Angus Council

From:	Stephanie G Porter
To:	MS Marine Renewables
Subject:	RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - OUR ref: 22/00861/S36
Date:	23 August 2023 11:38:26
Attachments:	image001.png

Dear Sir/Madam,

ELECTRICITY ACT 1989
MARINE (SCOTLAND) ACT 2010
MARINE AND COASTAL ACCESS ACT 2009

FURTHER INFORMATION FOR APPLICATION FOR CONSENT UNDER SECTION 36 TO CONSTRUCT AND OPERATE BERWICK BANK OFFSHORE WINDFARM, OFF THE COAST OF EAST LOTHIAN AND THE SCOTTISH BORDERS

I refer to the consultation request below relating to the additional information submitted to support the above application.

Having reviewed the recently submitted details in so far as potential impacts on Angus I would advise, Angus Council do not object to the proposal and have no further comments to add in response to the additional information.

Our previous comments regarding viewpoints, visual amenity, seascape and consideration of impacts upon Bell Rock Lighthouse, dated 13 March 2023, still pertain.

Yours sincerely,

Stephanie Porter | Team Leader – Development Standards | Planning & Sustainable Growth | Angus Council | Angus House | Orchardbank Business Park, Forfar, DD8 1AN | (01307 492378)

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Caledonia Offshore Wind Farm

DocuSign Envelope ID: 4837113A-7CB7-4E9E-9D67-6DBA4BFA8983

2 October 2023 Ref: UKCAL-CWF-CON-STK-LET-00001

Marine Scotland

Licensing Operations Team

1A South Victoria Quay

Edinburgh

EH6 6QQ

By email: ms.marinerenewables@gov.scot

Berwick Bank Offshore Wind Farm - Additional Information Application

Representation by Caledonia Offshore Wind Farm

Dear MD-LOT,

Thank you for the opportunity to comment on the Additional Information Application provided for Berwick Bank Offshore Wind Farm (Berwick Bank OWF). Caledonia Offshore Wind Farm (Caledonia OWF) wishes to provide the following comments.

Policy Framework

- The draft Energy Strategy and Just Transition Plan sets out the Scottish Government's vision for Scotland's energy system to 2045, with final strategy expected to be published in Summer 2024.
- As part of that Caledonia OWF supports an increased ambition for offshore wind deployment in Scotland by 2030, over and above the stated 11GW.
- Caledonia OWF also recommends setting a Scottish Government ambition for offshore wind deployment by 2045 to meet Scottish Government's net zero targets.
- The policy framework needs to be in place so that statutory stakeholders can make decisions in line with the stated strategy.
- A revision to Offshore Wind ambition that considers Scottish Offshore Wind and significant contribution to the objectives of a Just Transition, the Climate Emergency and Energy Security is a requirement to achieve those objectives.
- Any increase should be considerate of the affects on our natural capital and opportunities that create a net positive outcome within the policy framework.

Caledonia Offshore Wind Farm Ltd
5th Floor Atria One, 144 Morrison St.
EDINBURGH EH3 8EX

Registered Office c/o Shepherd and Wedderburn LLP, Octagon Point, 5 Cheapside, London EC2V 6AA United Kingdom
Company Number 13844888

DocuSign Envelope ID: 4837113A-7CB7-4E9E-9D67-6DBA4BFA8983

Alternatives and Additionality

- Caledonia OWF dispute Berwick Bank claims that ScotWind projects would not provide large-scale contribution to decarbonisation within the timescales for Berwick Bank.
- National Grid ESO 'Pathway to 2030 Holistic Network Design'[1] identifies a number of ScotWind projects that will provide low carbon electricity to the grid by 2030. Caledonia OWF is one of these projects.
- Caledonia OWF also challenge Berwick Bank assumption that 'many ScotWind projects will deploy more costly floating technology'. The Caledonia OWF scoping report[2], submitted in September 2022, confirmed that the majority of the project site is suitable for fixed foundations. Other ScotWind projects will also utilise fixed foundations within their project and intend to deliver green energy to the grid by 2030, these include West of Orkney (2.25GW) and Morven (1.5GW). This means the Caledonia and other projects offer a comparable route to delivering low-cost electricity to consumers.
- Given the experience of Ocean Winds, a developer, constructor and operator of offshore wind farm projects in Scotland, specifically the Moray Firth, we are confident Caledonia OWF can be delivered to these timescales and represents a credible alternative to support the need for climate change mitigation and security of energy supply.
- On this basis we disagree Berwick Bank claim that 'ScotWind is not an Alternative Solution'.

Yours Sincerely,

[Redacted]

Mark Baxter, Caledonia OWF Project Director.

[1] https://www.nationalgrideso.com/future-energy/pathway-2030-holistic-network-design
[2] https://marine.gov.scot/node/22949

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Company Number 13844888

Dundee City Council

From:	Alistair Hilton
To:	MS Marine Renewables
Subject:	RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Local Authorities - Response by 3 October 2023
Date:	12 September 2023 16:31:10
Attachments:	image001.png

Thank you for your email. I can advise that Dundee City Council has no comment on these documents.

Alistair Hilton
Principal Planning Officer (Planning & Economic Development) at City Development

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P 01382 433760

W www.dundeecity.gov.uk
A Dundee House, 50 North Lindsay Street, DUNDEE, DD1 1QE

Fife Council

From:	Martin Mcgroarty
To:	MS Marine Renewables
Cc:	Rebecca Bamlett; Rebecca Ross
Subject:	22/04310/CON - Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Local Authorities - Response by 3 October 2023
Date:	08 September 2023 16:36:52

FAO Rebecca Ross

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990

MARINE (SCOTLAND) ACT 2010
The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017

MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

Good afternoon Rebecca, thank you for your email.

Having examined the additional information provided in relation to this matter, I can confirm that Fife Council has no further comment to make on the matter and we have placed details of the new information submitted on the public portal online.

As ever, we expect the expert advice of NatureScot to be taken in these matters, and the east coast fishing fleet to have been fully consulted on all new proposals. We would also take this opportunity to remind the offshore wind operating companies that Fife is well placed in terms of site availability and skilled workforce to accommodate manufacturing, decommissioning and other renewables related engineering works.

Kind regards,
Martin

Martin McGroarty
Lead Professional (Minerals)
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Fife Council
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Forth Ports

From:	Carol Forman
To:	MS Marine Renewables
Cc:	Rebecca Bamlett; Emma Lees; Rebecca Ross
Subject:	RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - Response by 3 October 2023
Date:	18 August 2023 14:55:57
Attachments:	image001.png

Hi Becca
I can confirm Forth Ports has no comments on the works.

Kind regards.
Carol

Carol Forman | In-house Paralegal | LSS Accredited Paralegal | Forth Ports Limited
Head Office | 1 Prince of Wales Dock | Edinburgh | EH6 7DX
T: 0131 555 8721 | M:[Redacted] | https://forthports.co.uk

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The Scottish Government
Marine Scotland Licensing Operations Team
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9BB

30th November 2023

Dear Sir/Madam,

Berwick Bank Wind Farm Ltd Marine Licence Applications for Boreholes (00009941) and Offshore Transmission Infrastructure (Part 1 and Part 2) Firth of Forth 00010190/1; and application for consent under Section 36 of the Electricity Act 1989 for the construction and operation of the Berwick Bank Wind Farm (the 'Applications')

I refer to Clare Hennessey's submission to Marine Scotland of 21 February 2023 regarding the above matter (copy attached for ease of reference). Clare wrote in her capacity as Consents and Statutory Engagement Manager at EDF Energy Nuclear Generation Ltd (ENGL). Clare has, however, recently left ENGL and Gerald Eve, who are instructed on this by ENGL, have been asked to make the following additional submission on behalf of ENGL. We have no information as to when Marine Scotland intend to determine the application, but would be grateful if the matters below could be taken into consideration when the Berwick Bank Wind application is determined by Marine Scotland.

Background to Proposed Marine Licence Conditions
There is a past history of offshore kelp displacement during storms blocking Torness Nuclear Power Station (TOR) cooling water intakes and leading to a shutdown of the station. As per ENGL's response to Marine Scotland of 21 February 2023, ENGL considers that additional risk will arise should the installation of the BBW landfall infrastructure and subsea cables be permitted immediately to the north and north west of TOR (particularly during HDD seabed breakout and cable laying operations on the seabed). The BBW operations will in ENGL's view give rise to additional risks of kelp being dislodged, as well as additional sediment and seaweed disturbance. Predominant offshore currents are north west to south east, which means that there is a risk that the dislodged kelp will block the TOR cooling water intakes. In order to ensure that these important issues are addressed by BBW, we would respectfully suggest that the following draft Marine Licence Conditions be included in any Marine Licence/S36 consent.

Proposed Marine Licence Conditions

1. No processes or activities shall be carried out which would be a) incompatible with the nuclear safety arrangements or operations of Torness Power Station; or b) have an adverse effect on water quality at the intakes of the station.

Reason
To ensure that the development does not affect the operation of the power station in the interest of safety. (this wording was agreed by North Ayrshire in the attached permission for development by Peel, adjacent to Hunterston Nuclear Power Station – Item 3.2)

Gerald Eve LLP is a limited liability partnership registered in England and Wales (registered number OC339470 and registered office at One Fitzroy 6 Mortimer Street London W1T 3JJ). The term partner is used to refer to a member of Gerald Eve LLP, Newmark GE Services LLP or an employee or consultant with equivalent standing and qualifications. Gerald Eve LLP is regulated by RICS.

2. Prior to the commencement of the Relevant Offshore Works, BBW is to carry out an underwater survey and/or a drone survey to identify the nature and density of kelp within the proposed BBW Export Cable Corridor adjacent to the Skateraw Landfall which falls within the footprint of the Proposed Development.

Reason
To identify the nature and density of kelp likely to be disturbed by seabed breakouts of BBW HDD works and BBW seabed cable laying works.

3. On completion of the underwater survey and/or drone survey referred to in Condition 2 above, the results of the same shall be provided to Marine Scotland and offshore consultants of sufficient expertise in kelp management shall be appointed (with the agreement of EDF Energy Nuclear Generation Limited) to provide a written opinion as to whether the targeted harvesting of kelp within that area would be likely to reduce the risk of kelp displacement during the cable installation and construction period. The appointment shall make clear that the opinion is to be definitive as to whether a targeted kelp harvest is to be recommended.

Reason
To establish whether kelp management could reduce the risk to TOR of kelp disturbance as a result of BBW HDD seabed breakout and cable laying works.

4. In the event that the appointed consultants provide a written opinion (pursuant to Condition 3) recommending a targeted kelp harvest, then the Licensee shall within 2 months proceed to submit an application for a marine licence (which has been confirmed in writing by EDF Energy Nuclear Generation Limited as being satisfactory) to enable the Licensee to harvest the kelp within the Proposed BBW Export Cable Corridor adjacent to the Skateraw Landfall and which is within the extent of the proposed footprint of the Proposed Development.

Reason
To reduce the risk to TOR of kelp disturbance as a result of seabed breakout of BBW HDD and offshore cable laying works.

5. In the event that the written opinion referred to in Condition 3 recommends a targeted kelp harvest, the Licensee shall not commence the Offshore Works unless and until the requisite marine licence has been granted and the works to harvest the kelp have been undertaken in full.

Reason
To reduce the risk to TOR of kelp disturbance as a result of seabed breakout of BBW HDD and offshore cable laying works.

6. In the event that EDF Energy Nuclear Generation Limited's daily storm forecasting tools indicate that the risk of kelp and/or seaweed being ingested in significant amounts into TOR cooling water intakes has been identified as "Red Risk" or above, EDF Energy Nuclear Generation Limited is to notify the Licensee and the Licensee shall cease undertaking offshore HDD breakout and cable laying operations within the proposed Export Cable Corridor adjacent to the Skateraw Landfall and which is within the extent of the proposed footprint of the Proposed Development until the risk has fallen below Red Risk (unless EDF Energy Nuclear Generation Limited agrees in writing otherwise).

