

4 INTERNATIONAL SITES BACKGROUND

4.1 Data on international sites

This report has utilised GIS maps of all SACs, SPAs and Ramsar sites from the SNH website.¹⁴

4.2 Conservation objectives of relevant international sites

Although it is difficult to summarise the conservation objectives of all 161 international sites considered in this report, the following box provides an overview of requirements for different habitat types;

For an estuary site: Maintenance of the estuary feature, plus associated flora and fauna, in favourable condition.

For a coastal site: To maintain the status of the European features of this coastal site in favourable condition, allowing for natural change. Features include coastal shingle vegetation and lagoons (within a candidate special area of conservation (SAC), which is also an SPA).

For a marine site: To ensure that there is no net loss of area or change to the structure, biodiversity or distribution pattern of the highly sensitive communities within the site.

For a saltwater lagoon site: Subject to natural change, maintain the lagoon in favourable condition in respect of the key species' communities within the site.

Source: European Commission, 2000.¹⁵

The potentially significant impacts on the habitats and species listed as qualifying features of the international sites are considered in this high-level screening. However, as per section 2.2, the conservation objectives of all 161 sites are not fully considered due to the high level nature of this report.

¹⁴ SNH website: http://gateway.snh.gov.uk/pls/htmldb_ddtdb1/f?p=188:1:7161616774382761459, accessed on 22/12/2009.

¹⁵ http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf, accessed on 25/1/2010.

5 ANALYSIS OF OFFSHORE WIND ENERGY DEVELOPMENT PLAN

5.1 Screening Stage: Introduction

In the SEA screening/scoping report produced by Marine Scotland in June 2009, it is stated that The Crown Estate wish to '*progress offshore wind in ten areas where it is proposed to grant commercial leases.*' These sites fall into four Scottish regions; the Moray Firth, Forth and Tay, the Solway and West Coast. An offshore wind 'demonstrator' project at Aberdeen has not been included in this assessment as it does not yet have an exclusivity agreement. Because The Crown Estate are currently looking for demonstration sites it was not considered appropriate to consider it within the SEA Environmental Report or screening for Appropriate Assessment (AA) at this stage. However, it is noted that this does not mean that AA will not be required at a later date for this site. The Plan may also look at other potential development areas with Scottish territorial waters¹⁶, i.e. within twelve nautical miles of the coastline, but for practical purposes of assessment *at this stage*, the screening will focus on the following ten sites that were awarded exclusivity agreements for development by The Crown Estate.¹⁷ These sites are shown in figure 5.1 below, and, in relation to international sites, in the figures of Appendix 5.

Table 5.1 Proposed Offshore Wind Development Sites

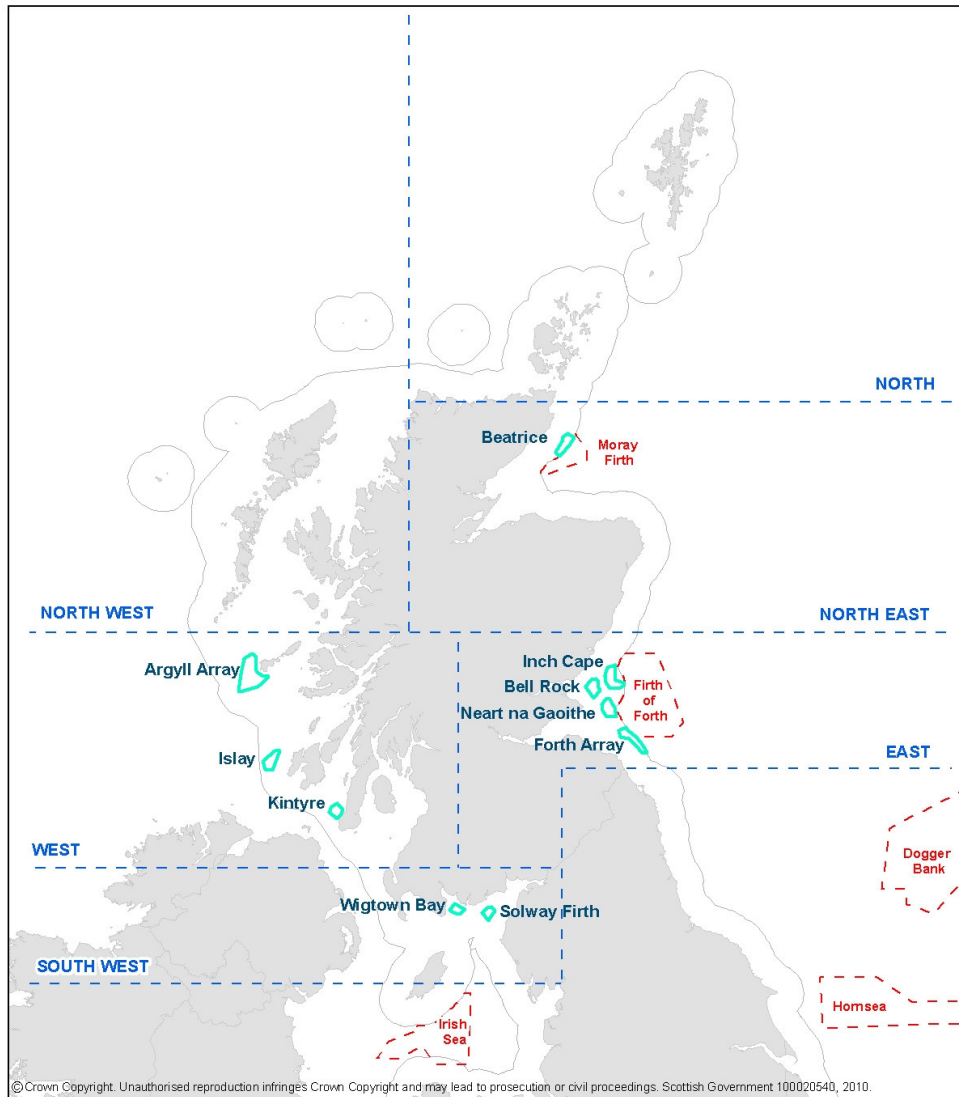
Plan ID	Site Name	Size (MW)	Area sq. km
1	Solway Firth	300	61.46
2	Wigtown Bay	280	51.07
3	Kintyre	378	69.40
4	Islay	680	94.58
5	Argyll Array	1,500	361
6	Beatrice	920	121.30
7	Inch Cape	905	149.90
8	Bell Rock	700	92.82


¹⁶ For example, the Offshore Wind SEA being carried out in parallel with the AA has looked at various options for development in the medium term.

¹⁷ Source: http://www.thecrownestate.co.uk/scottish_offshore_consortia

9	Neart na Gaoithe	360	105.10
10	Forth Array	415	128.40

Figure 5.1 Overview map of development sites



 Halcrow Halcrow Group Ltd Lyndon House 62 Hagley Road Birmingham B16 8PE Tel: +44 (0)121 456 2345 Fax: +44 (0)121 456 1569 www.halcrow.com	Project: Plan for Offshore Wind Energy in STW Drawing: Overview Showing Short Term Options Drawing Number: Figure 2.1 Drawn By: RA Date: April 2010 Checked By: AM Date: April 2010 Approved By: VB Date: April 2010 Drawing Scale: NTS Plot Scale: 1:1 @ A4	Legend - - - Area boundaries - - - Round 3 Zones □ 12nm limit □ Short Term Options
	Location: \\Bham-fs-01\Data\Projects\Water\GIS\Projects\SEA\CEVAAF_Offshore_Wind\GIS\Workspaces\	

A preliminary examination of the offshore wind development sites proposed showed that many, if not all, have the potential to cause significant impacts on internationally designated sites because all of the ten development site locations are in close proximity to international sites. The international sites that are relevant to the ten development sites are shown in the screening matrix of Appendix 1 and the potential impacts of developing the sites are shown in the impact matrices of Appendix 2.

5.2 Task AA1-1: Connection with International Site Management Requirements

Following a review of the Plan and consultation with SNH, the findings of the first stage of Task AA1 (described in section 2.2 of this report) were that the Plan is *not* directly connected with the management (for conservation purposes) of any international sites within Scottish territorial waters, and therefore the next AA screening methodology steps were followed.

5.3 Task AA1-2: Development that will not affect the International Sites

As the Plan is still being developed, there are many uncertainties with regard to its potential impact on international sites. Following the precautionary principle enshrined in the EU Habitats and Birds Directives¹⁸, it is prudent to assume that implementation of the Plan could potentially affect a large number of international sites in various direct or indirect ways. The only *SEA topic* 'scoped out' at the SEA scoping stage was 'air quality.' It has therefore been assumed that there will be no likely significant effects on any of the international sites as a result of changes in air quality. However, various other qualifying features of international sites have been *screened*¹⁹ out, as described in the sections below and in Appendix 1. However, this report shows that some international sites may need to be screened back in and readdressed in a full AA, depending upon the how the Plan develops. All other potential impacts on the sites screened in to the assessment are shown in Appendix 2.

5.4 Task AA1-3: Determining likely significant effect

This stage of the screening has only just begun as the full range of international sites to be included in the assessment has not been finally agreed with SNH, Marine Scotland and other consultees. However, the preliminary list of sites entering the screening process is described in section 5.5 and the first stage of impact assessment is provided on Appendix 2 and summarised in section 5.6. The rationale for screening sites in or out of the assessment is provided in Appendix 1.

5.5 International Sites entering the screening process

The list of sites entering the screening process included 49 SACs, 80 SPAs and 34 Ramsar sites, totalling 163 internationally designated sites. Many qualifying features of these sites have subsequently been 'scoped out' but only twelve international sites have been scoped out entirely. The international sites scoped out are as follows:

¹⁸ EC, 2000. Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/CEE, page 11.

¹⁹ See Glossary at the end of this document for definitions of 'screening' and 'scoping' in this context

- Loch of Inch and Torrs Warren SPA;
- Jura, Scarba & the Garvellachs SPA;
- Arran Moors SPA;
- Cnuic agus Cladach Mhuile SPA;
- Solway Mosses North SAC;
- Eilean na Muice Duibhe SAC;
- Rinns of Islay SAC;
- Glac na Criche SAC;
- Feur Lochain SAC;
- East Caithness Cliffs SAC;
- Mull of Galloway SAC; and
- Burrow Head SAC

Some sites were entirely screened out except for one species or group of bird species. This includes the Rum SAC, Caithness and Sutherland Peatlands SAC and Muir of Dinnet SAC, which were screened in solely for otters. Several sites distant from the wind farms were screened in solely for diadromous fish species that had the potential to migrate to the vicinity of the wind farms. Where SPA and Ramsar sites are located a further distance from wind farms the number of migratory species that could potentially be affected has been listed as these species were judged to be the only qualifying interest features at risk from the development of the Plan. To maximise efficiency, the focus of the search for sites to screen in was on island, coastal, estuarine or riverine sites. Many terrestrial sites that are located the same distance away as international sites that have been included in this assessment were not subject to the same screening process.

The majority of international sites assessed in this screening report fall within Scottish Territorial Waters. The list of sites entering the screening includes only one candidate international site, the Jura, Scarba and the Garvellachs Special Protection Area, which is still at the consultation stage and awaiting official designation.

Out of the complete list of international sites described in Appendix 2, the following sites outside of Scottish Territorial Waters were also screened into the assessment due to the potential for their qualifying species to be migrate and be present within the Scottish Territorial Waters;

- eight sites located in English waters (SACs and SPAs designated for seal, fish and bird species); Farne Islands SPA, Duddon Estuary SPA and

Ramsar sites, Lindisfarne SPA and Ramsar sites, Morecambe Bay SPA and Ramsar sites, Berwickshire and North Northumberland Coast SAC;

- two sites in Northern Irish waters (SACs designated for seals); Murlough SAC, Strangford Lough SAC;
- three sites in Dutch waters (SACs designated for dolphins); Noordzeekustzone SAC, Waddenzee SAC, Voordelta SAC; and
- two sites in German waters (SACs designated for dolphins, porpoises and seals); NTP S-H Wattenmeer und angrenzende Küstengebiete SAC and Dogger Bank SAC.

The following tables show the summarised impacts of the preliminary screening assessment on all international sites screened into the assessment. Due to the large number of sites potentially affected by the plan, the impacts are shown as broad categories of impact. However, it is expected that at the next stage of screening, which will include a more detailed examination of both the evidence base and conservation objectives of the international sites, these impacts will be described in more detail. Some impacts could be potentially positive, but they have been included in the assessment as they could have an overall bearing on whether effects are likely to be significant or not. This includes fishery exclusion zones around wind arrays, which could potentially increase the availability of prey species for some designated species.²⁰

²⁰ The success of fishery exclusion zones could be variable. A nephrops exclusion zone in the Firth of Forth may have useful results for cross-reference. Exclusion areas for the Robin Rigg Offshore Wind Farm are also likely to be monitored in terms of the success of various species.

5.6 Predicted impacts on International Sites screened in to the assessment

Table 5.2 Summarised Impacts on SAC Habitats and Species

Qualifying interest feature	Impact pathway	Impact
Atlantic salt meadows	Cable installation/ removal	Damage to intertidal habitat, disruption of sediment patterns
	Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation
Coastal shingle vegetation outside the reach of waves	Cable installation/removal	Direct loss or degradation of habitat
	Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation
Dune habitats and associated species	Cable installation/removal	Direct loss or degradation of habitat
	Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat
	Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation

Qualifying interest feature	Impact pathway	Impact
Machair (Supralittoral sediment)	Cable installation/ removal	Direct loss or degradation of habitat
	Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation; could affect machair flora and waders and corncrake, <i>Crex crex</i>
Shallow inlets and bays and lochs and bays	Cable installation/ removal	Direct loss or degradation of habitat
	Cable protection leading to scour and hydrography changes	Habitat loss or degradation through erosion
	Increased vessel activity and associated ship wash	Habitat loss or degradation through erosion
	Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna
	Increased vessel activity	Introduction of invasive species from vessels, e.g. through ballast discharge
Estuaries	Trawling surveys and construction activities	Damage to seabed habitat, disruption of sediment patterns
	Cable installation/ removal	Direct habitat loss from excavation or removal
	Increased vessel activity leading to ship wash	Habitat erosion and loss

Qualifying interest feature	Impact pathway	Impact
	Increased vessel activity	Introduction of invasive species from vessels, e.g. through ballast discharge
	Increased vessel activity; increased pollution risk or mobilisation of contaminated sediments	Toxicity effects on estuarine flora and fauna
	Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on estuarine flora and fauna
Intertidal mudflats and sandflats	Cable installation, substation construction	Damage to intertidal habitat, disruption of sediment patterns
	Cable protection leading to scour and hydrography changes	Habitat loss or degradation through erosion
	Increased vessel activity and associated ship wash	Habitat loss or degradation through erosion
	Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna
Subtidal sandbanks	Trawling surveys, construction/ decommissioning activities	Trawling surveys and construction activities could cause damage to seabed habitat, disrupt sediment patterns
	Cable protection leading to scour and hydrography changes	Habitat loss or degradation
	Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna

Qualifying interest feature	Impact pathway	Impact
Reefs	Trawling surveys and construction/decommissioning activities	Damage to reef habitat, disruption of sediment patterns
	Cable installation/ removal	Direct habitat damage or loss
	Construction or decommissioning leading to disturbance of contaminated sediment	Toxic effects on flora and fauna
	Cable protection leading to scour and hydrography changes	Habitat loss or degradation
	Construction operations or scour from installations leading to changes in sediment patterns	Smothering of reef habitat from sediment disruption
Diadromous fish species (River lamprey, Sea Lamprey, Salmon)	Trawling surveys and construction/decommissioning activities	Damage to river lamprey habitat, disruption of sediment patterns
	Trawling surveys and construction/decommissioning activities	Disruption of movement between spawning and nursery grounds
	Seismic surveys	Noise injury
	Construction or demolition activities	Noise injury

Qualifying interest feature	Impact pathway	Impact
	Turbine operation	Noise disturbance
	Turbine operation; contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or species mortality
	Construction or demolition activities leading to increased turbidity	Impacts on ocean-dependent life cycle stage
	Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Habitat degradation or species mortality
Pinnipeds (Common seal, Grey Seal)	New fishery exclusion zones	Increased prey species (population and/or assemblage)
	Seismic surveys	Noise injury/ behavioural response
	Construction of turbines, including pile-driving, cable laying and decommissioning	Noise injury/ behavioural response/ habitat exclusion
	Construction of turbines, cable laying and decommissioning	Direct habitat degradation
	Construction of turbines, cable laying and decommissioning; disturbance of contaminated sediments	Indirect habitat degradation
	Construction of turbines, cable laying and decommissioning; increased turbidity	Reduced visibility

Qualifying interest feature	Impact pathway	Impact
	Cable installation or removal	Physical damage to haul-out sites
	Cable installation or removal	Noise disturbance
	Presence of permanent near-shore structures on sea bed, e.g. cable armouring	Changes to hydrodynamic function and possible erosion of haul-out sites
	Turbine operation	Noise disturbance
	Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or physiological impacts
	Increased vessel activity	Noise disturbance
	Increased vessel activity	Collision risk
	Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects or indirect impacts on habitat or prey species
Otter	Increased vessel movement	Noise or visual disturbance
	Increased vessel movement leading to increased pollution risk	Direct toxicity effects or indirect impacts on habitat or prey species

Qualifying interest feature	Impact pathway	Impact
	Installation or removal of turbines, cables or other structures	Noise disturbance
	Construction of turbines, cable laying and decommissioning	Direct habitat degradation
	Construction of turbines, cable laying and decommissioning; disturbance of contaminated sediments	Indirect habitat degradation
	Construction of turbines, cable laying and decommissioning; increased turbidity	Reduced visibility
Bottlenose dolphin	New fishery exclusion zones	Increased prey species (population and/or assemblage)
	Turbine operation; contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or species mortality
	Construction or demolition activities, e.g. pile driving, leading to increased noise	Habitat avoidance, behavioural response, physiological damage
	Construction or demolition activities leading to increased turbidity	Impaired vision
	Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Habitat degradation or species mortality
	Cable installation or removal	Noise disturbance

Qualifying interest feature	Impact pathway	Impact
	Presence of permanent near-shore structures on sea bed, e.g. cable armouring	Changes to hydrodynamic function of habitat
	Turbine operation	Noise disturbance
	Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or physiological impacts
	Increased vessel activity	Noise disturbance
	Increased vessel activity	Collision risk
	Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects or indirect impacts on habitat or prey species
	Cable operation - electromagnetic fields	Possible impacts on physiology/ behaviour
Harbour Porpoise	Construction or demolition activities leading to increased turbidity	Impaired vision for transitory porpoises
	Cable installation or removal	Noise disturbance to transitory porpoises
	Turbine operation	Noise disturbance to transitory porpoises

Qualifying interest feature	Impact pathway	Impact
	Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Physiological impacts to transitory porpoises
	Increased vessel activity	Noise disturbance to transitory porpoises
	Increased vessel activity	Collision risk to transitory porpoises
	Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects on porpoises or prey species
	Cable operation electromagnetic fields	Possible impacts on physiology/ behaviour

Table 5.3 Summarised Impacts on SPA and Ramsar Habitats and Species²¹

Qualifying interest feature	Impact pathway (Source)	Impact
SPA/Ramsar bird	Installation of cables through intertidal zone	Loss of intertidal foraging habitat due to e.g. excavation works/laying of cables

²¹ Each impact is not applicable to all bird species. However, one or more bird species is likely to be affected by each impact.

Qualifying interest feature	Impact pathway (Source)	Impact
species	Increased vessel traffic	Physical disturbance and/or displacement from key habitat
	Installation of cables through intertidal zone	Disturbance to roost sites
	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.
	Presence and operation of turbines	Turbine collision risk
	Night time lighting associated with turbines	Turbine collision risk, disorientation, habitat avoidance
	Noise/visual disturbance from all construction, cable laying & decommissioning activities and blade operation	Feeding grounds avoidance, disturbance of flight patterns
	Noise/visual disturbance from increased vessel activity	Feeding grounds avoidance, disturbance of flight patterns
	Construction and operation direct and indirect changes to habitat, e.g. through sediment dynamics	Change in availability of food sources

5.7 Summary of ‘in combination effects’

Table 5.4 below summarises the principal potential in-combination effects on the qualifying features identified as at risk of being affected by plan - related activities in combination with other identified activities. These effects are summarised from the in-combination matrix of appendix 3.

Table 5.4 Potential in-combination effects

Qualifying Interest Feature	Nature of effect	Possible combined effect on features
Migratory fish species (sea and river lampreys, Atlantic salmon)	Construction, operation and decommissioning; direct and indirect.	Wind farm associated activities such as cable routing, installation and operation have the potential to combine with other activities (e.g. other wind farms and oil and gas related activities) to create barriers to migratory fish from electromagnetic fields (EMF), construction noise and increased suspended sediment.
Marine and coastal habitats (Atlantic salt meadows, Coastal shingle vegetation outside the reach of waves, Coastal dune heathland, Dune grassland, Shifting dunes, Shifting dunes with marram , Dunes with juniper thickets, Humid dune slacks, Lime-deficient dune heathland with crowberry, Estuaries, Glasswort and other annuals colonising mud and sand, Intertidal mudflats and sandflats, Reefs, Shallow inlets and bays and Subtidal sandbanks).	Construction, operation and decommissioning; direct and indirect.	Wind farm associated activities such as cable routing, installation and operation have the potential to combine with other activities (e.g. other wind farms and oil and gas related activities) to cause e.g. cumulative habitat loss or disturbance and/or degradation of these habitats (e.g. by smothering or changes in hydro- and sediment dynamics due to the physical presence of related structures).
Breeding and non-breeding bird aggregations	Construction, operation and decommissioning; direct	Wind farm associated activities have the potential to combine with other activities (e.g. other wind farms and oil and gas related activities) to cause the following combined effects: <ul style="list-style-type: none"> - Potential exclusion from key avian foraging habitat. - Disturbance or exclusion from roost or breeding sites. - Modification of migratory routes due to increased area of turbines. - Potential increased risk of collision with turbines due to increased number of turbines in area.

Qualifying Interest Feature	Nature of effect	Possible combined effect on features
Cetaceans and seals (bottlenose dolphin, common seal, grey seal)	Construction, operation and decommissioning; direct and indirect	<p>Wind farm associated activities have the potential to combine with other activities (e.g. other wind farms and oil and gas related activities) to cause the following combined effects:</p> <ul style="list-style-type: none"> - Disturbance and /or physiological damage due to elevated noise during construction and operation of both sites (e.g. piling). - Long term avoidance of the area. - Increased collision risk with construction vessels. - Potential reduction²² in food resource due to impacts on prey species and habitat loss/disturbance. - Potential conflict with commercial fishing due to displacement of fishing effort or different fisheries into new areas, e.g. increased 'bycatch' risk or increased competition for cetacean and seal prey species - Physical barrier to movement.

5.8 International Site Screening Results

The following table shows the overall assessment results of the Plan alone and in-combination with other plans, programmes and projects on the international sites. Due to the high-level nature of this screening, and the need for further, more detailed, examination of the habitats and species evidence base, the in-combination effects are left as uncertain rather than ruling out any likely significant effects, in accordance with the precautionary principle.

²² It is uncertain whether the presence of the offshore wind sites will create a sanctuary for prey species, causing them to aggregate and thereby increase food resource. For the purposes of the AA the Precautionary Principle is applied and a reduction in food resource is assumed to be a possible significant effect.

Table 5.5: International site screening summary

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Solway Firth/ Wigtown Bay	Solway Firth SAC	✓	✓	✓
Solway Firth/ Wigtown Bay	Upper Solway Flats & Marshes SPA/Ramsar	✓	✓	✓
Solway Firth/ Wigtown Bay	Castle Loch, Lochmaben SPA	✓	?	✓
Solway Firth/ Wigtown Bay	Castle Loch, Lochmaben Ramsar	✓	?	✓
Solway Firth/ Wigtown Bay	River Bladnoch SAC	✓	?	✓
Solway Firth/ Wigtown Bay	Loch of Inch and Torrs Warren SPA	✓	✓	✓
Solway Firth/ Wigtown Bay	Loch of Inch and Torrs Warren Ramsar	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Solway Firth/ Wigtown Bay	Loch Ken and River Dee Marshes SPA	✓	?	✓
Solway Firth/ Wigtown Bay	Loch Ken and River Dee Marshes Ramsar	✓	?	✓
Solway Firth/ Wigtown Bay	Luce Bay and Sands SAC	✓	?	✓
Solway Firth/Wigtown Bay	River Eden SAC	✓	?	✓
Solway Firth/ Wigtown Bay	Murlough SAC, Northern Ireland	✓	?	✓
Solway Firth/ Wigtown Bay	Strangford Lough SAC, Northern Ireland	✓	?	✓
Solway Firth/Wigtown Bay	Duddon Estuary SPA/Ramsar, England	✓	?	✓
Solway Firth/Wigtown Bay	Morecambe Bay SPA, England	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Solway Firth/Wigtown Bay	Morecambe Bay Ramsar, England	✓	?	✓
Kintyre/Islay	South-East Islay Skerries SAC	✓	✓	✓
Kintyre/Islay	Eilean na Muice Duibhe SPA	✓	✓	✓
Kintyre/Islay	Eilean na Muice Duibhe Ramsar	✓	✓	✓
Kintyre/Islay	Rinns of Islay SPA	✓	✓	✓
Kintyre/Islay	Rinns of Islay Ramsar	✓	✓	✓
Kintyre/Islay	The Oa SPA	✓	✓	✓
Kintyre/Islay	Laggan (Islay) SPA	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Kintyre/Islay	Bridgend Flats, Islay SPA/Ramsar	✓	✓	✓
Kintyre/Islay	Gruinart Flats, Islay SPA/Ramsar	✓	✓	✓
Kintyre/Argyll Array	Eileanan agus Sgeiran Lios mor SAC	✓	✓	✓
Kintyre/Argyll Array	Ascrib, Isay and Dunvegan SAC	✓	✓	✓
Kintyre	Kintrye Goose Roosts SPA/Ramsar	✓	✓	✓
Kintyre	Ailsa Craig SPA	✓	?	✓
Islay	Oronsay SAC	✓	?	✓
Islay	Oronsay and South Colonsay SPA	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Islay	North Colonsay & Western Cliffs SPA	✓	✓	✓
Islay	Murlough SAC, Northern Ireland	✓	?	✓
Islay	Strangford Lough SAC, Northern Ireland	✓	?	✓
Argyll Array	Tiree Machair SAC	✓	?	✓
Argyll Array	Loch a' Phuill SAC	✓	?	✓
Argyll Array	Coll Machair SAC	✓	?	✓
Argyll Array	Canna and Sanday SPA	✓	✓	✓
Argyll Array	Tiree (corncrake) SPA	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Argyll Array	Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA	✓	✓	✓
Argyll Array	Coll SPA	✓	✓	✓
Argyll Array	Coll (corncrake) SPA	✓	✓	✓
Argyll Array	Coll Ramsar	✓	✓	✓
Argyll Array	Mingulay & Berneray SPA	✓	✓	✓
Islay, Argyll Array	Treshnish Isles SAC	✓	✓	✓
Islay, Argyll Array	Treshnish Isles SPA	✓	?	✓
Argyll Array	Rum SAC	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Argyll Array	Rum SPA	✓	?	✓
Argyll Array	South Uist Machair and Lochs SPA	✓	?	✓
Argyll Array	South Uist Machair and Lochs Ramsar	✓	?	✓
Argyll Array	Aird and Borve, Benbecula SPA	✓	?	✓
Argyll Array	Monach Isles SPA	✓	?	✓
Argyll Array	North Uist Machair and Islands SPA	✓	?	✓
Argyll Array	North Uist Machair and Islands Ramsar	✓	?	✓
Argyll Array	Mointeach Scadabhaigh SPA	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Argyll Array	Lewis Peatlands SPA	✓	?	✓
Argyll Array	Lewis Peatlands Ramsar	✓	?	✓
Argyll Array	Flannan Isles SPA	✓	?	✓
Argyll Array	Shiant Isles SPA	✓	?	✓
Argyll Array	Loch Shiel SPA	✓	?	✓
Kintyre/Islay/Argyll Array	Monach Islands SAC	✓	✓	✓
Kintyre/Islay/Argyll Array/Beatrice	North Rona SAC	✓	✓	✓
Beatrice	Moray Firth SAC	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Beatrice	Inner Moray Firth SPA	✓	✓	✓
Beatrice	Inner Moray Firth Ramsar	✓	✓	✓
Beatrice	Moray and Nairn Coast SPA	✓	✓	✓
Beatrice	Moray and Nairn Coast Ramsar	✓	✓	✓
Beatrice	Cromarty Firth SPA	✓	✓	✓
Beatrice	Cromarty Firth Ramsar	✓	✓	✓
Beatrice	Troup, Pennan and Lion's head SPA	✓	✓	✓
Beatrice	East Caithness Cliffs SPA	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Beatrice	Berriedale & Langwell Waters SAC	✓	✓	✓
Beatrice	North Caithness Cliffs SPA	✓	✓	✓
Beatrice	Caithness & Sutherland Peatlands SAC	✓	?	✓
Beatrice	Caithness & Sutherland Peatlands SPA	✓	?	✓
Beatrice	Caithness & Sutherland Peatlands Ramsar	✓	?	✓
Beatrice	Caithness Lochs SPA/Ramsar	✓	✓	✓
Beatrice	Dornoch Firth and Morrich More SAC	✓	✓	✓
Beatrice	Dornoch Firth and Loch Fleet SPA	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Beatrice	Dornoch Firth and Loch Fleet Ramsar	✓	✓	✓
Beatrice	River Oykel SAC	✓	✓	✓
Beatrice	Faray and Holm of Faray SAC	✓	✓	✓
Beatrice	Sanday SAC	✓	✓	✓
Beatrice	River Spey SAC	✓	✓	✓
Beatrice	River Moriston SAC	✓	✓	✓
Beatrice	Tips of Corsemaul and tom Mor SPA	✓	?	✓
Beatrice	Loch of Strathbeg SPA	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Beatrice	Papa Westray SPA	✓	?	✓
Beatrice	East Sanday Coast SPA	✓	?	✓
Beatrice	East Sanday Coast Ramsar	✓	?	✓
Beatrice	West Westray SPA	✓	?	✓
Beatrice	Rousay SPA	✓	?	✓
Beatrice	Calf of Eday SPA	✓	?	✓
Beatrice	Orkney Mainland Moors SPA	✓	?	✓
Beatrice	Auskerry SPA	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Beatrice	Hoy SPA	✓	?	✓
Beatrice	Copinsay SPA	✓	?	✓
Beatrice	Sule Skerry and Sule Stack SPA	✓	?	✓
Beatrice	North Rona and Sula Sgeir SPA	✓	?	✓
Beatrice	Switha SPA	✓	?	✓
Beatrice	Pentland Firth Islands	✓	?	✓
Beatrice	Loch of Strathbeg Ramsar	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	River Teith SAC	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Barry Links SAC	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Tay & Eden Estuary SAC	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Tay & Eden Estuary SPA	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Tay & Eden Estuary Ramsar	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	River Tay SAC	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Cameron Reservoir SPA/ Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Forth Islands SPA	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Isle of May SAC	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	River South Esk SAC	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	River Tweed SAC	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Montrose Basin SPA	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Montrose Basin Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Forth SPA	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Forth Ramsar	✓	✓	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	St Abb's Head to Fast Castle SPA	✓	✓	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape, Bell Rock, Neart na Goithe, Forth Array,	Fowlsheugh SPA	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch Leven SPA	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch Leven Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Slammanan Plateau SPA	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Fala Flow SPA	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Fala Flow Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Grenlaw Moor SPA	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Din Moss / Hoselaw Loch SPA/Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Westwater SPA/Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth	Gladhouse Reservoir SPA/Ramsar	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in-combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Array				
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch of Skene SPA	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch of Skene Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Muir of Dinnet SAC	✓	?	✓
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Muir of Dinnet SPA	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape, Bell Rock, Neart na Gaoithe, Forth Array	Muir of Dinnet Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Gaoithe, Forth Array	South Tayside Goose roosts SPA/Ramsar	✓	?	✓
Inch Cape, Bell Rock, Neart na Gaoithe, Forth Array	Imperial Dock Lock, Leith SPA	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Berwickshire and North Northumberland Coast SAC, England	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Waddenzee SAC, Netherlands	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Noordzeekustzone SAC, Netherlands	✓	?	✓

Scottish Offshore Site Name	International Site (s)	Possible significant effect on site integrity from Plan alone? ✓ ✗ ?	Possible significant effect on site integrity from plan in combination with other plans and projects? ✓ ✗ ?	Further strategic level screening for AA needed? ✓ ✗ ?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Voordelta SAC, Netherlands	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Doggerbank SAC, Germany	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	NTP S-H Wattenmeer und angrenzende Küstengebiete SAC, Germany	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Lindisfarne SPA, England	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Lindisfarne Ramsar, England	✓	?	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Farne Islands SPA, England	✓	?	✓

6 DATA GAPS AND UNCERTAINTIES

6.1 Overview

The following data gaps have been identified from previous work undertaken that relates to Scottish territorial waters. These data gaps apply to the habitats and species listed as qualifying features in the international sites likely to be affected by the Plan. Data gaps for fish have been provided as salmon and three species of lamprey have been identified as qualifying features in the screening matrix. It should be noted that this information has been adapted from studies relating to wave and tidal energy generation devices. Whilst some of the potential effects may be very device specific, it is likely that many of these data gaps are applicable to all offshore wind farms. The data gaps are therefore included for comprehensiveness. The principal data gaps identified relate to marine mammals, marine birds, fish and shellfish and the Plan itself. However, it is likely that at the next stage of screening, as the evidence base on all habitats and species is examined in more detail, further data gaps will be identified and these tables will be comprehensively updated.

6.2 Marine Mammals

Table 6.1 Marine Mammals – Data Gaps and Uncertainties

Data Gap	Unknown	Potential to Fill Data Gap
Seals distribution and abundance	<ul style="list-style-type: none"> • Fine-scale at-sea distribution over most areas. • Why areas of high tidal flow are favoured by many species, and three dimensional uses of these areas. 	Individual project related site specific survey.
Cetacean distribution and abundance	<ul style="list-style-type: none"> • Fine-scale distribution in most areas • Winter distribution, and seasonal movements and population trends not well understood. 	The results of the SCANS II project is expected to further understanding in this area.
Capacity of key senses in seals and cetaceans, and abilities to detect devices	<ul style="list-style-type: none"> • Mysticete (baleen whale) hearing unknown. • Sensory abilities of large whales • How all species use their senses to detect and catch prey. • Whether outputs from devices will mask biologically relevant 	Observation / monitoring of appropriately sited demonstration devices deployed in the field.

	<p>cues.</p> <ul style="list-style-type: none"> • How much warning information devices will produce. • How construction of submarine structures (e.g. foundations, cables) and any potential noise and vibration will be perceived by echolocating species. • Impact of environmental circumstances (e.g. darkness, turbid water, background noise) on perception distances and hence escape options. • Severity of sensory abilities (such as echolocation) being compromised by other activities such as foraging, social interaction etc. (Collisions with nets suggests that Confusion / Distraction occurs) 	
<p>Collision risk – behavioural response of seal and cetacean species to marine renewables.</p>	<ul style="list-style-type: none"> • Reaction distances to submarine structures. • Precise responses on detection of structures (attraction / avoidance / evasion etc). • Confusion - Interactions between multiple structures on avoidance/evasion options. • Illogical behaviour - how marine mammals will perceive then respond to novel structures in the marine environment. • Behavioural responses of animals once structures are detected. • Surfacing options when animals at or past their aerobic diving limits. Impacts of buoyancy constraints on vertical manoeuvring options. • Attraction to aggregations of prey species if turbine structures act as artificial reefs; subsequent increased collision risk with vessels 	<p>Escape options modelling: deskbased modelling of avoidance options given the sensory and mobility of the different species and the upstream sensory cues put out by marine renewable devices. Observation / monitoring of appropriately sited demonstration devices deployed in the field.</p>
<p>Data source: adapted from Scottish Marine Renewables SEA: Environmental Report Section C SEA Assessment: Chapter C9: Marine Mammals. March 2007.</p>		

6.3 Marine Birds

Table 6.2 Marine Birds – Data Gaps and Uncertainties

Data Gap	Unknown	Potential to Fill Data Gap
Seabirds distribution and abundance	Fine-scale distribution in most areas. Information on vertical distribution, hotspots and swimming behaviour within the water column is required. Local demographic trends in bird populations	Individual project related site specific survey.
Bird distribution within the water column	The data collected on depth usage by marine birds is exclusively on breeding birds in summer. These findings should not be extrapolated to other times of the year. Nothing is known about the depth usage of juvenile birds, which tend to have lower foraging proficiency so may forage more extensively at night than adults to compensate.	Individual project related site specific survey.
Capacity of key senses in birds, and abilities to detect devices	Effects of turbidity on use of vision and switching to dependence on other senses not known Importance of sound underwater. Some data on above surface detection abilities of birds in flight exists. There is no similar data for birds underwater.	Observation / monitoring of appropriately sited demonstration devices deployed in the field.
Collision risk – behavioural response of marine bird species to marine renewables.	Some data on above surface evasion behaviour of birds in flight. There is no similar data for birds underwater. Behaviour outside the breeding season and in younger age classes is poorly understood	Observation / monitoring of appropriately sited demonstration devices deployed in the field.
Ecological impacts	Implications for habitat exclusion, especially in favoured habitats. Long-term impacts of short-term behavioural responses	Observation / monitoring of appropriately sited demonstration devices deployed in the field.
Physiological impacts	Magnitude of collisions required to cause significant injuries. Relative vulnerabilities of different parts of the body in different species. Potential collision rates in bird populations.	Observation / monitoring of appropriately sited demonstration devices deployed in the field.

Data source: Scottish Marine Renewables SEA: Environmental Report Section C SEA Assessment: Chapter C8: Marine Birds. March 2007.		

The RSPB (2010) has also recommended various measures in relation to offshore wind farms and birds, including further aerial and ship-based surveys, research into migration patterns, foraging ranges and areas used by priority species and data collection for population modelling of priority species.

6.4 Fish and shellfish

Table 6.3 Fish and shellfish – Data Gaps and Uncertainties²³

Data Gap	Potential to Fill Data Gap
Baseline spatial data on fish distribution and abundance and migration routes. Large scale distribution and abundance is well known for commercially important species, and more detailed data on local populations and mechanisms controlling population size is required.	A useful tool would be a fish map (similar to the prototype ICES FISH_MAP for the North Sea) for the west coast of Scotland to provide the baseline for any impact assessment or to identify gaps.
Collision risk ²⁴ - behavioural response of fish species to marine renewables.	<p>Escape options modelling: desk-based modelling of avoidance options given the sensory and mobility of the different species and the upstream sensory cues put out by marine renewable devices.</p> <p>Monitoring fish interactions with prototype devices operating at sea. The use of video cameras, sonar equipment and surface observers to monitor interactions as they occur, including the potential cues given out by the devices (sound, visibility, vibrations etc) and any environmental factors mediating the interactions such as turbidity, prey abundance, bubbles in the water column etc.</p> <p>Alternatively, the physical presence of the devices could be replaced with the cues alone to investigate avoidance responses.</p>
Collision risk – sensory capabilities. Of the marine vertebrates at risk of collisions with marine devices, the sensory capabilities of fish are best understood. However, to understand at what distance these species will perceive marine renewable devices and hence what avoidance responses they are capable of, better information on senses is required.	Monitoring fish interactions with prototype devices operating at sea.

²³ It is not known to what extent migratory fish species designated under the EU Habitats Directive would be affected by these risks, if at all.

²⁴ This table is taken from an SEA of wave and tidal devices; collision risk between fish and wind turbine bases is not considered to be of concern.

Collision risk – influence of schooling behaviour. Pelagic species, in particular, form highly cohesive schools. Because the movements of each individual are not independent, the behaviour of fish schools to collisions is part way between that of a single independent fish and a less manoeuvrable super-organism the size of the entire school.	Monitoring fish interactions with prototype devices operating at sea.
Physiological impact of collisions and the magnitude of impact required to cause injury.	<ul style="list-style-type: none"> • Study of natural physical injuries in wild marine vertebrates. • Once devices have been installed, monitoring could be undertaken to record collision occurrence. This could include pathological follow up studies of any beach-cast animals in the area.
Highly limited data to enable an understanding of the potential geographic footprint of change in hydrodynamic and sediment processes.	Modelling predicted change, with field survey where feasible, to increase understanding of the potential geographic extent of change.
There is limited understanding of finfish and shellfish sensitivity to noise related impacts, and behavioural and physiological impacts.	Monitoring fish interactions with prototype devices operating at sea.
Data source: adapted from Scottish Marine Renewables SEA: Environmental Report Section C SEA Assessment: Chapter C7: Fish and shellfish. March 2007.	

6.5 Plan data gaps

In accordance with the EC (2001) guidance, a good description of the following aspects of a plan is necessary to determine 'likely significant effect':

Table 6.4: Plan Data Gaps

Plan elements	Current knowledge
Size, scale, area, sea-bed take, etc.	Approximate areas and scale known
Plan sector	Known
Physical changes that will flow from the project or plan (from excavation, piling, dredging, etc.)	Not known but could be estimated
Resource requirements	Not known but could be estimated

Emissions and waste (disposal to land, water or air)	Not known but could be estimated
Transportation requirements	Not known but will be crucial for determining vessel traffic impacts on flora and fauna
Duration of construction, operation, decommissioning, etc.	Not known but will be crucial for determining vessel traffic impacts on faunal species due to seasonal abundance and distribution
Plan implementation period	Not known but could be estimated
Distance from international site or key features of the site	Approximate distances known
Cumulative impacts with other projects or plans	Not known but attempts to estimate have been made in this report
Source: adapted from EC, 2001. (Box 1, page 18)	

6.6 Other data gaps

As well as data gaps on international sites and their associated qualifying interest features there are also data gaps in the following areas;

- the effects of climate change on the marine environment of Scotland; and
- the amount and nature of wave energy resource that will be developed in Scottish territorial waters (this may influence the nature and location of offshore wind development)

In addition, there are a large number of uncertainties due to the scale at which this pre-screening for AA has been undertaken, i.e. a large section of Scottish territorial waters and effects anticipated on international sites located within the waters of several other countries. It is anticipated that those more site-specific issues will be addressed at the project/regional level.

There are also large data gaps on the effects of marine renewable energies on the environment. Recently Inger *et al.*, 2009, PRIMaRE, Exeter University, put an urgent call out for research to be carried out in this field and Shields *et al.*, 2009, North Highland College demonstrated the issues surrounding lack of data in the Pentland Firth. However, work undertaken by the Scottish Association for Marine Science (SAMS)²⁵ and COWRIE²⁶, amongst others, is helping to plug these gaps in research. SAMS current research in this area includes work on the following;

²⁵ <http://www.sams.ac.uk/research/research-themes/marine-renewable-energy-research>

- Perception, avoidance and collision risks of marine vertebrates with wave and tidal-stream energy devices;
- Acoustic footprints of renewable devices;
- Reef effects of offshore structures; and
- Benthic impacts of renewable devices.