Reason
To reduce the increased risk to TOR of kelp disturbance/ingestion in TOR cooling water intakes as a result of seabed breakout of BBW HDD and offshore cable laying works.

Informative
TOR has access to a number of weather/sea state forecasting tools and a station procedure whereby these forecasts are checked daily and an alert is issued to Operations if the forecasts are adverse. ENGL would be prepared to alert BBW at the same time.
There are defined action levels which trigger different degrees of response and the above Condition would require that BBW ceases activities when TOR's 'Red Risk' action level is reached – which includes, for example, forecast wave heights of more than 2m.

Yours sincerely,

[Redacted]

Keith Norman
Partner

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Historic Environment
Scotland

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Our ref: PIC028-ECO-EIA-20231025-X-V0001-BerwickBankOpertnsComs

26 October 2023

Dear Rebecca Ross

Derogation Case – Colony Compensation, Inchcolm Island
Conservation of Habitats & Species Regulations (2017)
Berwick Bank Offshore Wind Farm
Additional Environmental Information

Thank you for extending the consultation deadline for the submission of our comments on the Additional Environmental Information submitted by the Applicant, SSE.

Historic Environment Scotland, as the statutory consultee has submitted formal comments to Marine Scotland (20 February 2023 and 2 October 2023) indicating that there is no objection to the Berwick Bank Wind Farm under their statutory remit for the EIA Regulations (The Electricity Works (environmental Impact Assessment) (Scotland) Regulations 2017). In HES's letter of 2 October it was indicated that HES would provide additional comments on the Inchcolm Derogation Case. **This letter and the accompanying Annex represents the views of the Operations Directorate of Historic Environment Scotland, under the Habitats Regulations (Conservation of Habitats & Species Regulations (2019)). The comments apply solely to the Berwick Bank Wind Farm Derogation Case; Colony Compensation Inchcolm and no other matters under consideration by Marine Scotland. This response is provided by HES as guardians and leaseholders of Inchcolm Abbey – a Property in Care**.

Historic Environment Scotland is primarily and statutorily established as the government's advisors on heritage matters in Scotland, both within privately owned land, HES Properties in Care and policy. HES also takes into account their statutory biodiversity duty, giving it due weight and consideration in managing their Properties in Care.

Historic Environment Scotland's Ecologist has been tasked with providing this formal response. It has however, been discussed and reviewed internally by all sections of the Operations Directorate including; the Director of Operations, the Regional Director (Central Region), District Managers for Central Region (Visitor & Communities, Works Manager and Architect), along with the Head of Technical Resources and the Monument Manager for Inchcolm.

The attached Annex provides extensive comments on the Applicant's submission and HES's reasoned views on the ecological and operational feasibility of the Applicant's proposals. The Annex also gives an opinion on what are seen as potential risks to the organisation, should the scheme receive permission. Some suggestions for reconsideration and recommended modifications to the Colony Compensation are also included in the Annex, should the determining body be minded to approve the proposal. This response does not alter the formal statutory

response of Historic Environment Scotland, as it purely deals with the Derogation Case and the likely impacts at Inchcolm island.

Historic Environment Scotland Operations Directorate's summary comments are provided below for ease of reference: -

Black Rat Eradication

- The black rat eradication and long-term rat-free maintenance is uncertain and maybe problematic on this island.
- The black rat's historic status has not been totally or adequately demonstrated, from documentary sources or beyond reasonable scientific doubt. Any decision on the use of eradiation should be placed within the context of black rat's conservation status.
- It is considered that without further monitoring and investigation of the impact of black rat on the seabird population dynamic on Inchcolm, eradication should not be considered as a primary compensation measure.
- Long-term (35 years) monitoring and maintenance of the island as rat-free is identified for stakeholders to take ownership of (HES and boat operators). This is not acceptable to HES.

Ecological Feasibility

- The Applicant, HES's Annex and the scientific evidence of local analysis indicates that other ecological factors, some of which are edaphic or demographic, also operate on the island. There is a high probability that these limit populations and or future colonisation of target species. These factors have not been adequately investigated or addressed.
- The geological configuration of the cliffs are considered structurally suboptimal and in combination with the location of Inchcolm; a significant distance from auk feeding resources, result in a considerably lower probability of meeting the compensation targets. These factors are outside the control of either Historic Environment Scotland or the Applicant.
- The Applicant's habitat based assessment and projected targets are considered overly ambitious for this location. Without the provision of significant additional interventions both ecologically and operationally, there is an extremely low probability of meeting these conservation objectives on Inchcolm for the 4 target species (puffin, razorbill, kittiwake & guillemot).
- Unintended negative nature conservation consequences on other seabird species are unpredictable. These have not been adequately investigated and appropriate mitigation for these likely impacts have not been presented.

Adaptive Management

- Adaptive mitigation is considered a misnomer in this instance. HES view is that this an inappropriate and uncertain mechanism to achieve the conservation targets.
- The proposed Annual Stakeholder meeting to negotiate on-going tasks is not acceptable without a Habitat & Seabird Management Plan with agreed clear budget streams and responsibility identified. This needs to be secured via legally binding agreements and DCO (Development Consent Orders) as any permission is awarded.

Operational Feasibility

- The Applicant acknowledges and the Annex demonstrates, that HES has no additional capacity to deal with either long-term biosecurity, tasks associated with nature conservation management of the seabird colony or increased visitor numbers associated with wildlife viewing.
- A Habitat & Seabird Management Plan with agreed clear budget streams and responsibility identified needs to be secured via legally binding agreements and DCO (Development Consent

Orders) as any permission is awarded. This is to ensure that Historic Environment Scotland does not take on an unacceptable operational load later in the wind farm's operational lifespan.

Proportionality

- There is also a wider question; whether this is the right location and approach to compensation (solely black rat eradication) and therefore if it is a proportionate response to the identified impacts of the scheme. This is particularly pertinent given the edaphic and demographic conditions that are present.
- Note: - A detailed analysis of the predicted impacts of the scheme are not within the scope of HES's response.

Legal Feasibility

- There is no evidence that the landowner of Inchcolm has been consulted and agreed to the Applicant's proposal

If you have any queries or wish to discuss these matters in more detail please do not hesitate to contact me.

Yours sincerely

Teresa Hughes MCIEEM – Ecologist, Environment Advisor | Operations Directorate

Cc
Ian Cains (consultant; Environment, Health and Safety Specialist, SSE) ian.cain@icenv.co.uk
Anja Schoene (Consents Manager – Berwick Bank Wind Farm, SSE) Anja.Schoene@sse.com
NatureScot Marine Sustainability Team
Key Historic Environment Scotland, Stakeholders

ANNEX – Historic Environment Scotland Operations Directorate consultation response, under the;
Conservation of Habitats & Species Regulations (Scotland) 2019, for
Berwick Bank Wind Farm Derogation Case of Colony Compensation Measures - Inchcolm

This Annex and the accompanying covering letter represents the views of the Operations Directorate of Historic Environment Scotland [HES], under the Habitats Regulations (Conservation of Habitats & Species Regulations (2019)). The comments apply solely to the Berwick Bank Wind Farm, Derogation Case; Colony Compensation for Inchcolm and not to any other matters relating to the wider consideration of Marine Scotland. This response is provided by HES as guardians and leaseholders of Inchcolm Abbey – a Property in Care.

Historic Environment Scotland is primarily and statutorily established as the government's advisors for the management of the heritage of Scotland, both within privately owned land and HES Properties in Care (PICs). On the Operational side, HES resources and future development of their Properties in Care is focused on the management and interpretation of Scotland's historic fabric – including historic landscape – for current as well as future generations and communities. HES also take into account their statutory biodiversity duty, giving it due weight and consideration in managing their PICs.

Historic Environment Scotland's Ecologist, Environment Advisor has been tasked with providing a formal response to Marine Scotland on the Berwick Bank Derogation Case; Colony Compensation Measures proposed for Inchcolm island Property in Care. This response has been considered internally by all sections of the Operational side of the organisation, including the Director of Operations, the Regional Director (Central Region), various District managers for Central Region (Visitor & Communities, Works Manager and Architect) along with the Head of Technical Resources and the Monument Manager for Inchcolm.

Documents reviewed to inform this consultation response include: -

- Marine Scotland HRA Screening Response (11.5.2021)
- Section 1 Derogation Case (December 2022)
- Section 2 Derogation Case; Implementation (December 2022) [IMP]
- Section 4 Derogation Case; Colony Compensatory Methods Evidence Report (December 2022) [CCME]
- Consultation Representations and Advice – from NatureScot, Natural England, RSPB, Scottish Wildlife Trust
- AEI02 Addendum to the Derogation Case – Section 5; Handa Feasibility Study (July 2023)
- AEI02 Addendum to the Derogation Case – Section 6; Inchcolm Feasibility Study (August 2023) [AEI Inchcolm]
- AEI02 Addendum to the Derogation Case – Section 3; Implementation Monitoring (August 2023) [AEI IMP]

Black rat eradication

The historic significance of the population of black rat has not been investigated fully to enable a satisfactory conclusion beyond reasonable doubt. HES also have concerns about the basis of the black rat eradication and the likelihood of the stated outcomes being achieved and sustained, in isolation from other ecological factors and implementation constraints.

As an initial premise, the presence of black rat at Inchcolm is a significant feature of the island's history and the story of its presence as an interpretation tool adds to the visitor experience. This part of the public's visits

should not be underestimated, particularly in regard to public perception and any response to eradication if it were to go ahead.

The Applicant claims that they consider that black rat only arrived on Inchcolm in the latter part of the 19th Century. This is based on a single documented observation in 1899[1]; that no rats were seen on Inchcolm, but there were abundant rabbit. It is well understood and accepted that ecological data returns are caveated; that the absence of a record or sighting, does not mean that a conclusion of absence of a species is valid. It is well known that black rat, brown rat and rabbit can coexist within the same ecological location as evidenced by contemporaneous work on Lundy (Lock 2006[2]).

It is well documented that black rat (ship rats) was considered to carry the bubonic plague (Black Death). It is of note that the Historic Environment Scotland Statement of Significance[3] indicates that Inchcolm was used during such periods to quarantine ships from Europe and Scandinavia. There are 4 documented cases of quarantining of ships on Inchcolm between 1564 – 1594, which coincides with the resurgence of a more virulent form of the plague across Europe in the late 1500's[4]. Occupation of Inchcolm has a well-documented history before this period, with the first reference to a community (Augustinian monks) on the island from the first half of the 12th Century. Although there are no clear references to the presence of rats – black or otherwise – during the earlier periods or as a consequence of the quarantines, it is just as likely that rats were present earlier than the reference provided by the Applicant. The records of Scottish medieval colonisation of black rat (AEI Inchcolm, Appendix C ∞ 1.0) seem to preclude presence when the island was first inhabited, but there is nothing to suggest in the Applicant's analysis that black rat was not present during the periods of plague and the use of the site for quarantine, or at other times.

The Applicant's DNA research and analysis of black rat population genetics at Inchcolm appears to inconclusive, in terms of association/origination with other populations. It indicates with caveats that the black rat population on Inchcolm is a new genotype, not recorded elsewhere in the world (AEI Inchcolm Appendix C Sctn 3). No further investigation appears to have been progressed by SSE (*pers comm* Ian Cain, SSE 3.10.23 site visit with HES).

Without further significant historic research – and potentially lengthy DNA investigation – **the only conclusion that can stated with any degree of confidence is that the timing of the establishment of a black rat population on Inchcolm is unknown. However, there is no real compelling evidence to substantiate the Applicant's statement regarding the late arrival of black rat to the island and its consequent dismissal as of historic significance or global relevance.**

On Inchcolm the Applicant has undertaken a single study period (2022) to estimate the population of the island's black rat. The study results are interpreted in several manners by the Applicant and they suggest that the population numbers could range either from low, moderate or to high (∞ 64 & 65, CMME). Moreover, it was not possible during the Applicant's study to differentiate the black rat stomach contents to determine if their diet could be attributed to either seabirds or seal flesh or another high trophic marine species (AEI Inchcolm, Appendix A ∞ 3.4.3).

HES do conduct rat control with baiting stations in a small number of locations close to the visitor facilities & staff summer residence. This is undertaken as a matter of human welfare & hygiene rather than for seabird

[1] AEI Inchcolm Feasibility Study – Annex C section 3.0 quoting Dickinson 1899, which is unavailable via the link.

[2] 'Eradication of brown rats and black rats to restore seabird populations on Lundy' Lock, J. National Trust, Conservation Evidence (2006) 3, 111 - 113

[3] https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationid=9d5595b8-f4a3-4036-8b6a-a78c00dee98a

[4] Bubonic plague: the first pandemic | Science Museum

management. Given its close focus this practice is unlikely to influence/control the population dynamics of black rat significantly.

From the evidence within the submission, it is not possible to draw any conclusions beyond reasonable scientific doubt about the size of the black rat population on Inchcolm and the impact it has on the seabird populations of the island.

Black rat is a Biodiversity Action Plan [BAP] Species in Scotland, despite it being considered a non-native species. The UK population of black rat is low due to both island eradications and by failure to thrive in the presence of the larger and more competitive ubiquitous brown rat. The Applicant points to under-recording and mistaken identification to cast doubt on the conservation status of the species, but acknowledges there are very few known extant populations in the UK. This type of uncertainty regarding record returns could be applied to any species' population monitoring scheme, given that it is rarely possible to undertake a systematic comprehensive analysis of a species' status. However, the National Biodiversity Network (NBN) is the recognised national database for species submission and is accepted as a primary data source for ecological work[5]. A comparison of the two rat species' records gives a simple indication of their relative population sizes in the UK. The NBN[6] does not provide analysis of population trends for black rat in its species account, but contains a very low number of record submissions (550) for black rat, of which the majority were submitted via the 1997 Mammal Atlas. The submission of verified records since that time is exceptionally low. The NBN however, contains an exceedingly good number of records of brown rat (72,700). Additionally, for the Applicant to say that the black rat is globally distributed, so therefore of limited conservation relevance, seeks to undermine its conservation importance in the UK and its identification as a BAP species in Scotland. Many species with good global or continental population are legally protected in the UK or receive recognition as species of conservation concern (BAP, RSPB red list etc). **Statements regarding black rat conservation status should be considered within the round, alongside the wider concerns of the efficacy of black rat eradication on Inchcolm.**

It is acknowledged within ecological practice that the absence of rat (or other) predators can *assist* in the maintenance/improvement in seabird populations alongside other conservation measures. However, the Applicant themselves admit to a high degree of uncertainty in black rat eradication reaching the conservation objectives for the Inchcolm Derogation Case (∞ 95 CCME). From examination of the Applicant's submission's Table 2.4 (CCME) it can be concluded that 40% of the reported example eradication sites failed/reinvaded (excludes the 2 ongoing sites).
Additionally and more importantly, 75% (9 of 12 sites) of the sites listed in Table 2.4 (CCME), are managed by wildlife organisations specifically for the seabird colonies these nature reserves support. These organisations have as their stated primary objective; nature conservation and the majority of their resources (site management plans, funding, and staffing) will be aimed at wildlife priorities. It is conjectured therefore, that it is not at all possible to confidently and beyond reasonable scientific doubt conclude that the maintenance/improvements to seabird populations on these sites were as a direct result solely of rat predator eradication.

[5] Chartered Institute for Ecology & Environmental Management guidelines for EcIA
[6] National Biodiversity Network species account black rat.
https://species.nbnatlas.org/species/NHMSYS0000080213#records

Maintenance of biosecurity is seen as challenging for Inchcolm (∞ 57 CCME) due to visitor numbers and the risk of recolonisation being considered high (∞85 CMME). The Applicant states: -

> *"The risk of recolonisation can be minimised through regular surveillance, although the time and effort required to achieve and maintain rodent free status at Inchcolm should not be underestimated."*

If this measure is taken forward either alone or in conjunction with other measures HES's view is: -

- It appears that responsibilities will fall in part to HES staff; in years 3 to 5 post eradication with detailed sampling every 4 weeks (cf ∞262/265 IMP 2022) during the monitoring phase to confirm initial rat-free status. It is important to note that during this period – when there may be hard to detect low numbers of rat still present – it is not a scientific or valid method to consider the use of a proxy such as a population recovery/prospecting of seabirds, as a sign of successful eradication (Sectn 7.8 AEI Inchcolm Feasibility). This is especially important considering that the responsibility for maintaining the rat-free status will fall to others (eg HES and the boat operators).
- Over the long-term lifespan of the development (remaining 30 – 32 years) a Biosecurity Implementation Plan (∞ 240, IMP) will be developed. The Applicant's stated intention is that engagement with stakeholders will enable these groups "*to take ownership of keeping the Inchcolm rat-free*". It appears, therefore, that the BIP will be the responsibility of HES to monitor, oversee and initiate the recall of specialist contractors should an incursion of rats (black or brown) occur (cf BIP process at Sectn 8.2 AEI Inchcolm). **This approach is <u>not</u> acceptable to HES and would require significant diversion of staff resources.**
- **Should the scheme receive permission and eradication of black rat is taken forward, HES require significant security via the DCO that there is a clear funding mechanism and staff resource in place to service the delivery of the long-term monitoring and the Biosecurity Implementation Plan.**
- There is no understanding or survey of the wintering seabird populations that may utilise Inchcolm. No additional studies have been undertaken by the Applicant to consider if there is a real threat of incidental poisoning of wintering birds or other resident birds/mammals during the winter eradication periods. Statements regarding the low likelihood of unintentional targeting cannot be justified without this (Table 3, Sctn 7.1.3, AEI Inchcolm).
- A Communication & Engagement Strategy is proposed during the rat eradication phase, but it appears it will be operated by external agencies (∞ 220 – 224 IMP). **HES recommends that the delivery of the Communication & Engagement Strategy is co-ordinated intimately and internally with HES staff in-house at least for the 5-year eradication program**. Communication sits across many strands and at different organisational levels within HES; from site-based comms/interpretation, corporate positioning, social media, complaints and FoI etc. If this role is left to an external body, it is highly probable that information will fall through the gaps and long-term maintenance of a coherent approach will be risky.
- The Applicant identifies (∞218, IMP) that the techniques used for the rat eradication will not impact heritage features, so that Schedule Monument Consenting (SMC) will be minimised. It should be noted that designated Scheduling covers the areas between the above ground visible parts of the monument and all below ground archaeological features. All activities which break ground therefore require an SMC application. Items within the Applicant's proposal that will be subject to consideration via an SMC include: -
  - Installation of baited traps where they need to be dug into the ground for eradication or other H&S purposes
  - Installation of anchor points for rope access
  - Erection of fences or signage with posts – even if temporary

  Other works that are likely to require SMC consent: -
  - Use of artificial nest boxes if buried for burrowing/boulder field nesting birds
  - Painting of the cliffs to mimic guano streaks

- Tree planting, grass reseeding scarification, grass management where soil and turves might be loosened or removed.

Conclusion Black rat eradication

The lack of evidence regarding the impact that black rat has on Inchcolm's seabird populations, the uncertainty of eradication success and the acknowledged difficulties of maintaining long-term (35 year) rat-free status, should be placed against the Scottish conservation status of the black rat species and its contribution to the historic interpretation of the heritage visitor venue. As discussed below, there are also questions regarding ecological and operational feasibility alongside a proportionality question to be considered.

In terms of the use of black rat eradication in isolation, it is HES's view that there are considerable disbenefits both in historic terms and the uncertainty of ecological feasibility. More importantly there is exceedingly unclear lines of responsibility and resource implications for Historic Environment Scotland as managers of the island.

It is HES's view that if black rat eradication is to be considered and undertaken it should form part of a wider scheme and should be a lower priority, until monitoring can demonstrate its inclusion alongside other measures that could be implemented.

Ecological Feasibility

In the HES Environmental Advisor's ecological opinion the risk of failing to meet the conservation objectives of the Derogation Case of Colony Compensation on Inchcolm are exceedingly high. The primary reason for this is that the Applicant has an over reliance on the rat eradication scheme. They have paid scant regard to the other ecological limiting factors on Inchcolm itself, presenting a theoretical and over ambitious habitat assessment of the carrying capacity and restorability of target seabird populations (kittiwake, guillemot, puffin, and razorbill).

In considering the ecological feasibility of target species nesting the Applicant states (quotes from ∞77 ∞ 118, CCME): -

> "[∞77] *The habitat assessments do not take into account predation pressures from large gulls, and competition with other species for breeding space, or other factors such as human disturbance"……* [∞ 118]……"*it is acknowledged that many factors (including predation pressure from large gulls, and competition with other species for breeding space, or other factors such as human disturbance) may impact on recovery, and as such there* ***is uncertainty associated with whether the conservation targets can be achieved***."

Emphasis added

As a result, the only compelling conclusion is that the Applicant's preliminary conservation targets (Table 2.5 CMME), that have been projected from the habitat assessments, are over ambitious and not founded on a realistic investigation of either the ecological conditions of Inchcolm or the operational constraints that are present. It is clear that even the Applicant is of the view that **other ecological factors contribute to limiting seabird populations on this site. and these should be investigated and addressed appropriately in a redesigned Colony Compensation project for Inchcolm**. The population constraints and HES's concerns about the calculation of the targets are in summary: -

- Continued predation from the large gull colony

  The Inchcolm gull colony currently regularly supports more than 3,500prs of herring gull and lesser black-backed gull. Investigation of gull free areas, gull predation containment features have not been considered. It is important to note that both gull species are also qualifying features of the adjacent

SPAs[7]. Substantive negative impacts to these gull populations should not result from works to compensate for the target species associated with the development. However, the matter should not be dismissed and it should be considered more fully as a population constraint on the target species.
It is informally considered that the island is at carrying capacity for the gull populations. Consideration of the historic figures for the island appear to support this conclusion (see Table below collated from R. Morris 2003/Firth of Forth Heritage Group data).