COWRIE research of relevance to the EU Birds and Habitats Directives includes work on the impact of wind farms on marine birds and marine mammals, including research into quantifying the performance of Acoustic Mitigation Devices (AMDs) for marine mammals, which is expected in July 2010.

The SEA of the Plan also made various recommendations for further research in relation to the 'Biodiversity, flora and fauna' topic that will also be relevant to ongoing screening for AA, including;

- further ecological survey work (including aerial and ship-based surveys) and research to clarify the offshore distribution and abundance of key species;
- a study to identify and assess likely scheduling and duration of key disturbance activities (e.g. piling) during construction, operation, and decommissioning. This study is needed to determine possible impacts on seasonal movements of various species; and
- regional cumulative impact assessments for biodiversity with particular focus on regionally important species or habitats as indicated by HRA – e.g. Moray Firth's resident bottlenose dolphins. East and west coast cumulative impact assessments have already been initiated but areas need to be broadened to cover all of STW.

²⁶ <http://www.offshorewind.co.uk/Pages/COWRIE/>

7 SUMMARY OF THE ASSESSMENT

7.1 Conclusions

A total of 163 international sites were screened for AA as part of this assessment. 152 of these were located in Scotland, 6 in England, 2 in German territorial waters and 3 in Dutch waters. Sites outside of Scottish territorial waters were included due to the potential for long range marine mammal or bird species to be affected by the Plan. Out of the sites initially screened, twelve sites have been screened out from further assessment and these are listed in section 5.4. This led to a total of 151 sites that were subjected to a high-level assessment of potential impact pathways and corresponding impacts.

7.2 Further AA requirements

Further evidence-based screening of sites and a full strategic AA on the Plan is a fundamental requirement for the following reasons;

- At the time of writing this report the Plan had not been fully developed; this assessment has been based on draft maps of ten possible short-term development sites in Scottish Territorial Waters; the nature and exact location of turbine development within these sites is not yet known. Further, the precise location of cables and infrastructure associated with the development is also unknown. Subsequent to the first draft of this report, the draft Plan for consultation has now been completed and this includes 25 options for offshore wind development in the medium-term – these medium-term sites will need to be subject to AA work if they are taken forward as viable development options;
- As a consequence of the above, international sites that were not assessed to be vulnerable to a likely significant effect will need to be re-assessed and the conclusions of likely significant effect may be very different. Similarly, sites that were ‘screened out’ at this stage may need to be re-considered for further assessment;
- A more detailed examination of the evidence base of all the habitats and species of all 151 sites still in the assessment is needed in order to gain a better understanding of ‘likely significant effect.’ As well as determining which sites will need a full strategic AA, this will also help to screen out more international sites from further assessment. It is anticipated that many more international sites can be screened out at the strategic stage, before project level AA requirements are determined;
- It is recommended that this screening report is updated following consultation and after further Plan and site-level details of the Plan emerge. It will be necessary to undertake a full AA on all the short-listed sites that have been agreed with Marine Scotland and statutory consultees. After a full AA has been undertaken, project-level AAs of some international sites are likely to be required in order to assess the

potential for adverse impacts on the integrity of the international sites once greater details of the schemes are known; and

- It is not appropriate to identify avoidance and mitigation measures at the screening stage of AA as only potentially significant effects on international sites have been identified. If adverse effects on the integrity of any international sites are identified in the full AA, mitigation measures should be sought to avoid adverse effects.

In summary, this report has;

- identified that the Plan is not directly connected with the management, for conservation purposes, of international sites and therefore AA needs to be carried out by the competent authority (Marine Scotland);
- identified, with reference to the precautionary principle, that there are likely to be 'significant' effects on various international sites due to the implementation of the short-term options. Further strategic screening for AA is required for the medium term options;
- identified the requirement for a full AA of the Plan;
- identified a set of potential impacts and impact pathways; and
- identified preliminary findings of key knowledge gaps

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9 GLOSSARY

Appropriate Assessment (AA)	An assessment of the potential impacts of a proposed plan on an international site, either alone or in combination with other plans.
Biodiversity Action Plan (BAP)	The UK BAP is a document setting out the UK biological resource, identifying the conservation status of target species and habitats and related targets for conservation/restoration of these species and habitats. Local BAPS (LBAP) identify local priorities, working in partnerships to achieve these priorities which contribute to the UK BAP.
National Nature Reserve (NNR)	NNRs were established to protect the most important areas of wildlife habitat and geological formations in Britain, and as places for scientific research. They are either owned or controlled by SNH or are privately owned and managed along with the owner under a Nature Reserve Agreement (NRA). Other NNRs are owned and managed by partner organisations, including Forestry Commission Scotland, The National Trust for Scotland and RSPB Scotland. They cover nearly every type of habitat in the UK and are open to the public.
Natura 2000	A network of Europe-wide sites designated under the Habitats Directive (92/43/EEC), comprising Special Areas of Conservation, Special Protection Areas and Ramsar sites.
Ramsar Site	Wetlands designated as internationally important under the Convention on Wetlands, Ramsar, Iran, 1971.
‘Scoping’ and ‘screening’	The use of the term ‘scoping’ in this report is in relation to the SEA Scoping Report undertaken by Marine Scotland and refers to SEA topics scoped out of the SEA, as agreed by consultees. The use of the term ‘screening’ refers to the matrix assessment of qualifying features in Appendix 1 of this report.
Scottish Territorial Waters (STW)	Refers to all waters within twelve nautical miles of the Scottish coast.
Site of Community Importance (SCI)	International sites (SACs, SPAs only) that have been adopted by the European Commission but not yet formally designated by the government of each EC member country.

Site of Special Scientific Interest (SSSI)	<p>In Scotland and England, where the majority of international sites in this project are located, SSSIs are designated by SNH and Natural England respectively. They underpin other nature conservation designations, such as Special Protection Areas and Special Areas of Conservation. For example, the boundary of the Cromarty Firth SPA follows the same line as the Cromarty Firth SSSI and the estuarine section of the Lower River Conon SSSI.</p>
Special Area of Conservation (SAC)	<p>SACs are designated to protect the 220 habitats and approximately 1000 species listed in Annex I and II of the Habitats Directive which are considered to be of European interest following criteria given in the directive. Each SAC has various conservation objectives. cSAC sites are sites that have been submitted to the European Commission, but not yet formally adopted, pSACs are sites that have been formally advised to UK Government, but not yet submitted to the European Commission and dSACs are areas that have been formally advised to UK government as suitable for selection as SACs, but have not been formally approved by government as sites for public consultation.</p>
Special Protection Area (SPA)	<p>Sites that are strictly protected sites classified in accordance with Article 4 of the EC Directive on the conservation of wild birds (79/409/EEC), (Birds Directive). They are classified for rare and vulnerable birds, listed in Annex I of the Birds Directive, and for regularly occurring migratory species. Sites that are still awaiting formal classification are known as potential SPAs or pSPAs.</p>

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Appendix 1
International Site Feature Screening



Assumptions:

- Landward impacts (e.g. construction & decommissioning activities on land) are not being considered at this stage, due to a lack of information to make informed judgements. Otherwise all terrestrial features e.g. grasslands, moorland etc. could be screened in. Impacts associated with intertidal & coastal habitats have been considered e.g. installation of cables across shoreline etc.
- No information or mapping on cable routes has been provided, so assumed possible that cable routes could go through coastal, intertidal and subtidal habitats.

Notes on Bird Groupings:

- Due to the large number of individual bird species occurring in many of the SPA and Ramsar sites, they have been grouped according to the types of habitat that support them. The source of these bird groupings is EA (2006), referenced at the end of this table. For sites where only one bird species is relevant, the species name is given in grey text. One species can often belong to several groups; hence multiple groups are sometimes listed when an international site has only one qualifying bird species. For all other sites, a full list of features can be found in Appendix 4. All qualifying features for international sites were downloaded from the SNHi and JNCC websites.
- For sites that are more distant from the plan's wind farm sites (and could be screened out at the next stage) a note of the number of seabird/ migratory species is given for the sake of brevity.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Solway Firth/ Wigtown Bay	Solway Firth SAC	Atlantic salt meadows	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Coastal shingle vegetation outside the reach of waves	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Dune grassland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Estuaries	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. introduction of non-native species) during all activities (construction, operation & decommissioning).
		Glasswort and other annuals colonising mud and sand	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. introduction of non-native species) during all activities (construction, operation & decommissioning).
		Intertidal mudflats and sandflats	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Reefs	In	Habitat could be subject to direct impacts (e.g. damage during piling etc.) or indirect impacts (e.g. smothering) during all activities (construction, operation & decommissioning).
		River lamprey (<i>Lampetra fluviatilis</i>)	In	Species is found in coastal waters, estuaries and accessible rivers, - migratory passage to and from spawning & nursery grounds.
		Sea lamprey (<i>Petromyzon marinus</i>)	In	Species is found in coastal waters, estuaries and accessible rivers, - migratory passage to and from spawning & nursery grounds.
Solway Firth/ Wigtown Bay	Upper Solway Flats and Marshes SPA	Birds of uplands Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal waters Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal species. Potential movement across wind farm sites. Potential impact on intertidal habitat.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Solway Firth/ Wigtown Bay	Upper Solway Flats and Marshes Ramsar	Birds of uplands Birds of lowland wet grassland Birds of farmland Birds of coastal waters Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal species. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Solway Firth/ Wigtown Bay	Castle Loch, Lochmaben Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Solway Firth/ Wigtown Bay	Castle Loch, Lochmaben SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Solway Firth/ Wigtown Bay	River Bladnoch SAC	Atlantic salmon (<i>Salmo salar</i>)	In	Species is found in ocean, coastal waters, estuaries and accessible rivers - migratory passage to and from spawning & nursery grounds.
Solway Firth/ Wigtown Bay	Loch of Inch and Torrs Warren SPA	Hen harrier (<i>Circus cyaneus</i>), non-breeding Birds of uplands Birds of lowland heaths and brecks Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	Out	Breeding habitat is moorland. UK population not migratory, and as habitat is terrestrial, impacts are not considered likely.
Solway Firth/ Wigtown Bay	Loch of Inch and Torrs Warren Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Over-winter mostly on freshwater wetlands (bogs and grasslands) but this is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
		Sand dune	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
Solway Firth/ Wigtown Bay	Solway Mosses North SAC	Active raised bogs	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Degraded raised bogs still capable of natural regeneration	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Solway Firth/ Wigtown Bay	Loch Ken and River Dee Marshes SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory species, so spring and autumn passage could result in potential movement across wind farm sites
Solway Firth/ Wigtown Bay	Loch Ken and River Dee Marshes Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory species, so spring and autumn passage could result in potential movement across wind farm sites
Solway Firth/Wigtown Bay	River Eden SAC, England	Sea lamprey <i>Petromyzon marinus</i>	In	Migratory route for diadromous species
		River lamprey <i>Lampetra fluviatilis</i>	In	Migratory route for diadromous species
		Atlantic Salmon <i>Salmo salar</i>	In	Migratory route for diadromous species
Solway Firth/Wigtown Bay	Duddon Estuary SPA/Ramsar, England	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk. Possible 'in-combination' impacts with West of Duddon Sands Offshore Windfarm.
Solway Firth/Wigtown Bay	Morecambe Bay SPA, England	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Solway Firth/Wigtown Bay	Morecambe Bay Ramsar, England	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Wigtown Bay	Luce Bay and Sands SAC	Coastal dune heathland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Dune grassland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Great crested newt (<i>Triturus cristatus</i>)	Out	Terrestrial species, so no likely impact. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Intertidal mudflats and sandflats	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Reefs	In	Habitat could be subject to direct impacts (e.g. damage during piling etc.) or indirect impacts (e.g. smothering) during all activities (construction, operation & decommissioning).
		Shallow inlets and bays	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. introduction of non-native species) during all activities (construction, operation & decommissioning).
		Shifting dunes	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Shifting dunes with marram	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Subtidal sandbanks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in hydrography leading to habitat erosion) during all activities (construction, operation & decommissioning).
Wigtown Bay	Mull of Galloway SAC	Vegetated sea cliffs	Out	Sea cliff habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is unlikely to be influenced by coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Wigtown Bay	Burrow Head SAC	Great Crested Newt	Out	Terrestrial species, so no likely impact. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Kintyre/Islay	South-East Islay Skerries SAC	Common seal (<i>Phoca vitulina</i>)	In	Highly mobile marine mammal potential subject to a number of impacts, both direct and indirect
Kintyre/Islay	Eilean na Muice Duibhe SAC	Blanket bog (upland)	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Upland bog; Depressions on peat substrates	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Kintyre/Islay	Eilean na Muice Duibhe SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Over-winter mostly on freshwater wetlands (bogs and grasslands) but this is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Kintyre/Islay	Eilean na Muice Duibhe Ramsar	Blanket bog (upland)	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Over-winter mostly on freshwater wetlands (bogs and grasslands) but this is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Kintyre/Islay	Rinns of Islay SAC	Marsh fritillary butterfly (<i>Euphydryas (Eurodryas, Hypodryas) aurinia</i>)	Out	Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided - not in obvious route location.</i>
Kintyre/Islay	Rinns of Islay SPA	Birds of lowland wet grassland Birds of lowland dry grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Some migratory species, so spring and autumn passage could result in potential movement across wind farm sites

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Hen harrier (<i>Circus cyaneus</i>), breeding Birds of uplands Birds of lowland heaths and brecks Birds of farmland	Out	Breeding habitat is moorland. UK population not migratory, and as habitat is terrestrial, impacts are not consider likely.
Kintyre/Islay	Rinns of Islay Ramsar	Blanket Bog	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory species (both breeding and wintering), so spring and autumn passage could result in potential movement across wind farm sites
Kintyre/Islay	Jura, Scarba & the Garvellachs SPA	Golden eagle (<i>Aquila chrysaetos</i>), breeding Birds of uplands Birds of coastal habitats	Out	In the UK, the species is resident and sedentary, occurring primarily in uplands although there are several pairs that exploit coastal habitats (not known if relevant to this site).
Kintyre	Kintrye Goose Roosts SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Over-winter mostly on freshwater wetlands (bogs and grasslands) but this is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Kintyre	Kintrye Goose Roosts Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Over-winter mostly on freshwater wetlands (bogs and grasslands) but this is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Kintyre	Arran Moors SPA	Hen harrier (<i>Circus cyaneus</i>), breeding Birds of uplands Birds of lowland heaths and brecks Birds of farmland	Out	Breeding habitat is moorland. UK population not migratory, and as habitat is terrestrial, impacts are not consider likely.
Kintyre	Ailsa Craig SPA	Birds of uplands Birds of lowland freshwaters and their margins Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay	Glac na Criche SAC	Blanket bog (wait for GIS on cable routes?)	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Dry heaths	Out	Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided - not in obvious route location.</i>
		Marsh fritillary butterfly (<i>Euphydryas (Eurodryas,</i>	Out	<i>Possible cable route through site, but no information on this, so assumed site would be avoided - not in obvious route location.</i>

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		<i>Hypodryas aurinia</i>		
		Vegetated sea cliffs	Out	Vegetated sea cliff features would not be vulnerable to any expected impacts from an offshore wind farm. <i>Possible cable route through site, but no information on this, so assumed site would be avoided - not in obvious route location.</i>
Islay	The Oa SPA	Chough (<i>Pyrrhocorax pyrrhocorax</i>), breeding Birds of coastal habitats	In	A coastal species – this population regularly moves between different areas of Islay. Due to proximity there is potential for movement across wind farm sites.
Islay	Laggan (Islay) SPA	Birds of lowland wet grasslands Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay	Bridgend Flats, Islay SPA	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding Birds of lowland wet grasslands Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory bird found on islands - most important area is Islay, on which the majority of the Greenland population winters. Habitat mostly marsh, rivers, on migration also estuaries. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay	Bridgend Flats, Islay Ramsar	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding Birds of lowland wet grasslands Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory bird found on islands - most important area is Islay, on which the majority of the Greenland population winters. Habitat mostly marsh, rivers, on migration also estuaries. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay	Feur Lochain SAC	Acid peat-stained lakes and ponds	Out	Freshwater habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Blanket bog	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Upland bog; Depressions on peat substrates	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Islay	Gruinart Flats, Islay SPA	Birds of lowland wet grasslands Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory birds. Habitat mostly marsh, rivers, on migration also estuaries. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay	Gruinart Flats, Islay Ramsar	Birds of lowland wet grasslands Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory birds. Habitat includes marsh, rivers, estuaries and coast. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay	Oronsay SAC	Machair (Supralittoral sediment)	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Islay	Oronsay and South Colonsay SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats	In	Coastal species and a migrant breeder. Due to proximity there is potential for movement across wind farm sites.
Islay	North Colonsay & Western Cliffs SPA	Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Coastal and cliff-nesting species. Due to proximity there is potential for movement for feeding across wind farm sites.
Islay/Wigtown Bay/ Kintyre/Solway Firth	Murlough SAC, Northern Ireland	Common seal (<i>Phoca vitulina</i>)	In	Common seals range widely in search of prey.
Islay/Wigtown Bay/ Kintyre/Solway Firth	Strangford Lough SAC, Northern Ireland	Common seal (<i>Phoca vitulina</i>)	In	Common seals range widely in search of prey.
Argyll Array	Tiree Machair SAC	Dune grassland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Humid dune slacks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Machair	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Naturally nutrient-rich lakes or lochs which are often dominated by pondweed	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Shifting dunes	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Shifting dunes with marram	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
Argyll Array	Loch a' Phuill SAC	Naturally nutrient-rich lakes or lochs which are often dominated by pondweed	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
Argyll Array	Coll Machair SAC	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Out	Freshwater habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Dune grassland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Humid dune slacks	Out	Freshwater habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Machair	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Shifting dunes with marram	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Slender naiad (<i>Najas flexilis</i>)	Out	Freshwater species would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Argyll Array	Canna and Sanday SPA	Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Sea and coastal birds, with potential movement for feeding across wind farm sites.
Argyll Array	Tiree (corncrake) SPA	Birds of lowland wet grassland Birds of lowland dry grassland Birds of farmland	In	Breeds on terrestrial sites such as agricultural grassland grown for hay or silage in areas where tall vegetation cover is available (e.g. marshy areas, un-grazed fields and field margins). But, this is a migrant breeder, so due to proximity there is potential for movement across wind farm sites.
Argyll Array	Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA	Birds of uplands Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Potential movement across wind farm site due to proximity. Potential impact on intertidal habitat.
Argyll Array	Coll SPA	Birds of lowland wet grasslands Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory birds - habitat mostly marsh, rivers, on migration also estuaries. Potential movement across wind farm sites.
Argyll Array	Coll (corncrake) SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland	In	Breeds on terrestrial sites such as agricultural grassland grown for hay or silage in areas where tall vegetation cover is available (e.g. marshy areas, un-grazed fields and field margins). But, this is a migrant breeder, so due to proximity there is potential for movement across wind farm sites.
Argyll Array	Coll Ramsar	Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Over-winter mostly on freshwater wetlands (bogs and grasslands) but this is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Argyll Array	Mingulay & Berneray SPA	Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Sea and coastal birds, with potential movement for feeding across wind farm sites.
Argyll Array	South Uist Machair and Lochs SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	South Uist Machair and Lochs Ramsar	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Aird and Borve, Benbecula SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Argyll Array	Monach Isles SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	North Uist Machair and Islands SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	North Uist Machair and Islands Ramsar	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Mointeach Scadabhaigh SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Lewis Peatlands SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Lewis Peatlands Ramsar	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Flannan Isles SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Shiant Isles SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Argyll Array	Loch Shiel SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Islay/ Argyll Array	Treshnish Isles SAC	Grey seal (<i>Halichoerus grypus</i>)	In	Highly mobile marine mammal potential subject to a number of impacts, both direct and indirect
		Reefs	In	Habitat could be subject to direct impacts (e.g. damage during piling etc.) or indirect impacts (e.g. smothering) during all activities (construction, operation & decommissioning).
Islay/ Argyll Array	Treshnish Isles SPA	Birds of lowland wet grasslands Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory bird - most important area is Islay, on which the majority of the Greenland population winters. Habitat mostly marsh, rivers, on migration also estuaries. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Islay/ Argyll Array	Cnuic agus Cladach Mhuile (Mull Coast and Hills) SPA	Golden eagle (<i>Aquila chrysaetos</i>), breeding Birds of uplands Birds of coastal habitats	Out	In the UK, golden eagle is resident and sedentary, occurring primarily in uplands although there are several pairs that exploit coastal habitats (not known if relevant to this site). Golden eagle sedentary breeding species
Islay/ Argyll Array	Rum SAC	Acid peat-stained lakes and ponds	Out	Freshwater habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Acidic scree	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Alpine and subalpine heaths	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Base-rich fens	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no</i>

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
				<i>information on this, so assumed site would be avoided.</i>
		Base-rich scree	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Blanket bog	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Out	Freshwater habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Depressions on peat substrates	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Dry Heaths	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Grasslands on soils rich in heavy metals	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Otter (<i>Lutra lutra</i>)	In	Mobile species around coastal areas, potentially impacted by increased shipping activity and during construction/decommissioning
		Plants in crevices on acid rocks	Out	Found on terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Plants in crevices on base-rich rocks	Out	Found on terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Species-rich grassland with mat-grass in upland areas	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Tall herb communities	Out	Terrestrial community, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Vegetated sea cliffs	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Wet heathland with cross-leaved heath	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Kintyre/Islay/Argyll Array	Rum SPA	Birds of uplands Birds of lowland freshwaters and their margins Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Sea and coastal birds, with potential movement across wind farm sites.
Kintyre/Islay/Argyll Array	Monach Islands SAC	Grey seal (<i>Halichoerus grypus</i>).	In	Grey seals spend most of year offshore and range widely in search of prey.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Kintyre/Islay/Argyll Array/Beatrice	North Rona SAC	Grey seal (<i>Halichoerus grypus</i>).	In	Grey seals spend most of year offshore and range widely in search of prey.
Kintyre/Argyll Array	Eileanan agus Sgeiran Lios mor SAC	Common seal (<i>Phoca vitulina</i>)	In	Common seals range widely in search of prey.
Kintyre/Argyll Array	Ascrib, Isay and Dunvegan SAC	Common seal (<i>Phoca vitulina</i>)	In	Common seals range widely in search of prey.
Beatrice	Moray Firth SAC	Bottlenose dolphin (<i>Tursiops truncatus</i>)	In	Highly mobile cetaceans, potentially subject to a number of impacts, both direct and indirect
		Subtidal sandbanks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in hydrography leading to habitat erosion) during all activities (construction, operation & decommissioning).
Beatrice	Inner Moray Firth SPA	Birds of uplands Birds of woodland and scrub Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Beatrice	Inner Moray Firth Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
		Mudflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Saltmarsh	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Sand dune	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Sandflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Shingle	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
Beatrice	Moray and Nairn Coast SPA	Birds of woodland and scrub Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Beatrice	Moray and Nairn Coast Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
		Mudflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Saltmarsh	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Sand dune	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Shingle	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Wet woodland	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Beatrice	Cromarty Firth SPA	Birds of uplands Birds of woodland and scrub Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Beatrice	Cromarty Firth Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
		Mudflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
Beatrice	Troup, Pennan and Lion's head SPA	Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Sea birds, so potential movement across wind farm sites.
Beatrice	East Caithness Cliffs SAC	Vegetated sea cliffs	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Beatrice	Tips of Corsemal and tom Mor SPA	Site has migratory bird species	In	Migratory and coastal/sea birds. Potential movement across wind farm sites
Beatrice	Loch of Strathbeg SPA	Site has migratory bird species	In	Migratory and coastal/sea birds. Potential movement across wind farm sites.
Beatrice	Loch of Strathbeg	Site has migratory bird species	In	Migratory and coastal/sea birds. Potential movement across wind farm sites.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
	Ramsar -			
Beatrice	East Caithness Cliffs SPA	Birds of uplands Birds of lowland freshwaters and their margins Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Sea birds, so potential movement across wind farm sites.
Beatrice	Berriedale & Langwell Waters SAC	Atlantic salmon (<i>Salmo salar</i>)	In	Species is found in ocean, coastal waters, estuaries and accessible rivers - migratory passage to and from spawning & nursery grounds.
Beatrice	North Caithness Cliffs SPA	Birds of uplands Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Sea birds, so potential movement across wind farm sites.
Beatrice	Caithness & Sutherland Peatlands SAC	Acid peat-stained lakes and ponds	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Blanket bog	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Depressions on peat substrates	Out	Terrestrial habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Marsh saxifrage (<i>Saxifraga hirculus</i>)	Out	Terrestrial species would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Otter (<i>Lutra lutra</i>)	In	Mobile species around coastal areas, potentially impacted by increased shipping activity and during construction/decommissioning
		Very wet mires often identified by an unstable 'quaking' surface	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Wet heathland with cross-leaved heath	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Beatrice	Caithness & Sutherland Peatlands SPA	Birds of uplands Birds of lowland heaths and brecks Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds, so spring and autumn passage could result in potential movement across wind farm sites.
Beatrice	Caithness & Sutherland Peatlands Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats	In	Migratory and coastal/sea birds, so spring and autumn passage could result in potential movement across wind farm sites.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Birds of estuarine habitats		
		Blanket Bog	Out	Terrestrial habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Beatrice	Caithness Lochs SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds, so spring and autumn passage could result in potential movement across wind farm sites.
Beatrice	Caithness Lochs Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds, so spring and autumn passage could result in potential movement across wind farm sites.
Beatrice	Dornoch Firth and Morrich More SAC	Atlantic salt meadows	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Coastal dune heathland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Common seal (<i>Phoca vitulina</i>)	In	Highly mobile marine mammal potential subject to a number of impacts, both direct and indirect
		Dune grassland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Dunes with juniper thickets	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Estuaries	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. introduction of non-native species) during all activities (construction, operation & decommissioning).
		Glasswort and other annuals colonising mud and sand	In	Species could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. introduction of non-native species) during all activities (construction, operation & decommissioning).
		Humid dune slacks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Intertidal mudflats and sandflats	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Lime-deficient dune heathland with crowberry	In	Communities could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Otter (<i>Lutra lutra</i>)	In	Mobile species around coastal areas, potentially impacted by increased shipping activity and during construction/decommissioning
		Reefs	In	Habitat could be subject to direct impacts (e.g. damage during piling etc.) or indirect impacts (e.g. smothering) during all activities (construction, operation & decommissioning).
Shifting dunes	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).		

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Shifting dunes with marram	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Subtidal sandbanks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in hydrography leading to habitat erosion) during all activities (construction, operation & decommissioning).
Beatrice	Dornoch Firth and Loch Fleet SPA	Birds of uplands Birds of woodland and scrub Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Beatrice	Dornoch Firth and Loch Fleet Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal/sea birds. Potential movement across wind farm sites. Potential impact on intertidal habitat.
		Mudflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Reefs	In	Habitat could be subject to direct impacts (e.g. damage during piling etc.) or indirect impacts (e.g. smothering) during all activities (construction, operation & decommissioning).
		Saltmarsh	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Sand dune	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Sandflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Wet woodland	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Beatrice	River Oykel SAC	Atlantic salmon (<i>Salmo salmar</i>)	In	Species is found in ocean, coastal waters, estuaries and accessible rivers - migratory passage to and from spawning & nursery grounds.
Beatrice	Faray and Holm of Faray SAC	Grey seal (<i>Halichoerus grypus</i>).	In	Grey seals spend most of year offshore and range widely in search of prey.
Beatrice	Sanday SAC	Common seal (<i>Phoca vitulina</i>)	In	Common seals range widely in search of prey.
Beatrice	River Spey SAC	Sea lamprey (<i>Petromyzon marinus</i>)	In	Migratory route for diadromous species

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Atlantic Salmon (<i>Salmo salar</i>)	In	Migratory route for diadromous species
Beatrice	River Moriston SAC	Atlantic Salmon <i>Salmo salar</i>	In	Migratory route for diadromous species
Beatrice	Papa Westray SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	East Sanday Coast SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	East Sanday Coast Ramsar	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	West Westray SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Rousay SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Calf of Eday SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Orkney Mainland Moors SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Auskerry SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Hoy SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Copinsay SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Sule Skerry and Sule Stack SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Beatrice	North Rona and Sula Sgeir SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Switha SPA	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Beatrice	Pentland Firth Islands	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Barry Links SAC	Coastal dune heathland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Dune grassland	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Humid dune slacks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Shifting dunes	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
		Shifting dunes with marram	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in sediment dynamics) during all activities (construction, operation & decommissioning).
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Tay & Eden Estuary SAC	Common seal (<i>Phoca vitulina</i>)	In	Highly mobile marine mammal potential subject to a number of impacts, both direct and indirect
		Estuaries	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. introduction of non-native species) during all activities (construction, operation & decommissioning).
		Intertidal mudflats and sandflats	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
		Subtidal sandbanks	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. change in hydrography leading to habitat erosion) during all activities (construction, operation & decommissioning).
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Tay & Eden Estuary SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory birds of estuarine and coastal sites. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Tay & Eden Estuary Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory birds of estuarine and coastal sites. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth	Imperial Dock Lock, Leith SPA	1 migratory bird species	In	Migratory and/or seabird species potentially at risk.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Array				
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	River Tay SAC	Atlantic salmon (<i>Salmo salar</i>)	In	Species is found in ocean, coastal waters, estuaries and accessible rivers - migratory passage to and from spawning & nursery grounds.
		Brook lamprey (<i>Lampetra planeri</i>)	Out	Freshwater (river) species would not be vulnerable to any expected impacts, as spends whole lifecycle in river. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Otter (<i>Lutra lutra</i>)	In	Mobile species around coastal areas, potentially impacted by increased shipping activity and during construction/decommissioning
		River lamprey (<i>Lampetra fluviatilis</i>)	In	Species is found in coastal waters, estuaries and accessible rivers, - migratory passage to and from spawning & nursery grounds.
		Sea lamprey (<i>Petromyzon marinus</i>)	In	Species is found in coastal waters, estuaries and accessible rivers, - migratory passage to and from spawning & nursery grounds.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Cameron Reservoir SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Cameron Reservoir Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Forth Islands SPA	Birds of uplands Birds of lowland freshwaters and their margins Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Isle of May SAC	Grey seal (<i>Halichoerus grypus</i>)	In	Highly mobile marine mammal potential subject to a number of impacts, both direct and indirect
		Reefs	In	Habitat could be subject to direct impacts (e.g. damage during piling etc.) or indirect impacts (e.g. smothering) during all activities (construction, operation & decommissioning).
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Montrose Basin SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Montrose Basin Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
		Mudflat	In	Habitat could be subject to direct impacts (e.g. habitat loss) or indirect impacts (e.g. ship-wash causing habitat loss through erosion) during all activities (construction, operation & decommissioning).
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Forth SPA	Birds of uplands Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Firth of Forth Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal/sea birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	St Abb's Head to Fast Castle SAC	Vegetated sea cliffs	Out	Terrestrial habitat, so would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	St Abb's Head to Fast Castle SPA	Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Coastal/sea birds, so potential movement across wind farm sites.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	River South Esk SAC	Atlantic salmon (<i>Salmo salar</i>) Pearl mussel screened out	In	Species is found in ocean, coastal waters, estuaries and accessible rivers - migratory passage to and from spawning & nursery grounds.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	River Tweed SAC	Atlantic salmon (<i>Salmo salar</i>) Pearl mussel and other features screened out	In	Species is found in ocean, coastal waters, estuaries and accessible rivers - migratory passage to and from spawning & nursery grounds.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Fowlsheugh SPA	Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Coastal/sea birds, so potential movement across wind farm sites.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch Leven SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats Birds of open sea and offshore rocks	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock,	Loch Leven Ramsar	Birds of lowland wet grassland	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Neart na Goithe, Forth Array		Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats		
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Slamannan Plateau SPA	Taiga bean goose (<i>Anser fabalis fabalis</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal bird with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Fala Flow SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Fala Flow Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Greenlaw Moor SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Din Moss / Hoselaw Loch SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Din Moss / Hoselaw Loch Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Westwater SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Array		Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats		
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Westwater Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Gladhouse Reservoir SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Gladhouse Reservoir Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Estuaries provided the most important roost sites. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch of Skene SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats	In	Estuaries provided the important roost sites for pink-footed goose. Highly mobile, using many separate sites in the course of one winter. Potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Loch of Skene Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland	In	Use agricultural areas near favoured roost sites, including estuaries, lakes, reservoirs, and occasionally river islands. This is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Muir of Dinnet SAC	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Degraded raised bog	Out	Bog habitats would not be vulnerable to any expected impacts from an offshore wind farm. Site is wholly terrestrial with no influence from coastal processes. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Dry heaths	Out	Terrestrial habitat, so no likely impact. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
		Otter (<i>Lutra lutra</i>)	In	Mobile species around coastal areas, potentially impacted by increased shipping activity and during construction/decommissioning

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
		Very wet mires often identified by an unstable 'quaking' surface	Out	Freshwater wetland habitats would not be vulnerable to any expected impacts. <i>Possible cable route through site, but no information on this, so assumed site would be avoided.</i>
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Muir of Dinnet SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	Muir of Dinnet Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland	In	Use agricultural areas near favoured roost sites, including estuaries, lakes, reservoirs, and occasionally river islands. This is a migratory species, so spring and autumn passage could result in potential movement across wind farm sites.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	South Tayside Goose roosts SPA	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape, Bell Rock, Neart na Goithe, Forth Array	South Tayside Goose roosts Ramsar	Birds of lowland wet grassland Birds of lowland freshwaters and their margins Birds of farmland Birds of coastal habitats Birds of estuarine habitats	In	Migratory and coastal birds with potential movement across wind farm sites. Potential impact on intertidal habitat.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Berwickshire and North Northumberland Coast SAC, England	Grey seal (<i>Halichoerus grypus</i>).	In	Highly mobile marine mammal potential subject to a number of impacts, both direct and indirect
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	River Teith SAC	Sea lamprey <i>Petromyzon marinus</i>	In	Migratory route for diadromous species
		River lamprey <i>Lampetra fluviatilis</i>	In	Migratory route for diadromous species
		Atlantic Salmon <i>Salmo salar</i>	In	Migratory route for diadromous species
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Waddenzee SAC, Netherlands	Bottlenose dolphin (<i>Tursiops truncatus</i>)	In	Range widely and potential to transit through STW sites.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Noordzeekustzone SAC, Netherlands	Bottlenose dolphin (<i>Tursiops truncatus</i>)	In	Range widely and potential to transit through STW sites.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Voordelta SAC, Netherlands	Bottlenose dolphin (<i>Tursiops truncatus</i>)	In	Range widely and potential to transit through STW sites.

DEVELOPMENT SITE(S)	INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE	SCREENED IN OR OUT	RATIONALE
Array				
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Doggerbank SAC, Germany	Common seal (<i>Phoca vitulina</i>)	In	Common seals range widely in search of prey.
		Harbour porpoise (<i>Phocoena phocoena</i>)	In	Harbour porpoises range widely in search of prey.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	NTP S-H Wattenmeer und angrenzende Küstengebiete SAC, Germany	Bottlenose dolphin (<i>Tursiops truncatus</i>)	In	Range widely and potential to transit through STW sites.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Lindisfarne SPA, England	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Lindisfarne Ramsar, England	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Farne Islands SPA, England	Site has migratory bird species	In	Migratory and/or seabird species potentially at risk.

Information sources:

EA. 2006. Environment Agency Guidance, Appendix 13: Habitats and species protected under the Habitats and Birds Directives

Joint Nature Conservation Committee website: <http://www.jncc.gov.uk>

Scottish Natural Heritage information website: <http://www.snh.org.uk/SNHi/>

British Trust for Ornithology website: <http://blx1.bto.org/birdfacts/index.htm>

Birdlife International website: <http://www.birdlife.org/>

Royal Society for the Protection of Birds website: <http://www.rspb.org.uk/wildlife/birdguide/name/a/index.aspx>

Appendix 2

Impact Matrices



Special Areas of Conservation

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Atlantic salt meadows	Solway Firth Dornoch Firth & Morrich More	Cable installation/ removal	Damage to seabed habitat, disruption of sediment patterns		✓		✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Coastal shingle vegetation outside the reach of waves	Solway Firth	Cable installation/removal	Direct loss or degradation of habitat		✓		✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Dunes with juniper thickets	Dornoch Firth and Morrich More	Cable installation/removal	Direct loss or degradation of habitat		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Lime-deficient dune heathland with crowberry	Dornoch Firth and Morrich More	Cable installation/removal	Direct loss or degradation of habitat		✓		✓
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Dune grassland	Solway Firth Luce Bay & Sands Tiree Machair Coll Machair Dornoch Firth & Morrich More Barry Links	Cable installation/removal	Direct loss or degradation of habitat		✓		✓
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Coastal dune heathland	Luce Bay & Sands Dornoch Firth & Morrich More Barry Links	Cable installation/removal	Direct loss or degradation of habitat		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Shifting dunes	Luce Bay and Sands Tiree Machair Dornoch Firth & Morrich More Barry Links	Cable installation/removal	Direct loss or degradation of habitat		✓		✓
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Shifting dunes with marram	Luce Bay and Sands Tiree Machair Coll Machair Dornoch Firth & Morrich More Barry Links	Cable installation/removal	Direct loss or degradation of habitat		✓		✓
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Humid dune slacks	Tiree Machair Dornoch Firth & Morrich More Barry Links	Cable installation/removal	Direct loss or degradation of habitat		✓		✓
		Presence of cables or cable protection; changes to sediment dynamics. Removal of cables could alter dynamics further.	Net loss or gain of habitat			✓	✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation		✓	✓	✓
Machair (Supralittoral sediment)	Oronsay Tiree Machair Coll Machair	Cable installation/ removal	Direct loss or degradation of habitat		✓		✓
		Cable installation, substation construction leading to disruption of contaminated sediments	Toxicity effects after inundation; could affect machair flora and waders and corncrake, <i>Crex crex</i>		✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Shallow inlets and bays	Luce Bay and Sands	Cable installation/ removal	Direct loss or degradation of habitat		✓		✓
		Cable protection leading to scour and hydrography changes	Habitat loss or degradation through erosion			✓	
		Increased vessel activity and associated ship wash	Habitat loss or degradation through erosion	✓	✓	✓	✓
		Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna		✓		✓
		Increased vessel activity	Introduction of invasive species from vessels, e.g. through ballast discharge	✓	✓	✓	✓
Naturally nutrient-rich lakes or lochs which are often dominated by pondweed	Tiree Machair Loch a' Phuill	Cable installation/ removal	Direct loss or degradation of habitat		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Cable protection leading to scour and hydrography changes	Habitat loss or degradation through erosion			✓	
		Increased vessel activity and associated ship wash	Habitat loss or degradation through erosion	✓	✓	✓	✓
		Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna		✓		✓
		Increased vessel activity	Introduction of invasive species from vessels, e.g. through ballast discharge	✓	✓	✓	✓
Estuaries	Solway Firth SAC Dornoch Firth & Morrich More Firth of Tay & Eden Estuary	Trawling surveys and construction activities	Damage to seabed habitat, disruption of sediment patterns	✓	✓		✓
		Cable installation/ removal	Direct habitat loss from excavation or removal		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Increased vessel activity leading to ship wash	Habitat erosion and loss	✓	✓	✓	✓
		Increased vessel activity	Introduction of invasive species from vessels, e.g. through ballast discharge	✓	✓	✓	✓
		Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on estuarine flora and fauna		✓		✓
Glasswort and other annuals colonising mud and sand	Solway Firth Dornoch Firth & Morrich More	Trawling surveys and construction/decommissioning activities	Damage to habitat, disruption of sediment patterns	✓	✓		✓
		Trawling surveys and construction/decommissioning activities	Smothering	✓	✓		✓
		Cable protection leading to scour and hydrography changes	Habitat loss or degradation through erosion			✓	

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Increased vessel activity and associated ship wash	Habitat loss or degradation through erosion	✓	✓	✓	✓
		Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna		✓		✓
Intertidal mudflats and sandflats	Solway Firth Luce Bay & Sands Dornoch Firth & Morrich More Firth of Tay & Eden Estuary	Cable installation, substation construction	Damage to intertidal habitat, disruption of sediment patterns	✓	✓		✓
		Cable protection leading to scour and hydrography changes	Habitat loss or degradation through erosion			✓	
		Increased vessel activity and associated ship wash	Habitat loss or degradation through erosion	✓	✓	✓	✓
		Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Subtidal sandbanks	Solway Firth Luce Bay & Sands Moray Firth Dornoch Firth & Morrich More Firth of Tay & Eden Estuary	Trawling surveys, construction/ decommissioning activities	Trawling surveys and construction activities could cause damage to seabed habitat, disrupt sediment patterns	✓	✓		✓
		Cable protection leading to scour and hydrography changes	Habitat loss or degradation			✓	
		Cable installation/ removal; mobilisation of contaminated sediments	Toxicity effects on flora and fauna		✓		✓
Reefs	Solway Firth Luce Bay & Sands Treshnish Isles Dornoch Firth & Morrich More Isle of May	Trawling surveys and construction/decommissioning activities	Damage to reef habitat, disruption of sediment patterns	✓	✓		✓
		Cable installation/ removal	Direct habitat damage or loss		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Construction or decommissioning leading to disturbance of contaminated sediment	Toxic effects on flora and fauna		✓		✓
		Cable protection leading to scour and hydrography changes	Habitat loss or degradation			✓	
		Construction operations or scour from installations leading to changes in sediment patterns	Smothering of reef habitat		✓	✓	✓
River lamprey (<i>Lampetra fluviatilis</i>)	Solway Firth River Tay River Eden, England River Teith	Trawling surveys and construction/decommissioning activities	Damage to river lamprey habitat, disruption of sediment patterns	✓	✓		✓
		Trawling surveys and construction/decommissioning activities	Disruption of movement between spawning and nursery grounds	✓	✓		✓
		Seismic surveys	Noise injury	✓			