	1974	1987 (NCC)	1994 (SNH)	2023 (FFHG)
Lesser black-backed gull	≈ 10prs	730prs	1,669prs	1,539prs[8]
Herring gull	200-300prs	1,040prs	1,615prs Comment that numbers appear to have stabilised	1,684prs

However, the assertion by the Applicant (∞235, IMP) that gull numbers are unlikely to alter following rat eradication is considered overly simplistic. This conclusion could only be the case if colony space remained the only population limiting factor. However, the relaxation of rat predation on eggs and young chicks may result in increased productivity in the gull population, requiring more provisioning of food to a greater number of hatched and surviving gull chicks. The island's other seabird populations will be one of the sources of food for this increased need, as is likely the case now.
The Applicant indicates (Sectn 3.4.3 AEI Inchcolm) that the majority of the rats trapped in their 2022 study showed signs of tail damage which could be attributable to gull attack and/or caused by other rats. Therefore, it is clear that the rats do try to forage within the gull colony. Rats were detected during the study in close proximity to the existing gull breeding areas (figure 2.2 CMME).
The Applicant discusses (Sctn 7.2, CMME) both the theoretical basis of predation by gulls and the fact that smaller gull species (herring gull, lesser black-backed & black headed gulls) operate kleptoparasitism of auk species (puffin, razorbill and guillemot); when auks return to the nest with prey items. The Applicant concludes that despite the balance of the literature, there is insufficient information regarding the Inchcolm colony to draw any conclusions about the effect of the combined gull colony's impact on the target species (∞ 437, CMME). The Applicant does not place the size of the Inchcolm gull colony (Table above) in relation to the size of island, as compared to the islands that are quoted which support gull colonies alongside good seabird populations (eg Frida and Isle of May). Without a due comparison and further study as the Applicant indicates, it is not possible to conclude that gull predation does not act as a population constraint to seabirds on Inchcolm.
The Applicant goes on to dismiss predator diversionary feeding as an unacceptable management option due to a general reluctance (∞ 56 & 444, CMME). However, the Applicant does not consider any other methods, such as selective predator control/gull free areas, even though they acknowledge that such

[7] Firth of Forth SPA and the Outer Firth of Forth & St Andrews Bay Complex SPA
[8] Figures in preceding years since 1994 have been a similar order and can be found in local bird recording reports. http://www.forthseabirdgroup.org.uk/pages/islands.htm

methods are operated on Isle of May (2019)[9] as part of an overall strategy of seabird colony management.

Should habitat management be undertaken this may also serve to increase habitat availability for gull nesting. As an already abundant species, which are aggressively territorial it is highly probable that gulls would be the likely species to occupy newly created habitat resulting from habitat management.

It is our opinion that even if gull numbers were to remain static the impacts of the current gull predation on other seabirds cannot be discounted and that any inadvertent increase in gull productivity or breeding area will likely increase this impact on the key target species.

The large gull colony (herring gull & Lesser black-back) on Inchcolm and its predation impact has not been thoroughly or scientifically investigated and should be considered fully, before its management is discounted (∞ 56). Such measures could play a part alongside a suite of other seabird colony management measures.

- Other predators There has been no investigation of other existing/potential predators on the island or how they might be managed. The Applicant does not provide support by survey or data search for their conclusion that no other predators are evident (∞ 235 IMP). It is acknowledged that peregrine falcon nest on the cliffs, but there is no clear understanding of the impact that this highly specialist predator of birds has on the island's seabird populations. Additionally, fox and mink have been recorded within the vicinity of the island[10]. An otter family was observed on Inchcolm during the 2023 season (Monument Manager *pers comm*), as well as historic records. **There are no contingencies in place within the Applicant's Colony Compensation for monitoring or managing other predators that do or may occur on the island for the life-time of the wind farm operation should it receive permission**.
- Disturbance by human visitors The number of visitors (20,000 – 25,000 visitors/annum[11]) on Inchcolm is an order of magnitude greater than on any of the other islands that have been included within the Applicant's analysis (see below Operations Table). When assessed as visitors per annum as a proportion of site size, the extent of the task of visitor management is put into stark relief.

  Islands managed specifically for wildlife almost exclusively prohibit dogs on their nature reserves. Visitors to Inchcolm are allowed to bring dogs onto the island. Although they are requested that dogs be kept on a lead, this is often difficult to supervise and the presence of dogs will significantly increase the levels of visitor disturbance to breeding birds in general. The disturbance impacts from human activities, including dog walking, is well documented within the literature. It is a frequent and ongoing discussion between site managers and is a regular topic for professional development[12].

  The operational impact of visitor management is discussed more fully below. It is of note that HES has no plans or policy objectives to restrict visitor numbers or their dogs at Inchcolm.
- Resource partitioning of nesting habitat is a potential factor, recognised by the Applicant, that may limit recovery or colonisation by kittiwake. Scientific evidence demonstrates that kittiwake vs fulmar competition, occurs with the larger fulmar being the usurping species (Natural England [13]). The

[9] Isle of May Annual Report 2021 https://www.nature.scot/doc/isle-may-nnr-annual-report-2021#Gull+management

[10] NBN Atlas Scotland data search cantered on Inchcolm with a 500m radius. Local data source Fife Nature Records Centre

[11] HES visitor number figures published internally on PICAMS intranet dashboard. Available for the period 2011 - 2023

[12] RSPB, National Trust & Natural England Conference, 21 February 2023, Recreational Disturbance https://www.projectlote.life/2023-disturbance-webinar.html#:~:text=2023%20Recreational%20Disturbance%20Conference&text=On%2021st%20February%202023%2C%20the,managing%20recreation%20and%20recreational%20disturbance.

[13] Natural England RP2964, 2023, Definition of Favourable Conservation Status for kittiwake https://publications.naturalengland.org.uk/file/5346241970700288#:~:text=Summary%20definition%20of%20favourable%20conservation%20status,-

Applicant quotes papers and asserts that kittiwake has a preference for substantial ledges (>300mm). In actual fact, the scientific community recognises the opposite to be the case, with a well-documented preference for the smaller kittiwake to occupy narrower ledges on steep cliffs (JNCC[14]), where they create a nest to contain their eggs. By contrast fulmar tend of occupy wider 'earthy' ledges where a small scrape is formed to enclose the eggs and they are known to be more catholic in their nesting habitat choices (JNCC[15]). It is of note that Inchcolm cliffs are not high and are considerably grassier/more vegetated than the other Forth islands which support large colonies of kittiwake (eg the "towering cliffs"[16] on the Isle of May) or even the cliffs/structures at Dunbar.

The effect of the interspecific competition and the presence edaphic factors (cliff geology) contributing to sub-optimal habitat structure are both considered to be contributory to limiting kittiwake population.

- Inchcolm's position in the Firth of Forth and seabird foraging range Some observers have considered one of the ecologically constraining features on auk populations on Inchcolm, is not only suboptimal breeding habitat, but primarily the position of the island so far up the Forth and consequently it being a considerable distance from the feeding grounds of the auk species (puffin, razorbill and guillemot). The prey items of these species are pelagic young fish – sand eels & clupeid species (sprat & young herring etc).

  For puffin it is known that small sand eel make up a significant component of its food source[17], and that they generally feed within 10km of the breeding colony[18]. Guillemot have a similar preference for sand eel (JNCC[19]), but have also been shown to take a high proportion of clupeid prey items on the Isle of May colonies[20].

  The ecology and distribution of both the sand eel[21] and clupeidae[22] shows a distinct seaward continental shelf distribution, which are some distance east from Inchcolm (>60km, see figures below) and outside the narrow reaches of the Forth. Auks and other seabirds on Inchcolm that rely on these prey items will have an additional 100km plus feeding trip to provision their chicks. The Isle of May, which holds some of the largest auk seabird colonies in the local region[23], is some 50km from Inchcolm and conseeuently considerably nearer to the foraging resource. Other islands with good auk populations also include Fidra (>30km from Inchcolm) and Inchkeith (>10km from Inchcolm). In balancing energy budgets in provisioning chick growth, other islands within the Firth of Forth are in a considerably more optimal geographical location.

Kittiwake%20Rissa%20tridactyla&text=It%20can%20be%20found%20throughout,of%20kittiwakes%20breeding%20in%20England.

[14] https://jncc.gov.uk/our-work/black-legged-kittiwake-rissa-tridactyla/

[15] https://jncc.gov.uk/our-work/northern-fulmar-fulmarus-glacialis/

[16] Numerous references from the tour boat companies, Visit Scotland and NatureScot

[17] JNCC puffin fact sheet https://jncc.gov.uk/our-work/atlantic-puffin-fratercula-arctica/#uk-phenology-diet-survival-rates

[18] http://datazone.birdlife.org/species/factsheet/atlantic-puffin-fratercula-arctica/text

[19] JNCC Guillemot fact sheet https://jncc.gov.uk/our-work/guillemot-uria-aalge/#uk-phenology-diet-survival-rates

[20] https://www.seawatchfoundation.org.uk/wp-content/uploads/2016/07/Anderson-et-al-Ibis-2013-Guillemot-food.pdf figure 1

[21] Jensen et al 2011 https://academic.oup.com/icesjms/article/68/1/43/631084?login=true figure 1 sand eel foraging grounds

[22] Frost & Diele 2022 https://link.springer.com/article/10.1007/s11160-022-09703-0 figure 3 herring reproduction, spawning grounds and larval occurrences

[23] http://www.forthseabirdgroup.org.uk/pages/wcount-tables.htm Summary annual seabird counts by island for Firth of Forth Islands

It is of particular note that guillemot is not documented as a confirmed breeding species on Inchcolm in the well researched 2003 local guide[24]. Since 2003 there have only been very low numbers observed and it is probable that the highly gregarious guillemot are still not present on Inchcolm as a breeding species. No evidence has been presented with any degree of confidence that guillemot can colonise Inchcolm. Even if sand eel fisheries were to be restricted – as the Applicant proposes – Inchcolm would still be considered a suboptimal distance from auk feeding areas.

The demography of food supply and the location of Inchcolm within the Firth of Forth is likely to be a significant contributory factor restricting increases in population numbers or the low probability of colonisation of the target species (eg guillemot).

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[24] Ron Morris 2003, Wildlife of Inchcolm

Figure Showing (red dots) position of some Firth of Forth Islands. West to east Inchcolm, Fidra, Bass Rock and Isle of May

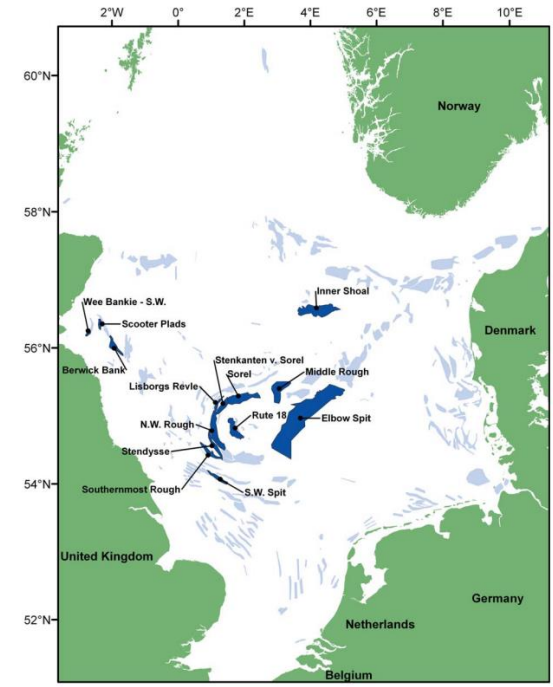
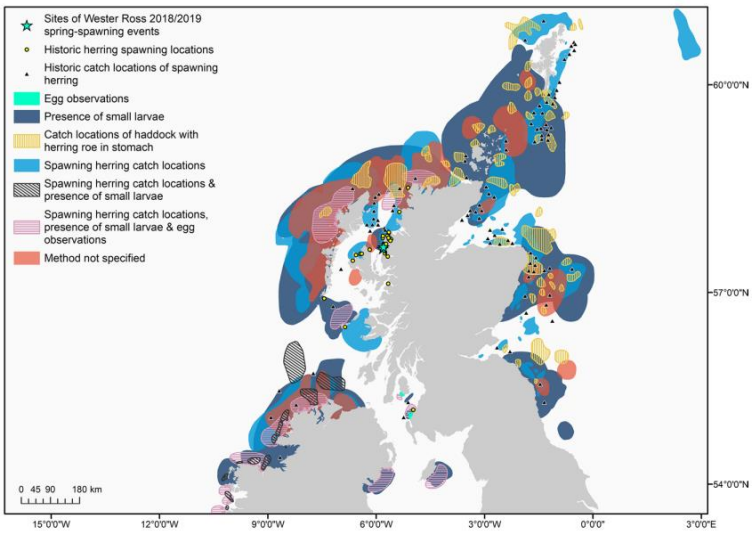


Figure 1. Sandeel habitat areas (areas with potentially high density of non-buried sandeel) and the locations of the fishing grounds mentioned in text.



Above Left: From Jensen et al 2011. (Inchcolm within the Firth of Forth is west off map at 56°N)
Above Right: Spatial data on herring reproduction, spawning grounds and larval occurrences for ICES areas IV, VI and VII. Taken from Frost & Diele 2022 Fig 3

- Habitat assessment and conditions for seabird populations Habitat management has not been proposed with any degree of security or seriousness. Of the other island sites analysed within the Applicant's submission, 75% of the examples occur on sites where the managing organisations have wildlife conservation as a primary remit (cf Table 2.4 CCME and see Table below). The Applicant seemingly appears to consider that good conservation practice for seabirds only includes "*tackle*[ing] *minor issues that are routine colony management, and which are likely to improve seabird breeding success*" (∞88

CMME). This dismissive statement by the Applicant, significantly underestimates and detracts from the time and resources applied by nature conservation organisations to manage seabird colonies, such as the Isle of May NNR.

The Habitat Assessment (Appendix B, AEI Inchcolm) provides the foundation for the Applicant's production of the preliminary conservation targets for the compensation's target species. **There is concern that the use of the habitat assessment means that these targets are over ambitious for a number of reasons: -**

- Table 2.2 (CMME) summarises this work and the Applicant elsewhere clearly highlights the suboptimal habitat conditions;

  "*Dense grassy vegetation may restrict access to some parts of the bank*"

  [multiple references in Table 3 App B, AEI Inchcolm].
- This statement could also be applied to access to rock crevices in the boulder fields and some ledges on the cliffs, as evidenced also by consideration of the photographs in Appendix B (AEI Inchcolm) and the extent of both coarse unmanaged grassland and scrub. It is HES's view that habitat condition is a significant constraint and lowers the assessments of all good areas (Area B, C, D and F) to moderate or in some cases poor.
- The photos (pages 19 – 31 of Appendix B AEI Inchcolm), which identify the suitable additional locations for nesting sites, overlaps suitable habitat for kittiwake (red lines) and that of guillemot/razorbill (purple). This is particularly apparent in the 'good' habitats in Areas B and Area E, but also in the 'poor' habitat of Area A. Therefore, it is not clear whether this overlap results in double counting when considering the length of available habitat resource for these species. Consequently, there may be an additional technical overestimate of the carrying capacity of these areas that could result in in increasing the already over ambitious targets for the species. Without further explanation it is HES's views that this element of the habitat assessment is flawed.

Habitat management is only included as part of an Adaptive Management option (see discussion below). **Some form of ongoing habitat management is essential to have any realistic certainty of approaching the conservation objectives for the target species.**

- Unintended ecological consequences could include increase in the gull colony size, increasing the predation factor (see discussion above).

  Impacts may occur on other species particularly eider breeding, if habitat management were to be adopted to reduce the undergrowth and scrub around the boulder fields which are currently obscured. Opening out the vegetation would leave the creches of young eider chicks vulnerable to predation when females are moving them to and from the cover of the nest sites to the shore to feed. While breeding eider is not an SPA qualifying species for either of the adjacent SPAs[25], it is known that the local breeding population will also contribute to the overwintering numbers[26]. Overwintering eider is an SPA conservation feature. The breeding eider population on Inchcolm is significant in the local region (Firth of Forth Islands) and the island regularly supports some of the highest annual counts (R Morris *pers comm* and analysis[27]).

[25] Firth of Forth SPA and the Outer Firth of Forth & St Andrews Bay Complex SPA

[26] Conservation & Management Advice for OFFABC SPA https://apps.snh.gov.uk/sitelink-api/v1/sites/10478/documents/59

[27] http://www.forthseabirdgroup.org.uk/pages/wcount-tables.htm Annual tables

Conclusion Ecological Feasibility

It is clear from the Applicant's own submission and the discussion above, that there are a number of other factors which limit seabird populations on Inchcolm, aside from just solely the unknown predation impact from black rat. Some factors are edaphic (geology of cliffs) or demographic (position in relation to food sources). These factors are outwith the Applicant's control, but may also contribute to poor outcomes for the target compensation species. It is HES's Ecologist's opinion that for a Colony Compensation scheme to be effective on Inchcolm, habitat management and visitor management are essential and should not be left to be triggered by Adaptive Management at some unspecified later stage. The consideration of predation monitoring and management of impacts from the gull colony should also be undertaken.

Adaptive Management

As indicated above a number of additional (Adaptive) management options should not be left to later agreement via the proposed Annual Reporting process. A comprehensive Management Plan should be implemented from the outset. That aside, HES has significant reservations about the process of Adaptive Management.

The submission includes an Applicant commitment to produce an Evaluation and Monitoring Plan (IMP ∞ 251) to identify and trigger Adaptive Management options that lists; plastic removal from beaches, tree mallow control, potential pre-season soil management.

It is extremely concerning to read (∞229 Sctn Operational Plan, IMP) that "*horticultural services*" will be commissioned, rather than the use/close direction of experienced nature conservation managers who understand the principles of consistent and long-term application of good habitat management for the target species concerned.

As discussed above suboptimal habitats are present at Inchcolm, which require management to optimise the site for target species: -

- In addition to tree mallow other invasive/undesirable species occur across parts of the island including extensive stands of sea buckthorn, cotoneaster, and snowberry.
- The grassland habitats are unmanaged and largely support coarse thatchy grassland, which is not conducive or optimum for burrowing species. Vegetation condition is highlighted as a constraint feature in all of the supposed 'good' quality habitat (Table 2.2 IMP and Table 3 Annex B of AEI Inchcolm) and is clearly evident from some of the photos in Applicant's Annex B's preceding pages (see discussion above).
- Native elder scrub occurs frequently across the island and thistle/soil erosion is very evident on slopes and within the gull colony areas.

There is currently no clear mechanism identified by the Applicant for when or how Adaptive Measures maybe triggered. For example, there is no clear understanding of what might be considered failure of the other Derogation Compensation measures, which might initiate the Contingency Compensation at Inchcolm to be implemented. Over a 35 year timeframe there will be significant other population trends that may impact seabird populations and increases/decreases in populations may not be easily attributable to the Applicant's measures alone. Therefore, there is significant danger for lengthy discussion & negotiation about what does or does not constitute a failure of the measures and what strategies should be used to address perceived/actual failures either on Inchcolm of the other Colony Compensation sites.

Detail is obscure and does not include any roles or responsibilities, or identification about how additional resources can be accessed or bid for (eg ∞ 251/252 and 273 IMP). There is no identified mechanism to secure clear funding streams during the lifespan of the wind farm.

A fuller package of measures needs to be in place for any reasonable probability of success of achieving the colony compensation targets. There is a serious risk that if Adaptive Measures are triggered or proposed at

a later stage, that these would fall by default to HES's purview and there would be no opportunity at that point for HES to seek additional resources from the Applicant to implement these.

Conclusion Adaptive Management

It is considered that Adaptive Management is a misnomer and is an inappropriate approach in this instance. If Inchcolm is taken forward as a Compensation location, it is recommended that a full zoned, timetabled and resourced Habitat & Seabird Management Plan is produced for the island covering the lifespan of the wind farm (35 years).

Professional experience indicates, there is a very real and high risk, without secure legally binding agreements and DCO (Development Consent Orders) which include costed resource budgets and mechanism in place at the outset, that the Colony Compensation package would not have the capacity to deliver the conservation objectives measures effectively over such a long timeframe.

The uncertainty in the submission represents an unacceptable high level of ecological risk. Without HES intervention, advocating for securing clear funding streams and negotiating a better nature conservation package, the organisation may be left in a position of accepting an inappropriate compensation package which is imposed upon HES by default should the scheme be granted permission.

Legal feasibility

Despite additional work being presented in the recent consultation, the Applicant appears not to have engaged with the landowner or factoring in terms of considering the acceptability of Colony Compensation on Inchcolm (cf Sectn 9.1 AEI Inchcolm). **At this point in the proposal's consideration, the lack of landowner engagement is considered to be a serious omission.**

Operational feasibility

Historic Environment Scotland is a heritage organisation, whose primary and statutory purpose is focused on the historic fabric and landscape of Scotland. The legislation that underpins HES's statutory role is the Historic Environment Act (Scotland) 2014, which followed the Ancient Monuments and Archaeological Areas Act 1979. The 2014 legislation provides the delegated powers to HES for Properties in Care – of which Inchcolm is one. The legislation is supported by government policy of which the most significance is the Historic Policy for Scotland (2019), which states: -

> "*HEPS* [Historic Policy for Scotland] *is a policy statement directing decision-making that affects the historic environment. …… relevant to a wide range of decision-making at national and local levels. It is supported by detailed policy and guidance. HEPS should be taken into account whenever a decision will affect the historic environment.* ***This includes in plans and policies that deal with funding decisions or estate management****, or other specific topics such as agriculture or energy. It is also a material consideration for planning proposals…..*"
>
> [Emphasis added]

The HEP policy goes on to state: -

> *"Policies for Managing the Historic Environment*
>
> *Policy HEP 2. Decisions affecting the historic environment should ensure that its understanding and enjoyment as well as its benefits are secured for present and future generations.*
>
> *Policy HEP 3. Plans, programmes, policies and strategies, and the allocation of resources, should be approached in a way that protects and promotes the historic environment. If detrimental impact on the historic environment is unavoidable, it should be minimised…….*

Historic Environment Scotland also has a statutory Biodiversity Duty under the Nature Conservation (Scotland) Act (2004) and HES also has a shared position statement with NatureScot (People, Place and Landscape, October 2019).

Wildlife is seen as a valuable visitor offer, alongside progressive change towards more biodiverse estate management practices across the Properties in Care. However, operational budget allocation and staff resourcing clearly needs to be focused on the historic environment for the people/communities now and in the future[28].

As indicated by the Applicant (∞88, CMME), HES currently has limited capacity to manage the wildlife of the site. This is particularly apparent given the recorded volume of visitors (see Table below). The following comments should be seen within HES's statutory role for Properties in Care, the framework that governs and guides the organisation's decision making and the daily operational constraints on Inchcolm to deliver these. This is one of HES's Properties in Care which has a moderate, but not insignificant, volume of visitors (20,000 – 25,000 visitors/annum). Inchcolm has a high value visitor offer and is one of the few islands within the Firth of Forth that is close to harbours, offering a short boat ride to view the island's heritage. Wildlife value in seabirds and seals is a considerable additional benefit to the visitor experience, which the on-site staff inform visitors of but is not their primary responsibility.

During the open season (April – October) the island is staffed by 4 people. The division of staff effort is seen as: -

- 2 staff for health & safety to disembark/board visitors onto the boats. On average there are 3.6 boats/day during open hours (10:30 – 16:30)[29], so tour boats on the jetty are transferring passengers on average every ¾ hour. In peak times this can be as frequent as every ½ hr.
- 1 member of staff provides the 'flagstaff' orientation talk to visitors on their arrival
- 1 member of staff to service the shop and visitor centre

The Table below summarises some of Inchcolm's operational features compared across some other sites referenced by the applicant.

The Applicant speculates that an additional benefit of the Compensation Package could be an increase in visitors (∞ 8.1.2 AEI Inchcolm). If the Applicant's compensation were successful and Inchcolm were to become 'Puffin Island', the impacts of visitors could increase both in terms of numbers and trampling/creation of informal paths to see the puffins. In HES's view the capacity to deal with increased visitors due to any wildlife gain is limited with the current staffing and resources. HES is currently reviewing the site, its visitor offer and its long-term planning to potentially expand the heritage management and interpretation of the island's other features. HES has no plans or policy objectives to restrict visitor numbers or their dogs at Inchcolm.