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Construction or demolition activities	Noise injury		✓		✓
		Turbine operation	Noise disturbance			✓	
		Turbine operation; contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or species mortality			✓	
		Construction or demolition activities leading to increased turbidity	Impacts on ocean-dependent life cycle stage		✓		✓
		Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Habitat degradation or species mortality	✓	✓	✓	✓
Sea lamprey (<i>Petromyzon marinus</i>)	Solway Firth River Tay River Eden, England River Teith River Spey	Trawling surveys and construction/decommissioning activities	Damage to sea lamprey habitat, disruption of sediment patterns	✓	✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Trawling surveys and construction/decommissioning activities	Disruption of movement between spawning and nursery grounds	✓			
		Seismic surveys	Noise injury or disturbance	✓			
		Construction or demolition activities	Noise injury or disturbance		✓		✓
		Turbine operation	Noise disturbance			✓	
		Turbine operation; contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or species mortality			✓	
		Construction or demolition activities leading to increased turbidity	Impacts on ocean-dependent life cycle stage		✓		✓
		Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Habitat degradation or species mortality	✓	✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Atlantic salmon (<i>Salmo salar</i>)	River Bladnoch Berrisdale & Langwell Waters River Oykel River Tay River South Esk River Tweed River Eden, England River Teith River Spey River Moriston	Trawling surveys and construction/decommissioning activities	Damage to salmon habitat, disruption of sediment patterns	✓	✓		✓
		Trawling surveys and construction/decommissioning activities	Disruption of movement between spawning and nursery grounds	✓			
		Seismic surveys	Noise injury or disturbance	✓			
		Construction or demolition activities	Noise injury or disturbance		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Turbine operation	Noise disturbance			✓	
		Turbine operation; contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or species mortality			✓	
		Construction or demolition activities leading to increased turbidity	Impacts on ocean-dependent life cycle stage		✓		✓
		Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Habitat degradation or species mortality	✓	✓	✓	✓
Common seal (<i>Phoca vitulina</i>)	South-East Islay Skerries Dornoch Firth & Morrich More Firth of Tay & Eden Estuary Eileanan agus Sgeiran Lios mor Ascrib, Isay and Dunvegan	New fishery exclusion zones	Increased prey species (population and/or assemblage)		✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Murlough, Northern Ireland Strangford Lough, Northern Ireland Sanday Doggerbank, Germany						
		Seismic surveys	Noise injury/ behavioural response	✓			
		Construction of turbines, including pile-driving, cable laying and decommissioning	Noise injury/ behavioural response/ habitat exclusion		✓		✓
		Construction of turbines, cable laying and decommissioning	Direct habitat degradation		✓		✓
		Construction of turbines, cable laying and decommissioning; disturbance of contaminated sediments	Indirect habitat degradation		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Construction of turbines, cable laying and decommissioning; increased turbidity	Reduced visibility		✓		✓
		Cable installation or removal	Physical damage to haul-out sites		✓		✓
		Cable installation or removal	Noise disturbance		✓		✓
		Presence of permanent near-shore structures on sea bed, e.g. cable armouring	Changes to hydrodynamic function and possible erosion of haul-out sites			✓	
		Turbine operation	Noise disturbance			✓	
		Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or physiological impacts			✓	

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Increased vessel activity	Noise disturbance	✓	✓	✓	✓
		Increased vessel activity	Collision risk	✓	✓	✓	✓
		Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects or indirect impacts on habitat or prey species	✓	✓	✓	✓
Grey seal (<i>Halichoerus grypus</i>)	Treshnish Isles Monach Islands North Rona Faray & Holm of Faray Isle of May Berwickshire & North Northumberland Coast, England	New fishery exclusion zones	Increased prey species (population and/or assemblage)		✓	✓	✓
		Seismic surveys	Noise injury/ behavioural response	✓			

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Construction of turbines, including pile-driving, cable laying and decommissioning	Noise injury/ behavioural response/ habitat exclusion		✓		✓
		Construction of turbines, cable laying and decommissioning	Direct habitat degradation		✓		✓
		Construction of turbines, cable laying and decommissioning; disturbance of contaminated sediments	Indirect habitat degradation		✓		✓
		Construction of turbines, cable laying and decommissioning; increased turbidity	Reduced visibility		✓		✓
		Cable installation or removal	Physical damage to haul-out sites		✓		✓
		Cable installation or removal	Noise disturbance		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Presence of permanent near-shore structures on sea bed, e.g. cable armouring	Changes to hydrodynamic function and possible erosion of haul-out sites			✓	
		Turbine operation	Noise disturbance			✓	
		Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or physiological impacts			✓	
		Increased vessel activity	Noise disturbance	✓	✓	✓	✓
		Increased vessel activity	Collision risk	✓	✓	✓	✓
		Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects or indirect impacts on habitat or prey species	✓	✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Otter (<i>Lutra lutra</i>)	Rum Caithness & Sutherland Peatlands Dornoch Firth & Morrich More River Tay Muir of Dinnet	Increased vessel movement	Noise or visual disturbance	✓	✓	✓	✓
		Increased vessel movement leading to increased pollution risk	Direct toxicity effects or indirect impacts on habitat or prey species	✓	✓	✓	✓
		Installation or removal of turbines, cables or other structures	Noise disturbance		✓	✓	✓
		Construction of turbines, cable laying and decommissioning	Direct habitat degradation		✓		✓
		Construction of turbines, cable laying and decommissioning; disturbance of contaminated sediments	Indirect habitat degradation		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Construction of turbines, cable laying and decommissioning; increased turbidity	Reduced visibility		✓		✓
Bottlenose dolphin (<i>Tursiops truncatus</i>)	Moray Firth	New fishery exclusion zones	Increased prey species (population and/or assemblage)		✓	✓	✓
		Turbine operation; contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or species mortality			✓	
		Construction or demolition activities, e.g. pile driving, leading to increased noise	Habitat avoidance, behavioural response, physiological damage		✓		✓
		Construction or demolition activities leading to increased turbidity	Impaired vision		✓		✓
		Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Habitat degradation or species mortality	✓	✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Cable installation or removal	Noise disturbance		✓		✓
		Presence of permanent near-shore structures on sea bed, e.g. cable armouring	Changes to hydrodynamic function of habitat			✓	
		Turbine operation	Noise disturbance			✓	
		Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Habitat degradation or physiological impacts			✓	
		Increased vessel activity	Noise disturbance	✓	✓	✓	✓
		Increased vessel activity	Collision risk	✓	✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects or indirect impacts on habitat or prey species	✓	✓	✓	✓
		Cable operation - electromagnetic fields	Possible impacts on physiology/ behaviour			✓	
Bottlenose dolphin (<i>Tursiops truncatus</i>)	Waddenzee, Netherlands Noordzeekustzone, Netherlands Voordelta, Netherlands NTP S-H Wattenmeer und angrenzende Küstengebiete, Germany	Construction or demolition activities leading to increased turbidity	Impaired vision for transitory dolphins		✓		✓
		Cable installation or removal	Noise disturbance to transitory dolphins		✓		✓
		Turbine operation	Noise disturbance to transitory dolphins			✓	

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Physiological impacts to transitory dolphins			✓	
		Increased vessel activity	Noise disturbance to transitory dolphins	✓	✓	✓	✓
		Increased vessel activity	Collision risk to transitory dolphins	✓	✓	✓	✓
		Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects on dolphins or prey species	✓	✓	✓	✓
		Cable operation electromagnetic fields	Possible impacts on physiology/ behaviour			✓	
Harbour Porpoise	Doggerbank SAC, Germany	Construction or demolition activities leading to increased turbidity	Impaired vision for transitory porpoises		✓		✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Cable installation or removal	Noise disturbance to transitory porpoises		✓		✓
		Turbine operation	Noise disturbance to transitory porpoises			✓	
		Turbine operation; accidental contamination from anti-fouling paints and sacrificial anodes	Physiological impacts to transitory porpoises			✓	
		Increased vessel activity	Noise disturbance to transitory porpoises	✓	✓	✓	✓
		Increased vessel activity	Collision risk to transitory porpoises	✓	✓	✓	✓
		Increased vessel activity or construction/maintenance activities leading to chemical and/or oil pollution	Physiological toxicity effects on porpoises or prey species	✓	✓	✓	✓

Qualifying interest feature	SACs that have been designated for these interest features	Impact pathway	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Cable operation electromagnetic fields	Possible impacts on physiology/ behaviour			✓	

SPAs and Ramsar Sites

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
Birds of uplands	Upper Solway Flats & Marshes SPA/Ramsar Ailsa Craig SPA Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA Rum SPA Inner Moray Firth SPA Cromarty Firth SPA East Caithness Cliffs SPA North Caithness Cliffs SPA Caithness & Sutherland Peatlands SPA Dornoch Firth & Loch Fleet SPA Forth Islands SPA Firth of Forth SPA	Increased traffic	Physical disturbance and/or displacement from key habitat	✓	✓	✓	✓

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	
		Presence and operation of turbines	Turbine collision risk			✓	
		Noise/visual disturbance from all construction, cable laying, maintenance & decommissioning activities	Feeding grounds avoidance, disturbance of flight patterns		✓	✓	✓
Birds of lowland wet grassland	Oronsay & South Colonsay SPA Tiree (corncrake) SPA Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA Coll SPA Coll (corncrake) SPA Treshnish Isles SPA	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Inner Moray Firth SPA/Ramsar Moray & Nairn Coast SPA/Ramsar Cromarty Firth SPA/Ramsar Caithness & Sutherland Peatlands SPA Caithness Lochs SPA/Ramsar Dornoch Firth & Loch Fleet SPA Firth of Tay & Eden Estuary SPA/Ramsar Cameron Reservoir SPA/Ramsar Montrose Basin SPA/Ramsar Firth of Forth SPA/Ramsar Loch Leven SPA/Ramsar Slammanan Plateau SPA Fala Flow SPA/Ramsar Greenlaw Moor SPA Din Moss/Hoselaw Loch SPA/Ramsar Westwater SPA/Ramsar Gladhouse Reservoir SPA/Ramsar Loch of Skene SPA/Ramsar						

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Muir of Dinnet SPA/Ramsar South Tayside Gooseroosts SPA/Ramsar						
		Presence and operation of turbines	Turbine collision risk			✓	
		Noise/visual disturbance from all construction, decommissioning activities and blade operation cable laying &	Feeding grounds avoidance, disturbance of flight patterns	✓	✓	✓	✓
Birds of lowland freshwaters and their margins	Upper Solway Flats & Marshes SPA/Ramsar Castle Loch, Lochmaben SPA/ Ramsar Loch of Inch and Torrs Warren Ramsar Loch Ken & River Dee Marshes SPA/Ramsar Eilean na Muice Duibhe SPA/Ramsar Rinns of Islay SPA/ Ramsar Kintrye Goose Roosts SPA/Ramsar	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Ailsa Craig SPA Laggan (Islay) SPA Gruinart Flats, Islay SPA/Ramsar Oronsay & South Colonsay SPA Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA Coll SPA Coll (corncrake) SPA Rum SPA Inner Moray Firth SPA Moray and Nairn Coast SPA/Ramsar	Presence and operation of turbines	Turbine collision risk			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Noise/visual disturbance from all construction, cable laying & decommissioning activities	Feeding grounds avoidance, disturbance of flight patterns	✓	✓	✓	✓

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Greenlaw Moor sar South SPADin Moss/Hoselaw Loch SPA/Ram Muir of Dinnet SPA/Ramsar Tayside Gooseroosts SPA/Ramsar						
Birds of farmland	Upper Solway Flats & Marshes SPA/Ramsar Castle Loch, Lochmaben SPA/ Ramsar Loch Ken & River Dee Marshes SPA/Ramsar Eilean na Muice Duibhe SPA/Ramsar Rinns of Islay SPA/ Ramsar Kintrye Goose Roosts SPA/Ramsar	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	
	Laggan (Islay) SPA Bridgend Flats, Islay SPA/Ramsar Gruinart Flats, Islay SPA/Ramsar Oronsay & South Colonsay SPA Tiree (corncrake) SPA Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA	Presence and operation of turbines	Turbine collision risk			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Noise/visual disturbance from all construction, cable laying & decommissioning activities and blade operation	Feeding grounds avoidance, disturbance of flight patterns		✓	✓	✓

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Westwater SPA/Ramsar SPA/Ramsar Gladhouse Reservoir SPA/Ramsar Loch of Skene SPA/Ramsar Muir of Dinnet SPA/Ramsar South Tayside Gooseroosts						
Birds of coastal waters	Upper Solway Flats & Marshes SPA/Ramsar Castle Loch, Lochmaben SPA/ Ramsar Loch of Inch and Torrs Warren Ramsar Loch Ken & River Dee Marshes SPA/Ramsar Eilean na Muice Duibhe SPA/Ramsar Rinns of Islay SPA/ Ramsar Kintrye Goose Roosts SPA/Ramsar	Installation of cables through intertidal zone	Loss of intertidal foraging habitat due to e.g. excavation works/laying of cables		✓	✓	✓
			Disturbance to roost sites		✓		✓

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Ailsa Craig SPA Laggan (Islay) SPA Bridgend Flats, Islay SPA/Ramsar Gruinart Flats, Islay SPA/Ramsar Oronsay & South Colonsay SPA North Colonsay & Western Cliffs SPA	Noise/visual disturbance from increased vessel activity	Feeding grounds avoidance, disturbance of flight patterns	✓	✓	✓	✓
	Canna and Sanday SPA Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA Coll SPA/Ramsar Mingulay & Berneray SPA	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Treshnish Isles SPA Rum SPA Inner Moray Firth SPA Moray and Nairn Coast SPA/Ramsar Cromarty Firth SPA/Ramsar Troup, Pennan and Lion's Head SPA East Caithness Cliffs SPA North Caithness Cliffs SPA Caithness & Sutherland Peatlands SPA Caithness Lochs SPA/Ramsar	Presence and operation of turbines	Turbine collision risk			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Dornoch Firth & Loch Fleet SPA/Ramsar Firth of Tay & Eden Estuary SPA/Ramsar Cameron Reservoir SPA/Ramsar Forth Islands SPA Montrose Basin SPA/Ramsar Firth of Forth SPA/Ramsar St. Abbs Head to Fast Castle SPA Fowlsheugh SPA Loch Leven SPA/Ramsar Slammanan Plateau SPA	Night time lighting associated with turbines	Turbine collision risk, disorientation, habitat avoidance			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Fala Flow SPA/Ramsar Greenlaw Moor SPA Din Moss/Hoselaw Loch SPA/Ramsar Westwater SPA/Ramsar Gladhouse Reservoir SPA/Ramsar Loch of Skene SPA Muir of Dinnet SPA South Tayside Gooseroosts SPA/Ramsar Calf of Eday SPA Sule Skerry and Sule Stack SPA West Westray SPA East Sanday Coast SPA Papa Westray SPA Rousay SPA Auskerry SPA Hoy SPA Copinsay SPA North Rona SPA	Noise/visual disturbance from all construction, cable laying & decommissioning activities and blade operation	Feeding grounds avoidance, disturbance of flight patterns		✓	✓	✓
		Construction and operation direct and indirect changes to habitat, e.g. through sediment dynamics	Change in availability of inter-tidal and sub-tidal food sources		✓	✓	✓

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Pentland Firth Islands SPA Flannan Isles SPA Shiant Isles SPA						
Birds of estuarine habitats	Upper Solway Flats & Marshes SPA/Ramsar Castle Loch, Lochmaben SPA/ Ramsar Loch of Inch and Torrs Warren Ramsar Loch Ken & River Dee Marshes SPA/Ramsar Eilean na Muice Duibhe SPA/Ramsar Rinns of Islay SPA/ Ramsar Kintrye Goose Roosts SPA/Ramsar	Installation of cables through intertidal zone	Loss of intertidal foraging habitat due to e.g. excavation works/laying of cables		✓	✓	✓
			Disturbance to roost sites		✓		✓
	Ailsa Craig SPA The Oa SAC Laggan (Islay) SPA Bridgend Flats, Islay SPA/Ramsar	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	
	Gruinart Flats, Islay SPA/Ramsar North Colonsay & Western Cliffs SPA Canna and Sanday SPA Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast)	Presence and operation of turbines	Turbine collision risk			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
		Noise/visual disturbance from increased vessel activity	Feeding grounds avoidance, disturbance of flight patterns	✓	✓	✓	✓
		Construction and operation direct and indirect changes to habitat, e.g. through sediment dynamics	Change in availability of inter-tidal and sub-tidal food sources		✓	✓	✓
Birds of open sea and offshore rocks	Upper Solway Flats & Marshes SPA/Ramsar Rinns of Islay SPA Ailsa Craig SPA North Colonsay & Western Cliffs SPA Canna and Sanday SPA Mingulay & Berneray SPA Treshnish Isles SPA	Installation of cables through intertidal zone	Loss of intertidal foraging habitat due to e.g. excavation works/laying of cables		✓	✓	✓
			Disturbance to roost sites		✓		✓
		Increased vessel traffic	Physical disturbance and/or displacement from key habitat	✓	✓	✓	✓

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	Rum SPA Inner Moray Firth SPA Moray and Nairn Coast SPA Cromarty Firth SPA	Physical presence of wind farm	Physical barrier to migrating birds and potential modification of established migratory routes.			✓	
	East Caithness Cliffs SPA North Caithness Cliffs SPA Caithness & Sutherland Peatlands SPA Firth of Tay & Eden Estuary SPA Firth of Forth SPA/Ramsar St. Abbs Head to Fast Castle SPA Fowlsheugh SPA Loch Leven SPA Calf of Eday SPA	Installation and presence of wind farm	Noise and visual disturbance. Displacement from offshore feeding habitat		✓	✓	
	Sule Skerry and Sule Stack SPA West Westray SPA	Presence and operation of turbines	Turbine collision risk			✓	

Qualifying interest feature	International Sites that have been designated for these interest features	Impact pathway (Source)	Impact	Phase effect likely to occur in?			
				Survey	Construction phase	Operation	Decommissioning
	East Sanday Coast SPA Papa Westray SPA Rousay SPA Auskerry SPA	Night time lighting associated with turbines	Turbine collision risk, disorientation, habitat avoidance			✓	
	Hoy SPA Copinsay SPA North Rona SPA Pentland Firth Islands SPA Flannan Isles SPA	Noise/visual disturbance from all construction, cable laying & decommissioning activities and blade operation	Feeding grounds avoidance, disturbance of flight patterns		✓	✓	✓
	Shiant Isles SPA Orkney Mainland SPA Lewis Peatlands SPA	Noise/visual disturbance from increased vessel activity	Feeding grounds avoidance, disturbance of flight patterns	✓	✓	✓	✓
	Duddon Bay SPA/Ramsar, England Lindisfarne SPA/Ramsar, England Farne Islands SPA, England Morecambe Bay SPA, England	Construction and operation direct and indirect changes to habitat, e.g. through sediment dynamics	Change in availability of sub-tidal food sources		✓	✓	✓

Appendix 3
Potential in-combination effects



Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Solway Firth	Solway Firth SAC/sea and river lampreys	Robin Rigg Offshore Wind farm (operational)	Construction, operation and decommissioning; direct and indirect.	Potential barrier to migration of sea and river lampreys from electromagnetic fields (EMF), construction noise and increased suspended sediment.	✓
Solway Firth	Upper Solway Flats and Marshes SPA/non-breeding bird aggregations Upper Solway Flats and Marshes Ramsar/non-breeding bird aggregations	Robin Rigg Offshore Wind farm (operational)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat. Modification of migratory routes due to increased area of turbines. Potential increased risk of collision with turbines due to increased number of turbines in area (Robin Rigg plus Solway Firth site).	✓
Solway Firth	Loch of Inch and Torrs Warren SPA/non-breeding bird aggregations Loch of Inch and Torrs Warren Ramsar/non-breeding bird aggregations	Robin Rigg Offshore Wind farm (operational)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat. Modification of migratory routes due to increased area of turbines. Potential increased risk of	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				collision with turbines due to increased number of turbines in area (Robin Rigg plus Solway Firth site).	
Solway Firth	Solway Firth SAC/sea and river lampreys	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct and indirect.	Potential combined barrier to migration of sea and river lampreys from wind farm associated activities e.g. electromagnetic fields (EMF), construction noise and increased suspended sediment and oil and gas associated activities e.g. seismic surveys and drilling.	✓
Solway Firth	Upper Solway Flats and Marshes SPA/non-breeding bird aggregations Upper Solway Flats and Marshes Ramsar/non-breeding bird aggregations	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Solway Firth	Loch of Inch and Torrs Warren SPA/non-breeding bird aggregations Loch of Inch and Torrs Warren Ramsar/non-breeding bird aggregations.	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat.	✓
Solway Firth	Upper Solway Flats and Marshes SPA/non-breeding bird aggregations Upper Solway Flats and Marshes Ramsar/non-breeding bird aggregations	Number of onshore wind farms within approx 15km of the SPA/Ramsar: <ul style="list-style-type: none"> • 10 operational • 1 consented • 5 submitted 	Operation; direct.	Modification of migratory routes due to increased area of turbines. Potential increased risk of collision with turbines due to increased number of turbines in area (onshore sites plus Solway Firth site).	✓
Solway Firth	Loch of Inch and Torrs Warren SPA/non-breeding bird aggregations Loch of Inch and Torrs Warren Ramsar/non-breeding bird aggregations.	Number of onshore wind farms within approx 15km of the SPA/Ramsar: <ul style="list-style-type: none"> • 1 under construction • 1 consented • 3 submitted 	Operation; direct.	Modification of migratory routes due to increased area of turbines. Potential increased risk of collision with turbines due to increased number of turbines in area (onshore sites plus Solway Firth site).	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Wigtown Bay	<p>Upper Solway Flats and Marshes SPA/non-breeding bird aggregations</p> <p>Upper Solway Flats and Marshes Ramsar/non-breeding bird aggregations</p>	Robin Rigg Offshore Wind farm (operational)	Operation; direct.	<p>Potential exclusion from key avian foraging habitat.</p> <p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (Robin Rigg plus Solway Firth site).</p>	✓
Wigtown Bay	<p>Loch of Inch and Torrs Warren SPA/non-breeding bird aggregations</p> <p>Loch of Inch and Torrs Warren Ramsar/non-breeding bird aggregations.</p>	Robin Rigg Offshore Wind farm (operational)	Operation; direct.	<p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (Robin Rigg plus Solway Firth site).</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Wigtown Bay	Upper Solway Flats and Marshes SPA/non-breeding bird aggregations Upper Solway Flats and Marshes Ramsar/non-breeding bird aggregations	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat.	✓
Wigtown Bay	Loch of Inch and Torrs Warren SPA/non-breeding bird aggregations Loch of Inch and Torrs Warren Ramsar/non-breeding bird aggregations.	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat.	✓
Wigtown Bay	Upper Solway Flats and Marshes SPA/non-breeding bird aggregations Upper Solway Flats and Marshes Ramsar/non-breeding bird aggregations	Number of onshore wind farms within approx 15km of the SPA/Ramsar: <ul style="list-style-type: none"> • 10 operational • 1 consented • 5 submitted 	Operation; direct.	Modification of migratory routes due to increased area of turbines. Potential increased risk of collision with turbines due to increased number of turbines in area (onshore sites plus Solway Firth site).	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Wigtown Bay	<p>Loch of Inch and Torrs Warren SPA/non-breeding bird aggregations</p> <p>Loch of Inch and Torrs Warren Ramsar/non-breeding bird aggregations.</p>	<p>Number of onshore wind farms within approx 15km of the SPA/Ramsar:</p> <ul style="list-style-type: none"> • 1 under construction • 1 consented • 3 submitted 	Operation; direct.	<p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (onshore sites plus Solway Firth site).</p>	✓
Kintyre	No apparent in-combination impacts.				✓
Islay	South East Islay Skerries SAC/common seal	Sound of Islay Tidal Energy Project – demonstration tidal array of ten 1MW devices to be placed in the Sound of Islay.	Construction, operation and decommissioning; direct and indirect	<p>Disturbance and /or physiological damage due to elevated noise during construction and operation of both sites (e.g. piling).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				<p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both activities (Islay STW site and Sound of Islay tidal array).</p>	
Islay/ Argyll Array/ Kintyre/ Beatrice	South East Islay Skerries SAC/common seal Ascrib, Isay and Dunvegan SAC/ common seal, Eileanan agus Sgeiran Lios mor SAC, common seal, Treshnish Isles SAC/ Grey seal Monach Islands SAC, Grey seal, North Rona SAC, Grey seal	Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development, shipping	Construction, operation and decommissioning; direct and indirect	<p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Behavioural impacts on seals</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Islay	Oronsay and South Colonsay SPA, North Colonsay & Western Cliffs SPA, Gruinart Flats, The Oa SPA, Islay SPA/Ramsar, Kintrye Goose Roosts SPA/Ramsar, Rinns of Islay SPA/Ramsar, Laggan, Islay SPA, Eielean na Mice Duibhe, Islay SPA/Ramsar, Jura, Scarba & the Garvellachs SPA	No specific plan/ project: civilian airport	Construction, operation and decommissioning; direct and indirect	Increased collision risk Disturbance effects on foraging seabirds	✓
Argyll Array	Canna and Sanday SPA, Tiree (corncrake) SPA, Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA, Coll SPA, Coll (corncrake) SPA, Coll Ramsar, Mingulay & Berneray SPA	Onshore wind farms within 50km of west coast; Gigha community, Ruaig Sliabh, Tangy, Deucheran Hill, Beinn an Tuirc Future on and offshore wind farms	Operation; direct	Modification of migratory routes due to increased number of turbines within region. Potential increased risk of collision with turbines due to increased number of turbines in area.	✓
Argyll Array	Canna and Sanday SPA, Tiree (corncrake) SPA, Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA, Coll SPA, Coll (corncrake) SPA, Coll Ramsar, Mingulay & Berneray SPA (all qualifying interest bird species)	No specific plan/ project: civilian airport	Operation; direct and indirect.	Increased collision risk Disturbance effects on foraging seabirds	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Beatrice	River Spey SAC/Atlantic salmon and sea lamprey, Berriedale & Langwell Waters SAC/ Atlantic salmon and sea lamprey, River Oykel SAC/ Atlantic salmon, River Moriston SAC/ Atlantic salmon	Round 3 offshore wind Zone 1 – Moray Firth	Construction, operation and decommissioning; direct and indirect.	Potential barrier to migration of salmon and sea and river lampreys from electromagnetic fields (EMF), construction noise and increased suspended sediment.	✓
Beatrice	Moray Firth SAC/Bottlenose dolphin	Round 3 offshore wind Zone 1 – Moray Firth	Construction, operation and decommissioning; direct and indirect	<p>Disturbance due to elevated noise during construction and operation of both sites (piling etc).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both sites</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				(Round 3 Zone 1 site plus Beatrice site). Potential beneficial impact of sites providing artificial reef habitat and acting as fish aggregation devices (FADs) thereby increasing foraging opportunities.	
Beatrice	Moray Firth SAC/Bottlenose dolphin	Increased vessel activity from all sources (no specific plan), including; Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development & shipping from Inverness and other ports (e.g. due to Inverness Harbour's new quay and marina development)	Surveying, construction, operation and decommissioning; direct and indirect	Long term avoidance of the area. Increased collision risk with construction vessels. Behavioural impacts on dolphins	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Beatrice	Moray Firth SAC/Bottlenose dolphin	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct and indirect	<p>Disturbance and /or physiological damage due to elevated noise during construction and operation of both sites (piling, drilling seismic activity etc).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both activities (Moray Firth licence blocks plus Beatrice site).</p> <p>Potential beneficial impact of sites providing artificial reef habitat and acting as fish</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				aggregation devices (FADs) thereby increasing foraging opportunities.	
Beatrice	Dornoch Firth and Morrich More SAC/common seal, Faray & Holm of Faray SAC, Grey Seal, Sanday SAC	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct and indirect	<p>Disturbance and /or physiological damage due to elevated noise during construction and operation of both sites (piling, drilling seismic survey etc).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both activities (Moray Firth licence blocks</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				<p>plus Beatrice site).</p> <p>Potential beneficial impact of sites providing artificial reef habitat and acting as fish aggregation devices (FADs) thereby increasing foraging opportunities.</p>	
Beatrice	Dornoch Firth and Morrich More SAC/common seal, Faray & Holm of Faray SAC, Grey Seal, Sanday SAC	Round 3 offshore wind Zone 1 – Moray Firth.	Construction, operation and decommissioning; direct and indirect	<p>Disturbance due to elevated noise during construction and operation of both sites (piling etc).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				<p>Physical barrier to movement provided by both sites (Round 3 Zone 1 site plus Beatrice site).</p> <p>Potential beneficial impact of sites providing artificial reef habitat and acting as fish aggregation devices (FADs) thereby increasing foraging opportunities.</p>	
Beatrice	Dornoch Firth and Morrich More SAC/common seal, Faray & Holm of Faray SAC, Grey Seal, Sanday SAC	Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development & shipping from Inverness and other ports (e.g. due to Inverness Harbour's new quay and marina development)	Surveying, construction, operation and decommissioning; direct and indirect	<p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Behavioural impacts on seals</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Beatrice	River Spey SAC/Atlantic salmon and sea lamprey, Berriedale & Langwell Waters SAC/ Atlantic salmon and sea lamprey, River Oykel SAC/ Atlantic salmon, River Moriston SAC/ Atlantic salmon	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct and indirect	Potential combined barrier to migration of Atlantic salmon and sea lamprey from wind farm associated activities e.g. electromagnetic fields (EMF), construction noise and increased suspended sediment and oil and gas associated activities e.g. seismic surveys and drilling.	✓
Beatrice	Inner Moray Firth SPA and Ramsar/ non-breeding bird aggregations; Moray and Nairn Coast SPA and Ramsar/ non-breeding bird aggregations; Cromarty Firth SPA and Ramsar/ non-breeding bird aggregations; Dornoch Firth and Loch Fleet SPA and Ramsar/ non-breeding bird aggregations; East Caithness Cliffs SPA/breeding bird aggregations;	Oil and gas licence blocks (assumed oil and gas activity may be occurring within the licensed area or will occur in the future)	Construction, operation and decommissioning; direct.	Potential exclusion from key avian foraging habitat.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
	<p>North Caithness Cliffs SPA/breeding bird aggregations;</p> <p>Pentland Firth Islands SPA/ breeding bird aggregations;</p> <p>Troup, Pennan and Lion's Heads SPA/ breeding bird aggregations.</p> <p>Caithness Lochs SPA/Ramsar/ breeding bird aggregations</p>				
Beatrice	<p>Inner Moray Firth SPA and Ramsar/ non-breeding bird aggregations;</p> <p>Moray and Nairn Coast SPA and Ramsar/ non-breeding bird aggregations;</p> <p>Cromarty Firth SPA and Ramsar/ non-breeding bird aggregations;</p> <p>Dornoch Firth and Loch Fleet SPA and Ramsar/ non-breeding bird aggregations;</p> <p>East Caithness Cliffs SPA/breeding bird aggregations;</p>	<p>Number of onshore wind farms within approx 15km of the various SPA/Ramsar sites in the area:</p> <ul style="list-style-type: none"> • 7 operational • 2 under construction • 6 consented • 5 submitted 	Operation; direct.	<p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (onshore sites plus Solway Firth site).</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
	<p>North Caithness Cliffs SPA/breeding bird aggregations;</p> <p>Pentland Firth Islands SPA/ breeding bird aggregations;</p> <p>Troup, Pennan and Lion's Heads SPA/ breeding bird aggregations.</p> <p>Caithness Lochs SPA/Ramsar/ breeding bird aggregations</p>				
Beatrice	<p>Inner Moray Firth SPA and Ramsar/ non-breeding bird aggregations;</p> <p>Moray and Nairn Coast SPA and Ramsar/ non-breeding bird aggregations;</p> <p>Cromarty Firth SPA and Ramsar/ non-breeding bird aggregations;</p> <p>Dornoch Firth and Loch Fleet SPA and Ramsar/ non-breeding bird aggregations;</p>	Round 3 offshore wind Zone 1 – Moray Firth.	Construction, operation and decommissioning; direct	<p>Potential exclusion from key avian foraging habitat.</p> <p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (Round 3 Zone 1 site plus Beatrice site).</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
	East Caithness Cliffs SPA/breeding bird aggregations; North Caithness Cliffs SPA/breeding bird aggregations; Pentland Firth Islands SPA/ breeding bird aggregations; Troup, Pennan and Lion's Heads SPA/ breeding bird aggregations. Caithness Lochs SPA/Ramsar/ breeding bird aggregations				
Beatrice	Inner Moray Firth SPA and Ramsar/ non-breeding bird aggregations; Moray and Nairn Coast SPA and Ramsar/ non-breeding bird aggregations; Cromarty Firth SPA and Ramsar/ non-breeding bird aggregations; Dornoch Firth and Loch Fleet SPA and Ramsar/ non-breeding bird aggregations;	Beatrice demonstrator project	Construction, operation and decommissioning; direct	Potential exclusion from key avian foraging habitat. Modification of migratory routes due to increased area of turbines. Potential increased risk of collision with turbines due to increased number of turbines in area (Beatrice demonstrator site plus Beatrice site).	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
	East Caithness Cliffs SPA/breeding bird aggregations; North Caithness Cliffs SPA/breeding bird aggregations; Pentland Firth Islands SPA/ breeding bird aggregations; Troup, Pennan and Lion's Heads SPA/ breeding bird aggregations. Caithness Lochs SPA/Ramsar/ breeding bird aggregations				
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Firth of Tay and Eden Estuary SAC/common seal	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction, operation and decommissioning; direct and indirect	Disturbance due to elevated noise during construction and operation of both sites (piling etc). Long term avoidance of the area. Increased collision risk with construction vessels. Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				<p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both sites (Round 3 Zone 1 site plus STW sites).</p> <p>Potential beneficial impact of sites providing artificial reef habitat and acting as fish aggregation devices (FADs) thereby increasing foraging opportunities.</p>	
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Firth of Tay and Eden Estuary SAC/common seal	Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development, shipping	Construction, operation and decommissioning; direct and indirect	<p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Behavioural impacts on seals</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Isle of May SAC/grey seal	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction, operation and decommissioning; direct and indirect	<p>Disturbance due to elevated noise during construction and operation of both sites (piling etc).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both sites (Round 3 Zone 2 site plus STW sites).</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				Potential beneficial impact of sites providing artificial reef habitat and acting as fish aggregation devices (FADs) thereby increasing foraging opportunities.	
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Isle of May SAC/grey seal	Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development, shipping	Construction, operation and decommissioning; direct and indirect	Long term avoidance of the area. Increased collision risk with construction vessels. Behavioural impacts on seals	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Isle of May SAC/reefs	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction and decommissioning; direct	Potential smothering of reef habitat from sediment plumes during construction.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Berwickshire and North Northumberland Coast SAC/ grey seal	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction, operation and decommissioning; direct and indirect	<p>Disturbance due to elevated noise during construction and operation of both sites (piling etc).</p> <p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p> <p>Physical barrier to movement provided by both sites (Round 3 Zone 2 site plus STW sites).</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				Potential beneficial impact of sites providing artificial reef habitat and acting as fish aggregation devices (FADs) thereby increasing foraging opportunities.	
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Berwickshire and North Northumberland Coast SAC/ grey seal	Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development, shipping	Surveying, construction, operation and decommissioning; direct and indirect	Long term avoidance of the area. Increased collision risk with construction vessels. Behavioural impacts on seals	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Berwickshire and North Northumberland Coast SAC/ reefs	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction and decommissioning; direct	Potential smothering of reef habitat from sediment plumes during construction.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	<p>Firth of Tay and Eden Estuary SPA and Ramsar/aggregations of breeding and non-breeding birds</p> <p>Forth Islands SPA/aggregations of breeding birds</p> <p>Firth of Forth SPA and Ramsar/aggregations of non breeding birds</p> <p>St Abb's Head to Fast Castle SPA/aggregations of breeding birds</p>	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction, operation and decommissioning; direct	<p>Potential exclusion from key avian foraging habitat.</p> <p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (Round 3 Zone 2 site plus STW sites).</p>	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	<p>Firth of Tay and Eden Estuary SPA and Ramsar/aggregations of breeding and non-breeding birds</p> <p>Forth Islands SPA/aggregations of breeding birds</p> <p>Firth of Forth SPA and Ramsar/aggregations of non breeding birds</p> <p>St Abb's Head to Fast Castle SPA/aggregations of breeding birds</p>	<p>Number of onshore wind farms within approx 15km of the various SPA/Ramsar sites in the area:</p> <ul style="list-style-type: none"> • 3 operational • 2 under construction • 1 consented • 6 submitted 	Operation; direct.	<p>Modification of migratory routes due to increased area of turbines.</p> <p>Potential increased risk of collision with turbines due to increased number of turbines in area (onshore sites plus Solway Firth site).</p>	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Forth Islands SPA/aggregations of breeding birds Firth of Forth SPA and Ramsar/aggregations of non breeding birds	Edinburgh Waterfront – waterfront regeneration project at Granton.	Construction, operation and decommissioning; direct	Habitat loss/exclusion. Disturbance of feeding areas and disruption of movement to and from breeding, roosting and foraging sites.	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Forth Islands SPA/aggregations of breeding birds Firth of Forth SPA and Ramsar/aggregations of non breeding birds	Edinburgh Waterfront – waterfront regeneration project at Leith.	Construction, operation and decommissioning; direct	Habitat loss/exclusion. Disturbance of feeding areas and disruption of movement to and from breeding, roosting and foraging sites.	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Firth of Tay and Eden Estuary SAC/common seal	Dundee Waterfront regeneration	Construction, operation and decommissioning; direct and indirect	Disturbance due to elevated noise during construction and operation of both sites (e.g. piling, increased boat traffic etc). Long term avoidance of the area. Increased collision risk with construction vessels.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
				<p>Potential reduction in food resource due to impacts on prey species and habitat loss/disturbance.</p> <p>Potential conflict with commercial fishing due to displaced fishing effort.</p>	
<p>Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array</p>	<p>Firth of Tay and Eden Estuary SAC/common seal</p>	<p>Increased vessel activity from all sources (no specific plan), including motorised water sports, fishing vessels, research and wildlife-watching vessels, vessels associated with future on and offshore development, shipping</p>	<p>Surveying, construction, operation and decommissioning; direct and indirect</p>	<p>Long term avoidance of the area.</p> <p>Increased collision risk with construction vessels.</p> <p>Behavioural impacts on seals</p>	<p>✓</p>
<p>Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array</p>	<p>Firth of Tay and Eden Estuary SPA and Ramsar/aggregations of breeding and non-breeding birds</p>	<p>Dundee Waterfront regeneration</p>	<p>Construction, operation and decommissioning; direct and indirect</p>	<p>Habitat loss/exclusion. Disturbance of feeding areas and disruption of movement to and from breeding, roosting and foraging sites.</p>	<p>✓</p>

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Firth of Forth SPA and Ramsar/aggregations of non breeding birds	Bo'ness foreshore redevelopment	Construction, operation and decommissioning; direct and indirect	Habitat loss/exclusion. Disturbance of feeding areas and disruption of movement to and from breeding, roosting and foraging sites.	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Firth of Forth SPA and Ramsar/aggregations of non breeding birds Forth Islands SPA/aggregations of breeding birds	Proposed new Forth replacement crossing	Construction; direct.	Habitat loss/exclusion. Disturbance of feeding areas and disruption of movement to and from breeding, roosting and foraging sites.	✓
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	Firth of Forth SPA and Ramsar/aggregations of non breeding birds Forth Islands SPA/aggregations of breeding birds	Middle Bank, Firth of Forth – Licensed aggregate extraction area.	Construction, operation and decommissioning; direct	Potential exclusion from key avian foraging habitat.	✓

Scottish Offshore Site Name	International Site (s)/ relevant qualifying interest feature	Other plan/ project in question	Nature of effect	Possible combined effect	Potentially significant effect on site integrity?
Inch Cape; Bell Rock; Neart na Gaoithe; Forth Array	River Tay SAC/ Atlantic salmon, sea and river lampreys, River South Esk SAC, Atlantic salmon, River Tweed SAC, Atlantic salmon, River Teith SAC, Atlantic salmon, sea and river lampreys	Round 3 offshore wind Zone 2 –Firth of Forth.	Construction, operation and decommissioning; direct and indirect	Potential barrier to migration of salmon and sea and river lampreys from electromagnetic fields (EMF), construction noise and increased suspended sediment.	

Data source on operational, under construction, consented and submitted wind farms: <http://www.bwea.com/ukwed/google.asp>

Appendix 4
Full list of Qualifying Interest Features
of International Sites

A decorative graphic consisting of several overlapping, curved shapes in a dark blue color. The shapes are layered, with some appearing to be in front of others, creating a sense of depth and movement. The overall effect is a modern, abstract design that complements the text above.