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[28] Our Past Our Future 2023, Mission Statement https://www.historicenvironment.scot/our-past-our-future/
[29] Figures supplied by Monument Manager

	Inchcolm	Isle of May	Handa	Inchkeith	Lundy
Visitors/annum	Ave 24,625[30]	10,000 generally[31]	Below 9,000[32]	No public visitors	17,000 – 20,000 Post eradication 20,000[33]
Area (ha)	10.5	57	367	n/a	450
Visitor/ hectare/annum	2,285	175	24	n/a	44
Dogs allowed	yes on lead	no	no	no visitors	no
Visitor management	Heritage venue Visitor orientation Access 'limited' by gull colony	Very well controlled	Specific leaflets Online resources Well controlled	Landing discouraged	Site orientation online for wildlife experience
Habitat management	No wildlife conservation plan (mow & clear paths treat hemlock & hogweed)	Yes plan in place	Yes plan in place	None	Yes plan in place
Managing organisation	Historic Environment Scotland	NatureScot NNR	Scottish Wildlife Trust	Privately owned	National Trust /Landmark Trust
Boat trips	Every ¾ hour 90 minute trip 2 operators. Informal access from the public	4-5 hour trip Operators licence can be limited	On demand – not Sundays	Unauthorised access only	Unregulated, with independent moorings and various charters landing

Within the submission the Applicant's offer towards the operation of Inchcolm and their support of seabird population management is extremely limited. While the Applicant does indicate (∞88, CMME) that HES has "*no resource to deal with work on seabirds and there is clear potential for applicant funded staff*", this concept is not explored elsewhere within the submission.

[30] Internal HES dashboard PICAMS figures from 2011 excluding Covid lockdown
[31] Isle of May Management Plan
[32] Various sources incl 2019 News letter which stated 8,839 visitors in 2018 was the highest annual figure to date. https://scottishwildlifetrust.org.uk/wp-content/uploads/2016/05/Handa-Island-Newsletter-2019.pdf
[33] Applicant's figures ∞ 8.1.2AEI Inchcolm Feasibility Study

The Lundy experience provides an indication of how many people-days (2,695 – Lock 2006) were required to effectively consider the island rat-free over a 4-year period. This is without any consideration of time undertaking other habitat or visitor management activities or the implementation of any ongoing long-term biosecurity measures. It appears that the scope of any package to support HES in the delivery of the Colony Compensation is limited to the first 4 or 5 years to achieve rat-free status (see discussion above in Black Rat Eradication). For the remainder of the wind farm's lifespan (35 years) the proposal indicates that the ongoing Biosecurity Implementation Plan will fall to HES to monitor and coordinate and ensure its implementation; initiating the calling in of specialist contractors if evidence of rat invasion is located (see above).

It is HES's view that currently the on-site staff provide:-

- Effective visitor orientation.
- Messaging about the wildlife of the island and its importance. Alongside the flagstaff talk on the important heritage and history of the island.
- Provide guidance on how visitors can enjoy their visit while respecting the wildlife, such as dogs on leads.
- They operate a gull free zone around the monument by signage, visitor site induction and good waste management. Waste management also reduces impacts of black rat in key visitor locations (ie shop, seating, bins)
- Paths and minimal tree/scrub clearance occurs under contract and is undertaken to provide visitor access
- Visitor access is essentially managed by default. Footfall is currently limited by the territorial behaviour of the gulls

However, staff have no capacity to incorporate additional activity particularly: -

- Visitor management or orientation outside the close confines of the monument. For example, patrolling or managing visitors around the gull colony or informal visitor access (kayak, yacht, paddleboards) which land at different points around the coastline.
- Seabird colony management or habitat works of any kind for wildlife.
- There is no scope to monitor or coordinate implementation of either the Biosecurity Implementation Plan, Adaptive Measures or any additional ecological interventions that might be considered necessary.
- Seabird and seal population monitoring is undertaken on a voluntary basis

Importantly, staff bid on an annual basis for budgets to undertake additional infrastructure works such as path overhaul/reinstatement or new visitor welfare units, heritage conservation proposals. New or changing landscape management proposals – such as habitat works – also have to be accommodated within the bidding process. Annual funding requests for one site are considered alongside the bids for works on the other 360 PICs. HES considers there is a serious risk to the organisation's current operation from the Applicant's proposals.

Conclusions Operational Feasibility

It would not be appropriate for SSE's compensation on Inchcolm to rely on internal HES staff resource or budget mechanisms to secure and cover any associated short fall in implementation from an Applicant's inadequately resourced Derogation Package for Colony Compensation.

HES has little confidence in the security of a suitable resourcing package for Colony Compensation at the outset of the wind farm's implementation. HES considers there is a serious risk to the organisation operationally. This could potentially lead to criticism of HES from other bodies such as NatureScot or Scottish Government at the proposed Annual Review and from public perception. This represents an unacceptable high level of operational risk for any future delivery shortfall, which could be entirely outwith HES control.

Conclusions of HES Operations Directorate comments on the Colony Compensation proposals for Inchcolm

Black Rat Eradication

- The black rat eradication and long-term rat-free maintenance is uncertain and maybe problematic on this island.
- The black rat historic status has not been totally or adequately demonstrated from documentary sources or beyond reasonable scientific doubt. Any decision on the use of eradiation should be placed within the context of black rat's conservation status.
- It is considered that without further monitoring and investigation of the impact of black rat on the seabird population dynamic on Inchcolm, eradication should not be considered as the primary measure.
- Long-term (35 years) monitoring and maintenance of the island as rat-free is identified for stakeholders to take ownership of (HES and boat operators). This is not acceptable to HES.

Ecological Feasibility

- The Applicant, HES's Annex and the scientific evidence of local analysis indicates that other ecological factors, some of which are edaphic or demographic, also operate on the island. There is a high probability that these limit populations and or future colonisation of target species. These factors have not been adequately investigated or addressed.
- The geological configuration of the cliffs are considered structurally suboptimal and in combination with the location of Inchcolm; a significant distance from auk feeding resources, result in a considerably lower probability of meeting the compensation targets. These factors are outside the control of either Historic Environment Scotland or the Applicant.
- The Applicant's habitat based assessment and projected targets are considered overly ambitious for this location. Without the provision of significant additional interventions both ecologically and operationally, there is an extremely low probability of meeting these conservation objectives on Inchcolm for the 4 target species (puffin, razorbill, kittiwake & guillemot).
- Unintended negative nature conservation consequences on other seabird species are unpredictable. These have not been adequately investigated and appropriate mitigation for these likely impacts have not been presented.
- Note: - A detailed analysis of the predicted impacts of the scheme are not within the scope of HES's response

Adaptive Management

- Adaptive mitigation is considered a misnomer in this instance. HES view is that this an inappropriate and uncertain mechanism to achieve the conservation targets.
- The proposed Annual Stakeholder meeting to negotiate on-going tasks is not acceptable without a Habitat Seabird Management Plan with agreed clear budget streams and responsibility identified. This needs to be secured via legally binding agreements and DCO (Development Consent Orders) as any permission is awarded.

Operational Feasibility

- The Applicant acknowledges and the Annex demonstrates, that HES have no additional capacity to deal with either long-term biosecurity, tasks associated with nature conservation management of the seabird colony or increased visitor numbers associated with wildlife viewing.
- A Habitat Seabird Management Plan with agreed clear budget streams and responsibility identified needs to be secured via legally binding agreements and DCO (Development Consent Orders) as any permission is awarded. This is to ensure that Historic Environment Scotland does not take on an unacceptable operational load later in the wind farm's operational lifespan

Proportionality

- There is also a wider question; whether this is the right location and approach to compensation (solely black rat eradication) and therefore if it is a proportionate response to the identified impacts of the scheme. This is particularly pertinent given the edaphic and demographic conditions that are present.

Legal Feasibility

- There is no evidence that the landowner of Inchcolm has been consulted and agreed to the Applicant's proposal.

HES require considerably more comfort and the development of secure mechanisms to be in place if Scottish Ministers were to grant permission for the project. These should be agreed and secured via legally binding agreements and DCO (Development Consent Orders).
Given the on-site knowledge and wider experience of site management, resources from the Applicant should secure items such as: -

1. Communications Officer paid for by the Applicant to be embedded in-house with HES for 5 years until island has been declared rat-free following the eradication programme should it be implemented.
2. Additional ranger/warden staff on-site, paid for by the Applicant for the duration of the development (35 years). Coordinate habitat management works according to a Management Plan and its review, alongside reporting to the annual SSE stakeholder monitoring event. The role to work alongside on-site staff both on the island during the visitor season and to coordinate Applicant funded works over the winter. The ranger could assist with visitor management around the breeding bird colonies, undertake/supervise seasonal habitat management during breeding season/winter.
3. Ranger/warden staff on-site monitoring To implement the Biosecurity Plan should black rat eradication be undertaken. Coordination of annual bird monitoring counts.
4. Provision of an agreed budget to commission works such as infrastructure path repairs (visitor pressure, habitat works access), habitat management contracts (eg rope access, scrub clearance, pre-season habitat preparation).
5. Any budget and staff costs should be index linked and secured via a Bond within the permission to ensure that moneys stay available for lifetime of the project (35 years).

Teresa Hughes – HES Ecologist, Environmental Advisor
October 2023

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

By email to:
MS.MarineRenewables@gov.scot

Rebecca Ross
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Edinburgh
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HMConsultations@hes.scot
Enquiry Line: 0131-668-8716

Our case ID: 300044396

03 October 2023

Dear Rebecca Ross

The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Berwick Bank Offshore Wind Farm
Additional Environmental Information

Thank you for your correspondence dated 18 August 2023 seeking our comments on the Additional Environmental Information (AEI) for the above proposal. This letter contains our comments for our historic environment interests. That is scheduled monuments and their settings, category A listed buildings and their settings, Inventory gardens and designed landscapes (GDL), Inventory battlefields, World Heritage Sites inventories and Historic Marine Protected Areas (HMPAs). In this case, our advice also includes matters relating to marine archaeology outwith the scope of the terrestrial planning system.

This response relates only to our statutory historic environment interests as a statutory consultee for the Section 36 and Marine Licence applications under the Environmental Impact Assessment Regulations. HES will provide comments separately to the additional information relating to the compensatory proposals in the Derogation Case in our role as managers of Inchcolm Abbey.

Historic Environment Scotland's position
Historic Environment Scotland (HES) does not object to the application. We have reviewed the Additional Environmental Information supplied along with the original EIA Report.

Our advice
We understand that the AEI relates to information on the approaches to modelling the potential effects of underwater noise on marine mammals and on the effects of disturbance to ornithological receptors from vessels, helicopters and drones.

We note that no information or reassessment has been provided in relation to effects on the historic environment. We are satisfied that the AEI does not demonstrate any change to the assessed effects on the historic environment in the original EIA Report.

We are, therefore, content that the AEI does not demonstrate an effect that is significant for our interests. In light of this I can confirm that Historic Environment Scotland have no additional comments to add to our previous response dated 20 February 2023.

(As noted above, HES will provide comments separately to the additional information relating to the compensatory proposals in the Derogation Case in our role as managers of Inchcolm Abbey.)

Please contact us if you have any questions about this response. The officer managing this case is Victoria Clements who can be contacted by phone on 0131 668 8730 or by email on Victoria.Clements@hes.scot.