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
Solway Firth SAC	Atlantic salt meadows
	Coastal shingle vegetation outside the reach of waves
	Dune grassland
	Estuaries
	Glasswort and other annuals colonising mud and sand
	Intertidal mudflats and sandflats
	Reefs
	River lamprey (<i>Lampetra fluviatilis</i>)
	Sea lamprey (<i>Petromyzon marinus</i>)
	Subtidal sandbanks
Upper Solway Flats and Marshes SPA	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Cormorant (<i>Phalacrocorax carbo</i>), non-breeding
	Curlew (<i>Numenius arquata</i>), non-breeding
	Dunlin (<i>Calidris alpina</i>), non-breeding
	Golden plover (<i>Pluvialis apricaria</i>), non-breeding
	Goldeneye (<i>Bucephala clangula</i>), non-breeding
	Great crested grebe (<i>Podiceps cristatus</i>), non-breeding
	Grey plover (<i>Pluvialis squatarola</i>), non-breeding
	Icelandic Black-tailed Godwit (<i>Limosa limosa islandica</i>), non-breeding
	Knot (<i>Calidris canutus</i>), non-breeding
	Lapwing (<i>Vanellus vanellus</i>), non-breeding
	Mallard (<i>Anas platyrhynchos</i>), non-breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Pintail (<i>Anas acuta</i>), non-breeding
	Redshank (<i>Tringa totanus</i>), non-breeding
	Ringed plover (<i>Charadrius hiaticula</i>), non-breeding
	Ringed plover (P) (<i>Charadrius hiaticula</i>), non-breeding
	Scaup (<i>Aythya marila</i>), non-breeding
	Shelduck (<i>Tadorna tadorna</i>), non-breeding
	Svalbard Barnacle goose (<i>Branta leucopsis</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Waterfowl assemblage, non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding
Upper Solway Flats and Marshes Ramsar	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Curlew (<i>Numenius arquata</i>), non-breeding
	Knot (<i>Calidris canutus</i>), non-breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Pintail (<i>Anas acuta</i>), non-breeding
	Scaup (<i>Aythya marila</i>), non-breeding
	Svalbard Barnacle goose (<i>Branta leucopsis</i>), non-breeding
Castle Loch, Lochmaben Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
River Bladnoch SAC	Atlantic salmon (<i>Salmo salar</i>)
Loch of Inch and Torrs Warren SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Hen harrier (<i>Circus cyaneus</i>), non-breeding
Loch of Inch and Torrs Warren Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Sand dune
Solway Mosses North SAC	Active raised bogs
	Degraded raised bogs still capable of natural regeneration
Loch Ken and River Dee Marshes SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
Loch Ken and River Dee Marshes Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
Luce Bay and Sands SAC	Coastal dune heathland
	Dune grassland
	Great crested newt (<i>Triturus cristatus</i>)
	Intertidal mudflats and sandflats
	Reefs
	Shallow inlets and bays

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Shifting dunes Shifting dunes with marram Subtidal sandbanks
Mull of Galloway SAC	Vegetated sea cliffs
Burrow Head SAC	Great Crested Newt (<i>Triturus cristatus</i>)
South-East Islay Skerries SAC	Common seal (<i>Phoca vitulina</i>)
Eilean na Muice	Blanket bog (upland)
Duibhe SAC	Upland bog; Depressions on peat substrates
Eilean na Muice Duibhe SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
Eilean na Muice Duibhe Ramsar	Blanket bog (upland)
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
Rinns of Islay SAC	Marsh fritillary butterfly (<i>Euphydryas (Eurodryas, Hypodryas) aurinia</i>)
Rinns of Islay SPA	Chough (<i>Pyrrhocorax pyrrhocorax</i>), breeding
	Chough (<i>Pyrrhocorax pyrrhocorax</i>), non-breeding
	Common scoter (<i>Melanitta nigra</i>), breeding
	Corncrake (<i>Crex crex</i>), breeding
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Hen harrier (<i>Circus cyaneus</i>), breeding Whooper swan (<i>Cygnus cygnus</i>), non-breeding
Rinns of Islay Ramsar	Blanket Bog
	Breeding bird assemblage
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding
Jura, Scarba & the Garvellachs SPA	Golden eagle (<i>Aquila chrysaetos</i>), breeding
Kintrye Goose Roosts SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
Kintrye Goose Roosts Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
Arran Moors SPA	Hen harrier (<i>Circus cyaneus</i>), breeding
Ailsa Craig SPA	
Glac na Criche SAC	Blanket bog
	Dry heaths
	Marsh fritillary butterfly (<i>Euphydryas (Eurodryas, Hypodryas) aurinia</i>)
	Vegetated sea cliffs
The Oa SAC	Chough (<i>Pyrhacorax pyrrhacorax</i>), breeding
Laggan (Islay) SPA	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
Bridgend Flats, Islay SPA	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
Bridgend Flats, Islay Ramsar	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
Feur Lochain SAC	Acid peat-stained lakes and ponds (GIS on cable routes?)
	Blanket bog
	Upland bog; Depressions on peat substrates
Gruinart Flats, Islay SPA	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
Gruinart Flats, Islay Ramsar	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Light-bellied Brent goose (<i>Branta bernicla hrota</i>), non-breeding
Oronsay SAC	Machair (Supralittoral sediment)
Oronsay and South Colonsay SPA	Chough (<i>Pyrhacorax pyrrhacorax</i>), breeding
	Corncrake (<i>Crex crex</i>), breeding
North Colonsay & Western Cliffs SPA	Breeding seabird assemblage, breeding
	Chough (<i>Pyrhacorax pyrrhacorax</i>), breeding
	Chough (<i>Pyrhacorax pyrrhacorax</i>), non-breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
Tiree Machair SAC	Dune grassland
	Humid dune slacks

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Machair
	Naturally nutrient-rich lakes or lochs which are often dominated by pondweed
	Shifting dunes
	Shifting dunes with marram
Loch a' Phuill SAC	Naturally nutrient-rich lakes or lochs which are often dominated by pondweed
Coll Machair SAC	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels
	Dune grassland
	Humid dune slacks
	Machair
	Shifting dunes with marram
	Slender naiad (<i>Najas flexilis</i>)
Canna and Sanday SPA	Breeding seabird assemblage, breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Herring gull (<i>Larus argentatus</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
	Puffin (<i>Fratercula arctica</i>), breeding
	Shag (<i>Phalacrocorax aristotelis</i>), breeding
Tiree (corncrake) SPA	Corncrake (<i>Crex crex</i>), breeding
Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA	Dunlin (<i>Calidris alpina schinzii</i>), breeding
	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), breeding
	Redshank (<i>Tringa totanus</i>), breeding
	Ringed plover (<i>Charadrius hiaticula</i>), breeding
	Ringed plover (<i>Charadrius hiaticula</i>), non-breeding
	Turnstone (<i>Arenaria interpres</i>), non-breeding
Coll SPA	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
Coll (corncrake) SPA	Corncrake (<i>Crex crex</i>), breeding
Coll Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
Mingulay & Berneray SPA	Breeding seabird assemblage, breeding
	Fulmar (<i>Fulmarus glacialis</i>), breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
	Puffin (<i>Fratercula arctica</i>), breeding
	Razorbill (<i>Alca torda</i>), breeding
	Shag (<i>Phalacrocorax aristotelis</i>), breeding
Treshnish Isles SAC	Grey seal (<i>Halichoerus grypus</i>)
	Reefs
Treshnish Isles SPA	Greenland Barnacle goose (<i>Branta leucopsis</i>), non-breeding
	Storm Petrel (<i>Hydrobates pelagicus</i>), breeding
Cnuic agus Cladach Mhuile (Mull Coast and Hills) SPA	Golden eagle (<i>Aquila chrysaetos</i>), breeding
Rum SAC	Acid peat-stained lakes and ponds
	Acidic scree
	Alpine and subalpine heaths
	Base-rich fens
	Base-rich scree
	Blanket bog
	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels
	Depressions on peat substrates
	Dry Heaths
	Grasslands on soils rich in heavy metals
	Otter (<i>Lutra lutra</i>)
	Plants in crevices on acid rocks
	Plants in crevices on base-rich rocks
	Species-rich grassland with mat-grass in upland areas
	Tall herb communities
	Vegetated sea cliffs

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Wet heathland with cross-leaved heath
Rum SPA	Breeding seabird assemblage, breeding
	Golden eagle (<i>Aquila chrysaetos</i>), breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
	Manx shearwater (<i>Puffinus puffinus</i>), breeding
	Red-throated diver (<i>Gavia stellata</i>), breeding
Moray Firth SAC	Bottlenose dolphin (<i>Tursiops truncatus</i>)
	Subtidal sandbanks
Inner Moray Firth SPA/Ramsar	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Common tern (<i>Sterna hirundo</i>), breeding
	Cormorant (<i>Phalacrocorax carbo</i>), non-breeding
	Curlew (<i>Numenius arquata</i>), non-breeding
	Goldeneye (<i>Bucephala clangula</i>), non-breeding
	Goosander (<i>Mergus merganser</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Osprey (<i>Pandion haliaetus</i>), breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding
	Red-breasted merganser (<i>Mergus serrator</i>), non-breeding
	Redshank (<i>Tringa totanus</i>), non-breeding
	Scaup (<i>Aythya marila</i>), non-breeding
	Teal (<i>Anas crecca</i>), non-breeding
	Waterfowl assemblage, non-breeding
	Wigeon (<i>Anas penelope</i>), non-breeding
Inner Moray Firth Ramsar	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Mudflat
	Red-breasted merganser (<i>Mergus serrator</i>), non-breeding
	Redshank (<i>Tringa totanus</i>), non-breeding
	Saltmarsh
	Sand dune

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Sandflat
	Shingle
	Waterfowl assemblage, non-breeding
Moray and Nairn Coast SPA	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Common scoter (<i>Melanitta nigra</i>), non-breeding
	Dunlin (<i>Calidris alpina alpina</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Long-tailed duck (<i>Clangula hyemalis</i>), non-breeding
	Osprey (<i>Pandion haliaetus</i>), breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Red-breasted merganser (<i>Mergus serrator</i>), non-breeding
	Redshank (<i>Tringa totanus</i>), non-breeding
	Velvet scoter (<i>Melanitta fusca</i>), non-breeding
	Waterfowl assemblage, non-breeding
	Wigeon (<i>Anas penelope</i>), non-breeding
Moray and Nairn Coast Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding
	Mudflat
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Redshank (<i>Tringa totanus</i>), non-breeding
	Saltmarsh
	Sand dune
	Shingle
	Waterfowl assemblage, non-breeding
Wet woodland	
Cromarty Firth SPA	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Common tern (<i>Sterna hirundo</i>), breeding
	Curlew (<i>Numenius arquata</i>), non-breeding
	Dunlin (<i>Calidris alpina alpina</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Knot (<i>Calidris canutus</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Osprey (<i>Pandion haliaetus</i>), breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding
	Pintail (<i>Anas acuta</i>), non-breeding
	Red-breasted merganser (<i>Mergus serrator</i>), non-breeding
	Redshank (<i>Tringa totanus</i>), non-breeding
	Scaup (<i>Aythya marila</i>), non-breeding
	Waterfowl assemblage, non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding
	Wigeon (<i>Anas penelope</i>), non-breeding
Cromarty Firth Ramsar	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Mudflat
	Waterfowl assemblage, non-breeding
Troup, Pennan and Lion's head SPA	Breeding seabird assemblage, breeding
	Fulmar (<i>Fulmarus glacialis</i>), breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Herring gull (<i>Larus argentatus</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
	Razorbill (<i>Alca torda</i>), breeding
East Caithness Cliffs SAC	Vegetated sea cliffs
East Caithness Cliffs SPA	Breeding seabird assemblage, breeding
	Cormorant (<i>Phalacrocorax carbo</i>), breeding
	Fulmar (<i>Fulmarus glacialis</i>), breeding
	Great black-backed gull (<i>Larus marinus</i>), breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Herring gull (<i>Larus argentatus</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
	Peregrine (<i>Falco peregrinus</i>), breeding
	Puffin (<i>Fratercula arctica</i>), breeding
	Razorbill (<i>Alca torda</i>), breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Shag (<i>Phalacrocorax aristotelis</i>)*
Berriedale & Langwell Waters SAC	Atlantic salmon (<i>Salmo salar</i>)
North Caithness Cliffs SPA	Breeding seabird assemblage, breeding Fulmar (<i>Fulmarus glacialis</i>), breeding Guillemot (<i>Uria aalge</i>), breeding Kittiwake (<i>Rissa tridactyla</i>), breeding Peregrine (<i>Falco peregrinus</i>), breeding Puffin (<i>Fratercula arctica</i>), breeding Razorbill (<i>Alca torda</i>), breeding
Caithness & Sutherland Peatlands SAC	Acid peat-stained lakes and ponds Blanket bog Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels Depressions on peat substrates Marsh saxifrage (<i>Saxifraga hirculus</i>) Otter (<i>Lutra lutra</i>) Very wet mires often identified by an unstable 'quaking' surface Wet heathland with cross-leaved heath
Caithness & Sutherland Peatlands SPA	Black-throated diver (<i>Gavia arctica</i>), breeding Common scoter (<i>Melanitta nigra</i>), breeding Dunlin (<i>Calidris alpina schinzii</i>), breeding Golden eagle (<i>Aquila chrysaetos</i>), breeding Golden plover (<i>Pluvialis apricaria</i>), breeding Greenshank (<i>Tringa nebularia</i>), breeding Hen harrier (<i>Circus cyaneus</i>), breeding Merlin (<i>Falco columbarius</i>), breeding Red-throated diver (<i>Gavia stellata</i>), breeding Short-eared owl (<i>Asio flammeus</i>), breeding Wigeon (<i>Anas penelope</i>), breeding Wood sandpiper (<i>Tringa glareola</i>), breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
Caithness & Sutherland Peatlands Ramsar	Blanket bog
	Breeding bird assemblage
	Dunlin (<i>Calidris alpina schinzi</i>), breeding
	Greylag goose (<i>Anser anser</i>), breeding
Caithness Lochs SPA	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding
Caithness Lochs Ramsar	Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding
Dornoch Firth and Morrich More SAC	Atlantic salt meadows
	Coastal dune heathland
	Common seal (<i>Phoca vitulina</i>)
	Dune grassland
	Dunes with juniper thickets
	Estuaries
	Glasswort and other annuals colonising mud and sand
	Humid dune slacks
	Intertidal mudflats and sandflats
	Lime-deficient dune heathland with crowberry
	Otter (<i>Lutra lutra</i>)
	Reefs
	Shifting dunes
	Shifting dunes with marram
Subtidal sandbanks	
Dornoch Firth and Loch Fleet SPA	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Curlew (<i>Numenius arquata</i>), non-breeding
	Dunlin (<i>Calidris alpina alpina</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Osprey (<i>Pandion haliaetus</i>), breeding
	Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Teal (<i>Anas crecca</i>), non-breeding
	Waterfowl assemblage, non-breeding
	Wigeon (<i>Anas penelope</i>), non-breeding
Dornoch Firth and Loch Fleet Ramsar	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
	Mudflat
	Reefs
	Saltmarsh
	Sand dune
	Sandflat
	Waterfowl assemblage, non-breeding
	Wet woodland
	Wigeon (<i>Anas penelope</i>), non-breeding
River Oykel SAC	Atlantic salmon (<i>Salmo salmar</i>)
Barry Links SAC	Coastal dune heathland
	Dune grassland
	Humid dune slacks
	Shifting dunes
	Shifting dunes with marram
Firth of Tay & Eden Estuary SAC	Common seal (<i>Phoca vitulina</i>)
	Estuaries
	Intertidal mudflats and sandflats
	Subtidal sandbanks
Firth of Tay & Eden Estuary SPA	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding
	Common scoter (<i>Melanitta nigra</i>), non-breeding
	Cormorant (<i>Phalacrocorax carbo</i>), non-breeding
	Dunlin (<i>Calidris alpina alpina</i>), non-breeding
	Eider (<i>Somateria mollissima</i>), non-breeding
	Goldeneye (<i>Bucephala clangula</i>), non-breeding
	Goosander (<i>Mergus merganser</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Grey plover (<i>Pluvialis squatarola</i>), non-breeding Greylag goose (<i>Anser anser</i>), non-breeding Icelandic Black-tailed Godwit (<i>Limosa limosa islandica</i>), non-breeding Little tern (<i>Sterna albifrons</i>), breeding Long-tailed duck (<i>Clangula hyemalis</i>), non-breeding Marsh harrier (<i>Circus aeruginosus</i>), breeding Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Red-breasted merganser (<i>Mergus serrator</i>), non-breeding Redshank (<i>Tringa totanus</i>), non-breeding Sanderling (<i>Calidris alba</i>), non-breeding Shelduck (<i>Tadorna tadorna</i>), non-breeding Velvet scoter (<i>Melanitta fusca</i>), non-breeding Waterfowl assemblage, non-breeding
Firth of Tay & Eden Estuary Ramsar	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding Greylag goose (<i>Anser anser</i>), non-breeding Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Redshank (<i>Tringa totanus</i>), non-breeding Waterfowl assemblage, non-breeding
River Tay SAC	Atlantic salmon (<i>Salmo salar</i>) Brook lamprey (<i>Lampetra planeri</i>) Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels Otter (<i>Lutra lutra</i>) River lamprey (<i>Lampetra fluviatilis</i>) Sea lamprey (<i>Petromyzon marinus</i>)
Cameron Reservoir SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Cameron Reservoir Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Forth Islands SPA	Arctic tern (<i>Sterna paradisaea</i>), breeding Breeding seabird assemblage, breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Common tern (<i>Sterna hirundo</i>), breeding Cormorant (<i>Phalacrocorax carbo</i>), breeding Fulmar (<i>Fulmarus glacialis</i>), breeding Gannet (<i>Morus bassanus</i>), breeding Guillemot (<i>Uria aalge</i>), breeding Herring gull (<i>Larus argentatus</i>), breeding Kittiwake (<i>Rissa tridactyla</i>), breeding Lesser black-backed Gull (<i>Larus fuscus</i>), breeding Puffin (<i>Fratercula arctica</i>), breeding Razorbill (<i>Alca torda</i>), breeding Roseate tern (<i>Sterna dougallii</i>), breeding Sandwich tern (<i>Sterna sandvicensis</i>), breeding Shag (<i>Phalacrocorax aristotelis</i>), breeding
Isle of May SAC	Grey seal (<i>Halichoerus grypus</i>) Reefs
Montrose Basin SPA	Dunlin (<i>Calidris alpina alpina</i>), non-breeding Eider (<i>Somateria mollissima</i>), non-breeding Greylag goose (<i>Anser anser</i>), non-breeding Knot (<i>Calidris canutus</i>), non-breeding Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Redshank (<i>Tringa totanus</i>), non-breeding Shelduck (<i>Tadorna tadorna</i>), non-breeding Waterfowl assemblage, non-breeding Wigeon (<i>Anas penelope</i>), non-breeding
Montrose Basin Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding Mudflat Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Redshank (<i>Tringa totanus</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Waterfowl assemblage, non-breeding
Firth of Forth SPA	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding, Common scoter (<i>Melanitta nigra</i>), non-breeding, Cormorant (<i>Phalacrocorax carbo</i>), non-breeding, Curlew (<i>Numenius arquata</i>), non-breeding, Dunlin (<i>Calidris alpina alpina</i>), non-breeding, Eider (<i>Somateria mollissima</i>), non-breeding, Golden plover (<i>Pluvialis apricaria</i>), non-breeding, Goldeneye (<i>Bucephala clangula</i>), non-breeding, Great crested grebe (<i>Podiceps cristatus</i>), non-breeding, Grey plover (<i>Pluvialis squatarola</i>), non-breeding, Knot (<i>Calidris canutus</i>), non-breeding, Lapwing (<i>Vanellus vanellus</i>), non-breeding, Long-tailed duck (<i>Clangula hyemalis</i>), non-breeding, Mallard (<i>Anas platyrhynchos</i>), non-breeding, Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding, Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding, Red-breasted merganser (<i>Mergus serrator</i>), non-breeding, Red-throated diver (<i>Gavia stellata</i>), non-breeding, Redshank (<i>Tringa totanus</i>), non-breeding, Ringed plover (<i>Charadrius hiaticula</i>), non-breeding, Sandwich tern (<i>Sterna sandvicensis</i>), non-breeding, Scaup (<i>Aythya marila</i>), non-breeding, Shelduck (<i>Tadorna tadorna</i>), non-breeding, Slavonian grebe (<i>Podiceps auritus</i>), non-breeding, Turnstone (<i>Arenaria interpres</i>), non-breeding, Velvet scoter (<i>Melanitta fusca</i>), non-breeding, Waterfowl assemblage, non-breeding, Wigeon (<i>Anas penelope</i>), non-breeding
Firth of Forth Ramsar	<p>Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding</p> <p>Goldeneye (<i>Bucephala clangula</i>), non-breeding</p> <p>Knot (<i>Calidris canutus</i>), non-breeding</p> <p>Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding</p> <p>Redshank (<i>Tringa totanus</i>), non-breeding</p> <p>Sandwich tern (<i>Sterna sandvicensis</i>), non-breeding</p> <p>Shelduck (<i>Tadorna tadorna</i>), non-breeding</p> <p>Slavonian grebe (<i>Podiceps auritus</i>), non-breeding</p> <p>Turnstone (<i>Arenaria interpres</i>), non-breeding</p> <p>Waterfowl assemblage, non-breeding</p>
St Abb's Head to Fast Castle SAC	Vegetated sea cliffs
St Abb's Head to Fast Castle SPA	<p>Breeding seabird assemblage, breeding</p> <p>Guillemot (<i>Uria aalge</i>), breeding</p> <p>Herring gull (<i>Larus argentatus</i>), breeding</p> <p>Kittiwake (<i>Rissa tridactyla</i>), breeding</p>

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Razorbill (<i>Alca torda</i>), breeding
	Shag (<i>Phalacrocorax aristotelis</i>), breeding
River South Esk SAC	Atlantic salmon (<i>Salmo salar</i>)
	Pearl mussel (<i>Margaritifera margaritifera</i>)
River Tweed SAC	Atlantic salmon (<i>Salmo salar</i>)
	Pearl mussel (<i>Margaritifera margaritifera</i>)
Fowlsheugh SPA	Breeding seabird assemblage, breeding
	Fulmar (<i>Fulmarus glacialis</i>), breeding
	Guillemot (<i>Uria aalge</i>), breeding
	Herring gull (<i>Larus argentatus</i>), breeding
	Kittiwake (<i>Rissa tridactyla</i>), breeding
	Razorbill (<i>Alca torda</i>), breeding
Loch Leven SPA	Cormorant (<i>Phalacrocorax carbo</i>), non-breeding
	Gadwall (<i>Anas strepera</i>), non-breeding
	Goldeneye (<i>Bucephala clangula</i>), non-breeding
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Pochard (<i>Aythya ferina</i>), non-breeding
	Shoveler (<i>Anas clypeata</i>), non-breeding
	Teal (<i>Anas crecca</i>), non-breeding
	Tufted duck (<i>Aythya fuligula</i>), non-breeding
	Waterfowl assemblage, non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
Loch Leven Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Shoveler (<i>Anas clypeata</i>), non-breeding
	Waterfowl assemblage, non-breeding
Slammanan Plateau SPA	Taiga bean goose (<i>Anser fabalis fabalis</i>), non-breeding
Fala Flow SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Fala Flow Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Greenlaw Moor SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Din Moss / Hoselaw Loch SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
Din Moss / Hoselaw Loch Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
	Greylag goose (<i>Anser anser</i>), non-breeding
Westwater SPA	Waterfowl assemblage, non-breeding
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Westwater Ramsar	Waterfowl assemblage, non-breeding
	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Gladhouse Reservoir SPA	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Gladhouse Reservoir Ramsar	Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding
Loch of Skene SPA	Greylag goose (<i>Anser anser</i>), non-breeding
	Whooper swan (<i>Cygnus cygnus</i>), non-breeding
Loch of Skene Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding
Muir of Dinnet SAC	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels
	Degraded raised bog