Yours sincerely

Historic Environment Scotland

Ministry of Defence

From:	Teena.Oulaghan100@mod.gov.uk
To:	MS Marine Renewables
Cc:	Rebecca Bamlett; Emma Lees; Rebecca Ross
Subject:	20230921_MOD_Response - Additional Information Application Consultation - Berwick Bank
Date:	21 September 2023 14:37:49
Attachments:	image001.png

Good afternoon Rebecca,

Thank you for consulting the MOD on the additional information. I can confirm that I have reviewed the documents on the website. As the locations and the dimensions of the turbines are unchanged, the MOD position remains extant as set out in our response dated 21/02/2023, I therefore have no further comments to add.

I can confirm that the developer is engaging with MOD in regard to mitigating our objections for the impact the development has on MOD Radars.

Kindest regards

Teena Oulaghan | Safeguarding Manager
Defence Infrastructure Organisation
Estates | Safeguarding
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NATIONAL TRUST *for* SCOTLAND

The National Trust for Scotland: response to the additional information application for Berwick Bank Offshore Windfarm

1. Summary
2. Addendum to the Derogation Case
    2.1 Proposed Gannet compensation
    2.2 Dunbar colony measures
    2.3 Handa rat eradication feasibility study
    2.4 Proposed Sandeel compensation
3. Supplementary Information on proposed Sandeel compensation measure and alternative sites
    3.1 Additionality of proposed Sandeel compensation measure
    3.2 Alternative sites

1. Summary

The National Trust for Scotland (the Trust) cares for St Abb's Head National Nature Reserve (NNR), which is home to internationally important seabird colonies. The cliffs are populated by around 45,000 seabirds during the breeding season, including internationally important numbers of guillemots and nationally important numbers of kittiwakes, razorbills and shags. St Abb's Head NNR looks out towards the Firth of Forth Banks Marine Protected Area (MPA) which is designated for its species, habitats and geomorphological features. It is also situated on top of the Outer Firth of Forth and St Andrews Bay Complex Special Protection Area (SPA), a designation under the European Union Directive on the Conservation of Wild Birds, and is a popular tourism destination, as well as part of an important landscape.

St Abb's Head NNR will be one of the most impacted sites by Berwick Bank Offshore Windfarm. The Trust has a duty to care for, share and speak up for Scotland's magnificent heritage. This not only involves the sites we care for but also Scotland's amazing seascapes, marine life, seabirds and coastal communities.

The Trust appreciates the additional information provided by the SSE-R but queries why only comments from RSPB, NatureScot and Natural England have been directly addressed. This seemingly arbitrary choice of whom the applicant should respond directly to is disappointing.

We are particularly concerned that SSE-R has not addressed the issues we raised regarding the validity of the methods used to gather and interpret scientific data, or the accuracy of the seabird mortality figures presented.

As one of the most affected organisations through our guardianship of St Abb's Head NNR, the Trust believes the comments in our original objection should have been directly addressed. We have written to the Marine Directorate to express this and request our comments be addressed and we in turn be given appropriate time to respond.

The concerns about methods of data gathering and interpretation were raised by multiple organisations, pointing to a need to a need for standardised methodologies to be used in the sector.

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The position set out the Trust's original objection still stands- we support the ambition behind Berwick Bank Offshore Windfarm, however we object to the proposed location given its unusually high predicted impacts on seabirds and believe that other locations such as deep-water sites further out to sea would be more appropriate. The scale of seabird loss from the Berwick Bank project may potentially jeopardise future offshore developments, affecting in turn the desired energy transition for Scotland.

2. Addendum to the Derogation Case

This section covers the Trust's comments on sections 1-7b of the Addendum to the Derogation Case, which included chapters on the proposed compensation measures regarding rat eradication on Handa, a warden at Dunbar and the closure of Sandeel Area 4 (SA4), as well as updates to the Environmental Impact Assessment and Habitats Regulation Appraisal.

2.1 Proposed Gannet Compensation

This is a new proposed compensation measure to reduce the gannet cull at Sula Sgeir as a means of reducing human predation and providing more space for gannet nesting. It has been proposed in response to comments from NatureScot.

Under licence, the men of Ness take an average of 1917 gugas p/a from Sula Sgeir. The applicant states that *"although simple population modelling indicates that the harvest is sustainable, the harvest has reduced the rate of population growth at Sula Sgeir relative to other colonies (Trinder, 2016). It also may be the case that harvest affects the growth rate of other Gannet colonies in the region due to natal emigration between colonies… and ending the hunt could lead to increased growth of the surrounding colonies."*

The proposed measure would reduce the licence from 2000 p/a to 1000 p/a. Over recent years the licence has been gradually reduced from around 3500 guga to 2000 by NatureScot. The applicant claims the proposed measure will be ecologically effective and sufficient because the measure will increase the chick population by 1000 p/a, and additional because there is no other plan to reduce the cull. The applicant also states that due to the transitory nature of gannet colonies the proposed measure will offset the impacts of the Berwick Bank Offshore Windfarm on gannet mortality and displacement.

The Trust queries a number of claims made about the effectiveness and feasability of this proposed measure:

- There is no assessment of the impact on cultural heritage. The guga hunt at Sula Sgeir has a long and deep connection for those who take part. It has been part of the community way of life for hundreds of years and forms an important tradition for people from Ness. The Trust strongly recommends the applicant be instructed to carry out a cultural heritage assessment.
- To achieve the proposed measure, the application states "*the Applicant will actively engage with the Men of Ness to facilitate a negotiated agreement to reduce cull numbers and consider additional benefits that could be provided".* The Trust queries how it can be

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accepted as a realistic measure to manage seabird mortality when there is no guarantee the applicant will be able to deliver it.

- The St Abb's Head to Fast Castle SPA is not designated for gannets, therefore we are unclear how this proposal can be properly considered compensation in the Derogation Case under the Habitats Regulations (although it is undoubtedly a proposed compensation measure for an impacted species).
- It has been reported that no licence was given to take gannet chicks in 2022 or 2023[1] due to the impacts of avian flu[2]. Therefore, the Trust disagrees with the accuracy of the applicant's statement that *"[the proposed measure is additional because] there is no evidence of any action currently underway to stop the hunt, and there are no known plans to stop the guga hunt for conservation (or any other) purposes".*

2.2 Dunbar colony measures

In the Addendum to the Derogation Case Section 7a Updated EIA for Compensation Measures, SSE-R states that the proposed measure involves a wardening role and adding artificial nests. However, as highlighted in our original objection, there are currently available ledges for birds at Dunbar, meaning there is no requirement for the addition of artificial ledges, and nesting sites are not the constraint on sustaining or growing the population.

As highlighted by MacArthur Green (2021) *"the effectiveness of providing artificial sites in Scotland would be likely to be much less than in locations where natural habitat is lacking or scarce, and this may not be very effective as a compensation measure in places, such as east Scotland, where there are numerous natural colonies already occupying much of the coastline"*[3].

MacArthur Green also advises that "*to provide successful compensation, new artificial colonies need to be adopted by kittiwakes which were otherwise unable to breed due to lack of nesting opportunities, or to result in improved breeding success relative to existing nearby natural colonies. Pairs breeding at those sites need to produce about 0.8 chicks per nest just to maintain the population at the new artificial site. So only breeding success in excess of 0.8 chicks per nest will represent potential compensation for losses of birds through collision mortality. Artificial sites therefore need not only to be used but need to achieve higher breeding success than at natural colonies of kittiwakes so that the surplus production provides compensation."* This highlights the very limited potential of this proposed measure to offer meaningful compensation.

The Trust also raised concern about the assertion that clipping plastic from the nests in Dunbar would have a significant positive impact on kittiwakes, which has not been addressed.

[1] https://theferret.scot/nearly-50000-animals-licensed-killed-naturescot/
[2] https://www.welovestornoway.com/index.php/articles/30784-guga-hunt-is-not-theirs-to-trade-away
[3] https://www.offshorewindscotland.org.uk/media/12970/hra-derogation-scope-b-report.pdf

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2.3 Handa rat eradication feasibility study

In our original objection, the Trust raised concerns with this proposed measure on two counts- firstly there is a high risk of re-invasion which is not accounted for in the derogation case and secondly the numbers of birds anticipated to increase per year on Handa appears to be overestimated as kittiwakes commonly nest on very steep cliffs where it is difficult for rats to access.

In the Addendum to the Derogation Case Section 7a Updated EIA for Compensation Measures, SSE-R states the *"[Handa] proposed measure is anticipated to result in a significant increase in the population of kittiwakes".* The Trust still has concerns that this finding is overstated and believes it is crucial the applicant address our original point that kittiwakes commonly nest on very steep cliffs where it is difficult for rats to access therefore rat eradication is unlikely to have significant impact on population levels.

MacArther Green (2021) provides further proof that kittiwakes are unlikely to benefit at all from rat eradication on Handa, advising that kittiwake predation by any mammals is extremely rare and listing evidence from Lundy, the Isles of Scilly and Ailsa Craig where rat eradications have had no effect whatsoever on kittiwake populations[4].

The applicant has provided additional information on the inclusion of a buffer zone using monitored bait stations on the mainland to overcome the high risk of reinvasion in response to concerns about this proposed measure. The Trust contests the effectiveness and feasibility of this. The source of rat re-incursion is unknown and could feasibly be in multiple areas. The source could also change between incursions therefore fixed stations are unlikely to be able to capture all potential invasion risks. In terms of feasibility, monitoring for rats would need to cover a huge area, which would be both extremely labour intensive, and needed to be maintained in perpetuity.

In New Zealand, a world leader in biosecurity, buffer zones involve erecting predator proof fences and using rodenticide in the buffer zones. There are no buffer zones in the UK. This illustrates the gargantuan task that installing an effective buffer zone would be. It would involve constant lethal control of rats, likely using large quantities of rodenticide which can result in secondary poisoning of wildlife.

2.4 Proposed Sandeel compensation

The Trust is disappointed the applicant did not provide additional information in response to concerns raised in the original objection regarding.

- The accurate characterisation of all causes of sandeel depletion.
- the projected effectiveness of the projected closure, which we believe is overstated and would require a fuller closure to be effective.
- the accuracy with which the ecological effectiveness of such a measure has been assessed.
- the ability to achieve the adaptive management measure of stopping scallop dredging.

[4] https://www.offshorewindscotland.org.uk/media/12970/hra-derogation-scope-b-report.pdf

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3. Supplementary Information on proposed sandeel compensation measure and alternative sites

3.1 Additionality and effectiveness of sandeel compensation measure

SSE-R disagrees with our stated concern that the proposed sandeel compensation is *not* additional. SSE-R argues that the proposed measure is additional because "sandeel fisheries management is not pursuant to the normal management of national site network management" (in other words, there is no legal requirement for Scottish Government to close the sandeel fisheries to manage a designated site or fulfil a legal obligation such as meeting Good Environmental Status).

The Habitats Regulations Guidance states *"any measure that is being or will be undertaken by government bodies to ensure that the site is in favourable conservation status or that protected features are in favourable condition, should not be considered as compensation".* As sandeels are a Priority Marine Feature we query if the closure of that fishery could be considered a 'normal' activity undertaken to maintain the integrity of the PMF network.

SSE-R highlight that the Habitats Regulations Guidance states that "Compensatory measures should be additional to the actions that are normal practice… (i.e. within the bounds of everyday financial and political realities)…" However, fisheries management is very much normal practice for Scottish Government, as evidenced by the granting of Marine Conservation Orders and the closure of SA4.