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURES
	Dry heaths Otter (<i>Lutra lutra</i>) Very wet mires often identified by an unstable 'quaking' surface
Muir of Dinnet SPA	Greylag goose (<i>Anser anser</i>), non-breeding Waterfowl assemblage, non-breeding
Muir of Dinnet Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding
South Tayside Goose roosts SPA	Greylag goose (<i>Anser anser</i>), non-breeding Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding Waterfowl assemblage, non-breeding
South Tayside Goose roosts Ramsar	Greylag goose (<i>Anser anser</i>), non-breeding Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding

Note: the following sites from further afield have only been screened in to the assessment because of long range foraging or migration patterns of the qualifying interest features listed below:

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE
Berwickshire and North Northumberland Coast SAC	Grey seal (<i>Halichoerus grypus</i>).
Faray and Holm of Faray SAC	Grey seal (<i>Halichoerus grypus</i>).
Monach Islands SAC	Grey seal (<i>Halichoerus grypus</i>).
North Rona SAC	Grey seal (<i>Halichoerus grypus</i>).
Eileanan agus Sgeiran Lios mor SAC	Common seal (<i>Phoca vitulina</i>)
Ascrib, Isay and Dunvegan SAC	Common seal (<i>Phoca vitulina</i>)
Murlough SAC	Common seal (<i>Phoca vitulina</i>)
Strangford Lough SAC	Common seal (<i>Phoca vitulina</i>)
Murlough SAC	Common seal (<i>Phoca vitulina</i>)
Strangford Lough SAC	Common seal (<i>Phoca vitulina</i>)
Sanday SAC	Common seal (<i>Phoca vitulina</i>)
River Spey SAC	Sea lamprey <i>Petromyzon marinus</i> Atlantic Salmon <i>Salmo salar</i>
River Eden SAC	Sea lamprey <i>Petromyzon marinus</i> River lamprey <i>Lampetra fluviatilis</i> Atlantic Salmon <i>Salmo salar</i>
River Teith SAC	Sea lamprey <i>Petromyzon marinus</i> River lamprey <i>Lampetra fluviatilis</i> Atlantic Salmon <i>Salmo salar</i>
River Moriston SAC	Atlantic Salmon <i>Salmo salar</i>
Duddon Estuary SPA/Ramsar	Site has migratory and/or seabird species
Morecambe Bay SPA	Site has migratory and/or seabird species
Morecambe Bay Ramsar	Site has migratory and/or seabird species
Waddenzee SAC, Netherlands	Bottlenose dolphin (<i>Tursiops truncatus</i>)
Noordzeekustzone SAC, Netherlands	Bottlenose dolphin (<i>Tursiops truncatus</i>)
Voordelta SAC, Netherlands	Bottlenose dolphin (<i>Tursiops truncatus</i>)

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE
Doggerbank SAC, Germany	Common seal (<i>Phoca vitulina</i>), Harbour porpoise (<i>Phocoena phocoena</i>)
NTP S-H Wattenmeer und angrenzende Küstengebiete SAC, Germany	Bottlenose dolphin (<i>Tursiops truncatus</i>)
Lindisfarne SPA	Site has migratory and/or seabird species
Lindisfarne Ramsar	Site has migratory and/or seabird species
Farne Islands SPA	Site has migratory and/or seabird species
South Uist Machair and Lochs SPA	Site has migratory and/or seabird species
South Uist Machair and Lochs Ramsar	Site has migratory and/or seabird species
Aird and Borve, Benbecula SPA	Site has migratory and/or seabird species
Monach Isles SPA	Site has migratory and/or seabird species
North Uist Machair and Islands SPA	Site has migratory and/or seabird species
North Uist Machair and Islands Ramsar	Site has migratory and/or seabird species
Mointeach Scadabhaigh SPA	Site has migratory and/or seabird species
Tips of Corsemaul and tom Mor SPA	Site has migratory and/or seabird species
Loch of Strathbeg SPA	Site has migratory and/or seabird species
Loch of Strathbeg Ramsar	Site has migratory and/or seabird species
Lewis Peatlands SPA	Site has migratory and/or seabird species
Lewis Peatlands Ramsar	Site has migratory and/or seabird species
North Harris Mountains SPA	Site has migratory and/or seabird species
Flannan Isles SPA	Site has migratory and/or seabird species
Shiant Isles SPA	Site has migratory and/or seabird species
Loch Shiel SPA	Site has migratory and/or seabird species
Papa Westray SPA	Site has migratory and/or seabird species
East Sanday Coast SPA	Site has migratory and/or seabird species
East Sanday Coast Ramsar	Site has migratory and/or seabird species
West Westray SPA	Site has migratory and/or seabird species

INTERNATIONAL SITE	QUALIFYING INTEREST FEATURE
Rousay SPA	Site has migratory and/or seabird species
Calf of Eday SPA	Site has migratory and/or seabird species
Orkney Mainland Moors SPA	Site has migratory and/or seabird species
Auskerry SPA	Site has migratory and/or seabird species
Hoy SPA	Site has migratory and/or seabird species
Copinsay SPA	Site has migratory and/or seabird species
Sule Skerry and Sule Stack SPA	Site has migratory and/or seabird species
North Rona and Sula Sgeir SPA	Site has migratory and/or seabird species
Switha SPA	Site has migratory and/or seabird species
Pentland Firth Islands	Site has migratory and/or seabird species

Appendix 5
Figures (International Sites in Relation to
Proposed Development Sites)

A decorative graphic consisting of several overlapping, curved shapes in a dark blue color. The shapes are layered, with some appearing to be in front of others, creating a sense of depth and movement. The overall effect is a modern, abstract design that complements the text above.






Project:
SEA of Offshore Energy

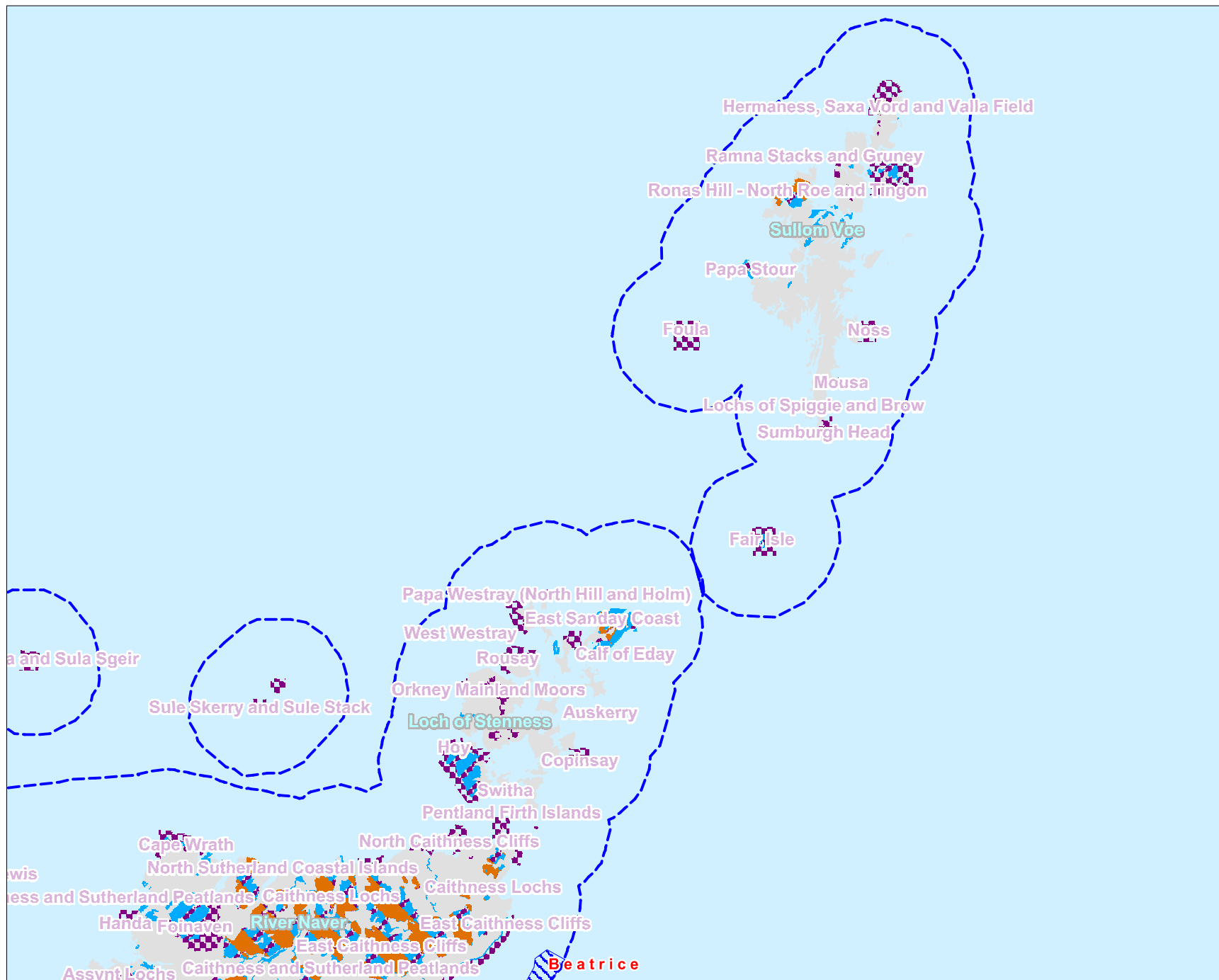
Map:
Appropriate Assessment

Prepared By:

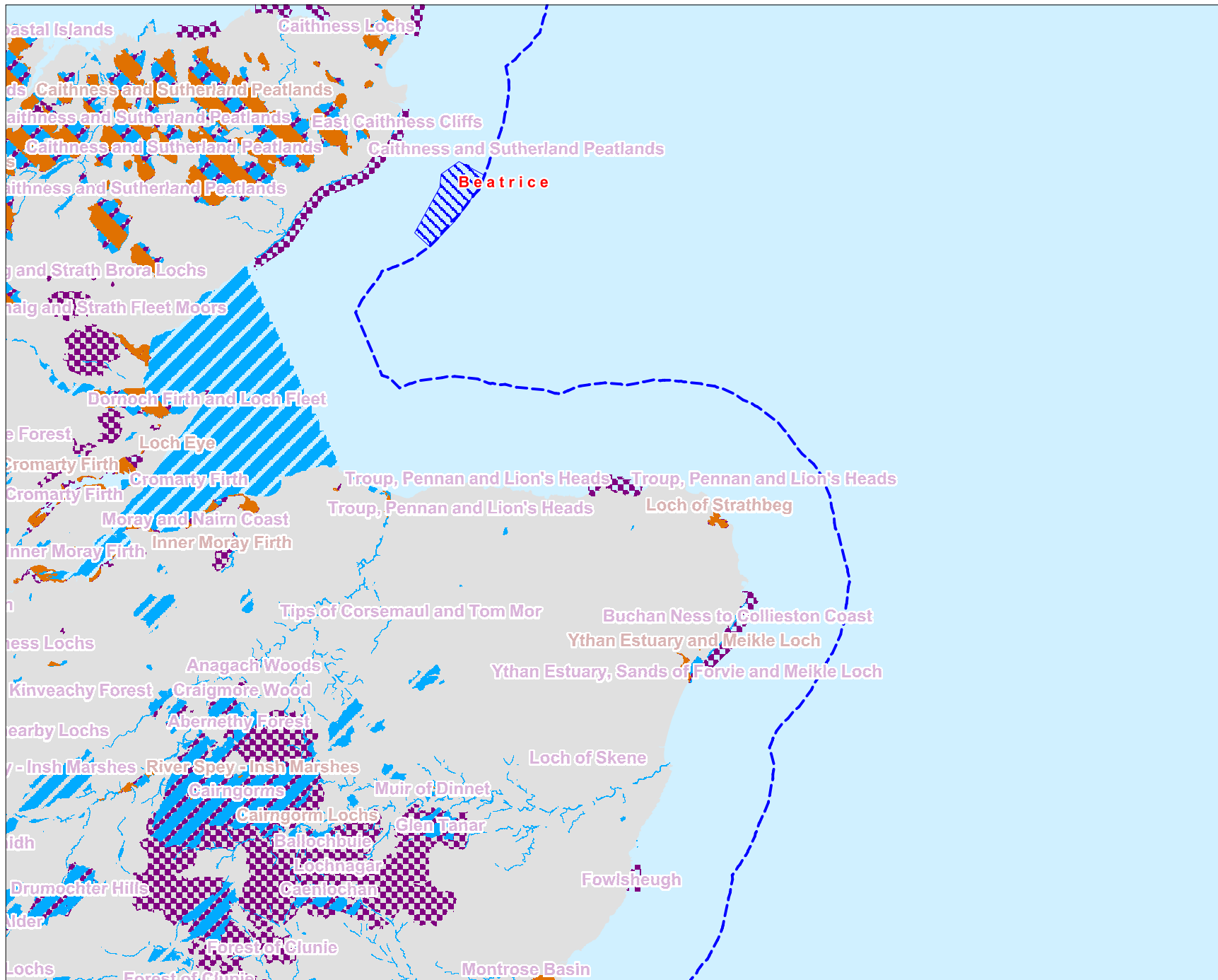
Authorised:

Legend:

-  Sites
-  12nm Region
-  Ramsar
-  SAC
-  SPA



Scale:
1:750,000









Project:
SEA of Offshore Energy

Map:
Appropriate Assessment

Prepared By:

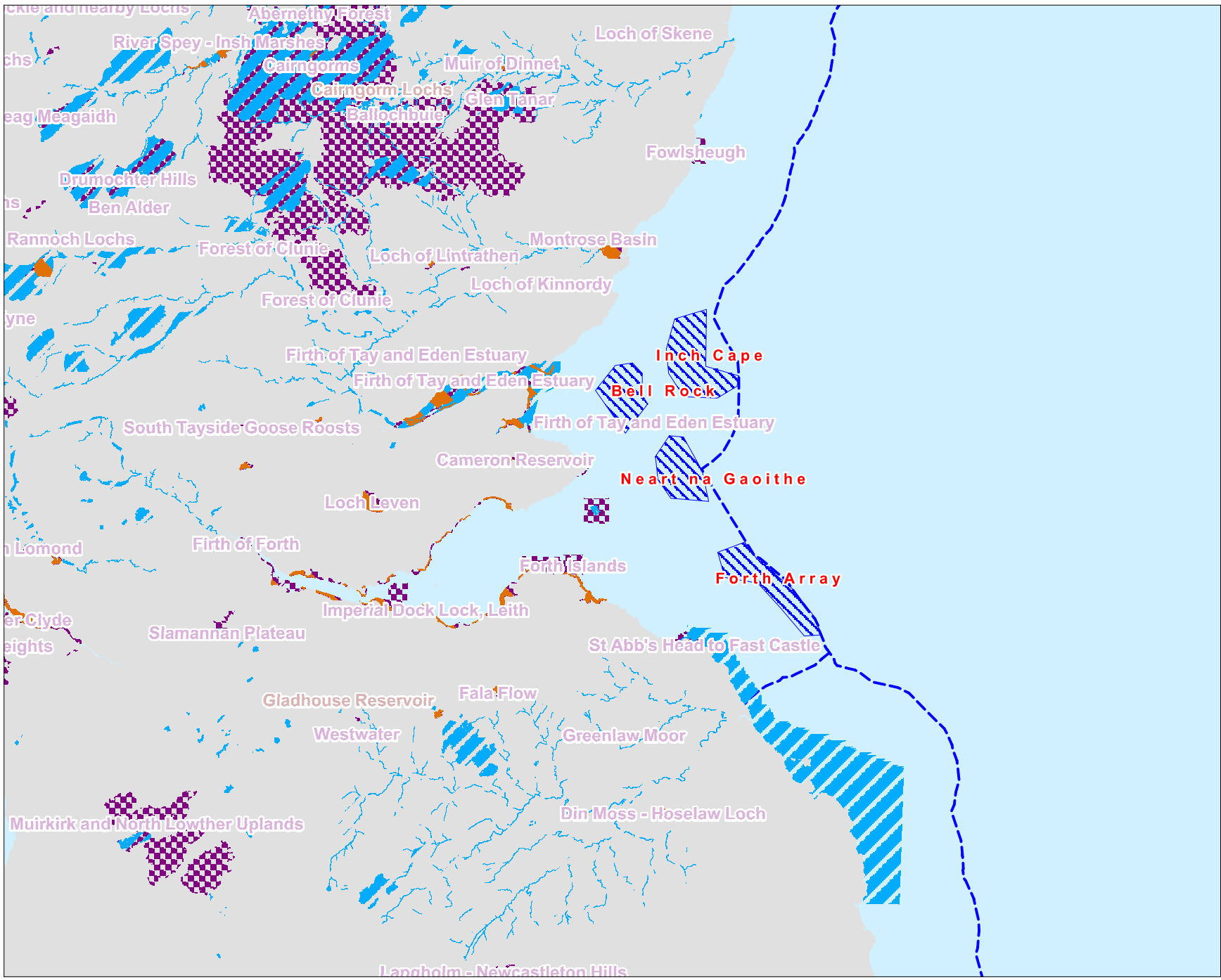
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Legend:

-  Sites
-  12nm
-  Region
-  Ramsar
-  SAC
-  SPA







Scale:
1:1,175,000



Project:
SEA of Offshore Energy

Map:
Appropriate Assessment

Prepared By:
Authorised:

- Legend:**
-  Sites
 -  12nm Region
 -  Ramsar
 -  SAC
 -  SPA

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Scale:
1:1,200,000







Project:
SEA of Offshore Energy

Map:
Appropriate Assessment

Prepared By:

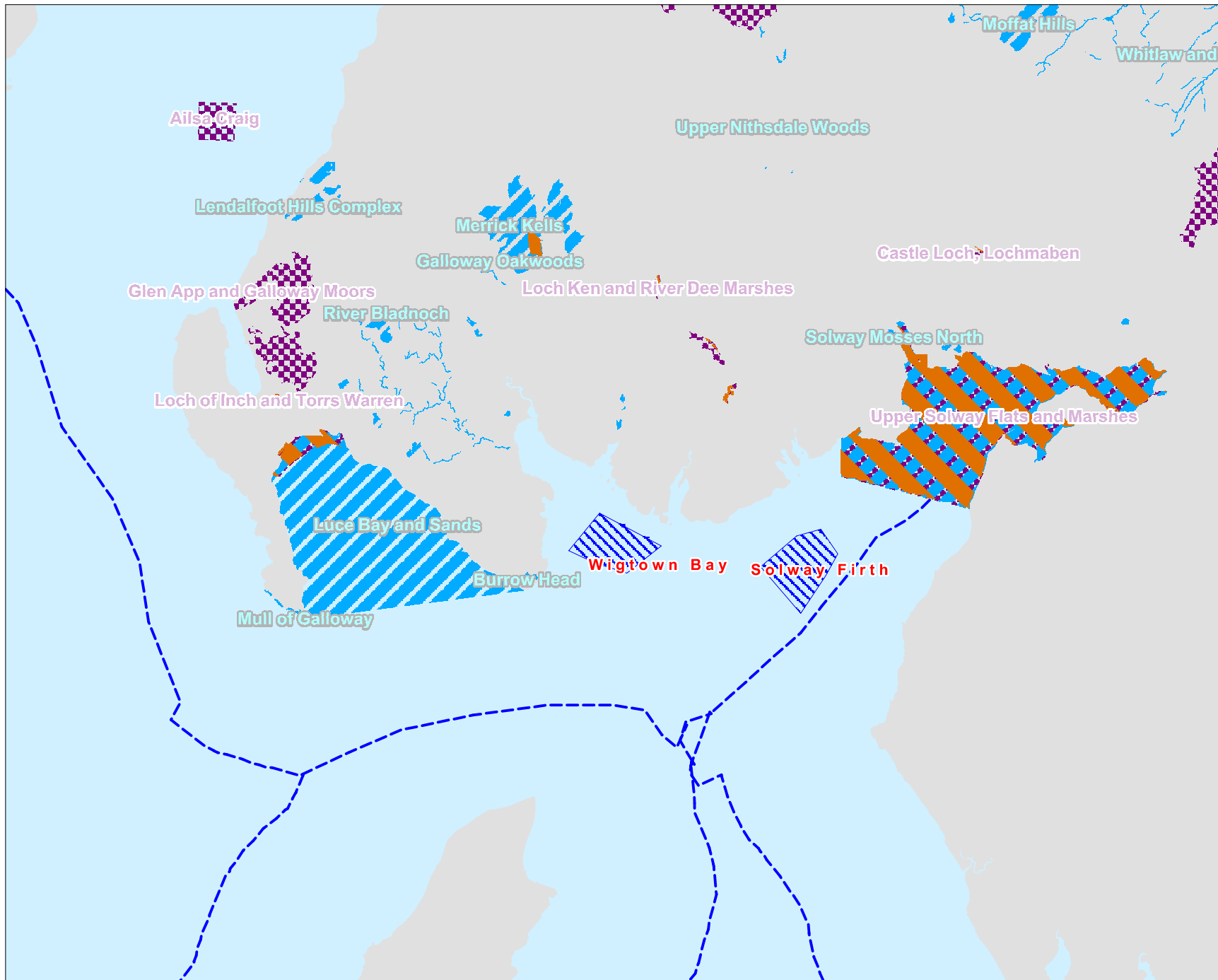
Authorised:

Legend:

-  Sites
-  12nm
-  Region
-  Ramsar
-  SAC
-  SPA



Scale:
1:750,000





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ISBN: 978-1-78045-056-8 (web only)

APS Group Scotland
DPPAS11359 (03/11)

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