The additional information provided also fails to answer the Trust's important concern that a closure of SA4 alone is insufficient to deliver the stated outcomes. Closing only SA4 will simply redistribute stock instead of increasing it. As highlighted by Macarther Green (2021), *"a no-take zone should include not only the core foraging grounds used by breeding kittiwakes…. To be most effective, the entire stock should be protected from directed fishing effort.*[5]*"*

As well as discussing the legal intricacies line of argument, the Trust believes it is important to ask if the applicant can in good faith continue to promote the proposed sandeel closure as effective compensation if Scottish Government does indeed close the fishery as an outcome of the live consultation and given the evidence showing the ineffectiveness of closing only SA4. Even if legally it were to be found that the proposed measure is technically additional, it will not deliver true additional benefit to kittiwakes (as shown by Macarthur Green (2021)) therefore it would be a hollow win. We encourage SSE-R to look closely at this when deciding if to continue with the proposed measure, as all parties involved should be trying to ensure the best ecological outcomes for the proposed development. A technical win at the expense of real impact will not do this.

3.2 Alternative sites

SSE-R has outlined why they believe another SCOTWIND site is not an acceptable alternative. Their reasoning, one can reasonably assume, pertains to other non-SCOTWIND deepwater sites. SSE-R states that higher cost of floating technology mean offshore sites *"will not deliver low carbon electricity at the lowest possible cost to the UK consumer".* However, the most recent SCOTWIND

[5] https://www.offshorewindscotland.org.uk/media/12970/hra-derogation-scope-b-report.pdf

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round[6] saw 17 applications approved, for a total of 24.8 MW, with 10 of these being floating developments. This reasoning also does not provide an explanation for the other reasons the Trust raised as to why SSR-R should explore alternative sites, namely: impact on seabird mortality, landscape, fisheries and coastal communities and because the proposed compensation is ineffective and not additional as sites are generally chosen on factors wider than the eventual cost for consumers.

SSE-R also states it cannot consider other SCOTWIND sites as *"ScotWind projects will also have ornithological impacts on European sites, which are as yet unquantified and the information does not exist to meaningfully comparatively assess them".*

The Trust finds this misleading on two counts- firstly, until there is a driver for an applicant to conduct an assessment the ornithological impacts remain unquantified for all sites. We are only aware of the ornithological impacts on Berwick Bank Offshore Windfarm because SSE-R has carried this out. Assessing the ornithologic impact to compare impacts between sites is achievable, and not an excuse to discard other potential sites.

Secondly, there is more than adequate data on offshore foraging sites that could be drawn on to make a preliminary judgement on predicted seabird mortality. For example, Wakefield et al (2017)[7] and Waggitt et al (2020)[8] both clearly describe the well-known ecological fact that the density of foraging seabirds declines as the distance from that colony increases. Put simply, the impact on foraging seabirds during the breeding season is certainly lower in sites further from colonies.

As outlined in the Trust's original objection, we would appreciate clarification as to why overlap with an MPA was considered a justification for excluding DW1 but not a reason to exclude the current site.

Yours,

Diarmid Hearns, Head of Public Policy, Environment and Risk

[Redacted]

[6] https://www.crownestatescotland.com/news/scotwind-offshore-wind-leasing-delivers-major-boost-to-scotlands-net-zero-aspirations
[7] https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.13525
[8] https://esajournals.onlinelibrary.wiley.com/doi/10.1002/eap.1591

NATS
Safeguarding

From:	NATS Safeguarding
To:	MS Marine Renewables
Cc:	Rebecca Bamlett; Emma Lees; Rebecca Ross
Subject:	RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - Response by 3 October 2023 [SG30350]
Date:	04 September 2023 09:08:02
Attachments:	image002.png image003.png image004.png image005.png image006.png image007.png image008.png

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Our Ref: SG30350

Dear Sir/Madam

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully

NATS Safeguarding

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Natural England

Date: 24 October 2023
Our ref: 446713

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Marine Laboratory,
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Lancaster House,
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0300 060 3900

BY EMAIL ONLY

Dear Rebecca

Berwick Bank Offshore Wind Farm - Additional Information Application Consultation

Thank you for your further consultation on the Berwick Bank Array scheme. Natural England has reviewed the associated documents and can provide the following response.

To inform this response, we have referred to:

- AEI02: Addendum to the Derogation Case Section 1 Introduction
- AEI02: Addendum to the Derogation Case Section 3 Implementation, Monitoring and Adaptive Management
- AEI02: Addendum to the Derogation Case Section 7a Updated EIA for Compensation Measures
- AEI02: Addendum to the Derogation Case Section 7b Updated RIAA for Compensation Measures
- AEI03: Supplementary Information Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures
- AEI03: Supplementary Information Section 3 Consideration of Precaution
- AEI03: Supplementary Information Section 4 Alternatives and Additionality
- *Derogation Case Fisheries Compensatory Measures Evidence Report
- *Non-breeding season apportioning for guillemot at Flamborough and Filey Coast SPA – Note for Natural England

*Note that the last two documents were submitted in March 2023 and reviewed then but are relevant to the additional information and so have been revisited again for this current consultation.

Summary of Natural England's advice

Scope of comments:

- Natural England note that there have been no changes in terms of the impact assessment, and we therefore refer back to the comments we made on this in April 2023, our ref 416763.
- Natural England note that the derogation case rests largely on the proposal to close or manage the sandeel fishery in SA4, so we have focused our compensation comments on the ecological likelihood of success of this measure.
- Natural England have focused our comments on the species for which we have been unable to rule out Adverse Effect on Integrity (AEoI) at English Special Protection Areas (SPAs) (see comments in our previous response April 2023, our ref 416763): kittiwake, guillemot, razorbill, and puffin.

Scale of predicted impacts

Natural England note that the predicted impacts of the project on English SPAs are substantial. We also note that the predicted impacts to the overall SPA network are extremely large. The project's predicted EIA impacts come close to the recently determined cumulative EIA totals for all consented offshore wind farms to date (Natural England 2023, SEP & DEP OWF Deadline 8). Cumulative totals at EIA for existing offshore wind farms plus SEP & DEP, Hornsea 4 and Rampion 2 were 1,266 - 29,537 for guillemot and 418 – 9,758 for razorbill. Natural England note that the predicted impacts (scoping approach) for Berwick Bank are 1,855 for guillemot and 379 for razorbill. They therefore fall within the range of existing cumulative impacts for guillemot, and come close to the range of existing cumulative impacts for razorbill. The predicted impacts (scoping approach) for Berwick Bank for kittiwake are 1,377, which represents nearly half of cumulative EIA totals to date for this species (3,010).

Consideration of precaution and uncertainties

Natural England note that we do not consider that the impacts predicted by the 'Scoping Approach' assessment methodology are overly precautionary. If Natural England advice regarding the impact assessment methodology had been followed, the predicted impacts for many species would likely have been higher than those predicted by the Scoping Approach. There is a need for precautionary assessment of impacts given the recent and ongoing outbreaks of highly pathogenic avian influenza (HPAI) in seabirds, predicted impacts of climate change on seabirds, and recent and ongoing auk wrecks in the North Sea. For detailed advice, please see Annex A.

Confidence in ecological likelihood of success of the proposed compensation measures

Natural England do not agree that the compensation measures proposed can be confidently expected to offset the predicted impacts to English SPAs or the SPA network. Natural England note that the derogation case rests almost entirely on the proposed measure to close or manage the sandeel fishery in SA4. The applicant has stated that they have "*provided robust evidence and data to demonstrate that the compensatory measures proposed will be effective, are sufficient and can be secured and implemented*". Natural England do not agree that this measure can be relied upon to fully compensate for the predicted impacts of this project, which are considerable (see comments above on scale of predicted impacts and consideration of precaution). Natural England note that the ecological benefits of this measure predicted by the applicant are based on several key assumptions. For detailed advice, please see Annex B, C and D.

Please find our detailed comments in the attached Annexes:

Annex A – Consideration of precaution and uncertainties

Annex B – Confidence in ecological likelihood of success of the proposed compensation measure: Closure of SA4 sandeel fishery

Annex C – Ecological likelihood of success of proposed compensation measures: other proposed compensation measures

Annex D – Confidence in ecological likelihood of success of the proposed compensation measures

For any queries relating to the content of this letter please contact me using the details provided below.

Yours sincerely,

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Cc NatureScot

Annex A: Consideration of precaution and consideration of uncertainties

Document ref	Comment
AEI03 Section 3: Consideration of Precaution AEI02 Section 3: Implementation, Monitoring, and Adaptive Management	**<u>Consideration of precaution in impact assessment</u>** In AEI03 Section3, the applicant claims that the assessment of the project's impacts using the 'Scoping Approach' "*is considered to lead to an overestimation of predicted impacts by applying an excessive level of precaution*". In AEI02 Section 3, the applicant states "G*iven the precautionary approach to assessment, it is likely that the actual impacts from the proposed project will be lower than predicted*". Natural England advise that the impacts predicted by the 'Scoping Approach' are not overly precautionary. Natural England note that, had Natural England advice for impact assessment methodology been followed, the predicted impacts for many species would likely have been higher than those predicted by the Scoping Approach. We refer back to the comments we made on impact assessment methodology in April 2023 (our reference 416763), which noted that: • Natural England note that we do not agree with the use of sabbatical rates to exclude sabbatical birds from impact assessment, nor do we consider the inclusion of sabbatical rates to be appropriate within the apportioning process. • Natural England does not support the use of the stable age structure approach for age apportioning. • The upper ends of the ranges advised by Natural England for these species would be a Displacement Rate of 70% and a Mortality Rate of 10%, to be applied in all seasons. • Natural England does not agree with the application of any gradients of displacement impacts being applied to buffer zones. • Natural England advise that displacement impacts during construction and decommissioning be included in impact assessment and should be considered to be half the predicted impacts during operation and maintenance for impact assessment. • Natural England advise that displacement impacts are assessed for puffin in the non-breeding season, and apportioned according to the BDMPS method. • Natural England note that, should the Natural England approach be applied, then there would be impacts apportioned to guillemot at Flamborough and Filey Coast SPA, and this would mean that adverse effect on guillemot at Flamborough and Filey Coast SPA could not be ruled out, in-combination with other projects.

AEI03 Section 3: Consideration of Precaution AEI02 Section 3: Implementation, Monitoring, and Adaptive Management	**<u>Need for a precautionary assessment of impacts</u>** Natural England note that there is an additional need for precautionary assessment of impacts given the recent and ongoing outbreaks of highly pathogenic avian influenza (HPAI) in seabirds (Pearce-Higgins et al 2023), predicted impacts of climate change on seabirds (Pearce-Higgins 2021) and recent and ongoing auk wrecks in the North Sea (Fullick et al 2022). These are further reasons why Natural England do not believe that the impacts predicted by the 'Scoping Approach' are overly precautionary.
AEI02 Section 3: Implementation, Monitoring, and Adaptive Management	**<u>Potential future changes in assessment of impacts</u>** In AEI02 Section 3, the applicant states: "*It is anticipated that monitoring of environmental effects of the project via the Project Environmental Monitoring Programme (PEMP), new evidence from industry research, and refinement of project design parameters will refine the impact assessment, and provide evidence that the number of birds to be compensated for is much lower than those predicted considering the precautionary approach taken in the RIAA supporting the application*." Natural England note that the results of ongoing or future research and monitoring cannot be speculated on. The uncertainties that require the application of the precautionary principle when assessing predicted impacts remain.
AEI02 Section 3: Implementation, Monitoring, and Adaptive Management AEI03 Section 2: Sufficiency and Immediate Benefit of the Sandeel Compensation Measures	**<u>Compensation ratios</u>** In AEI02 Section 3, the applicant states "*there is little uncertainty of the sufficiency of this measure, as demonstrated via scenario analysis"* and that this scenario analysis *"shows that for the worst-case benefit of the proposed compensation measures combined with the worst-case impact, compensation ratios of greater than 8 can be achieved".* Natural England do not agree with this statement and consider that there are considerable uncertainties surrounding the likely effectiveness and sufficiency of the proposed measure (see comments on 'Ecological likelihood of success of proposed compensation measures: closure of SA4 sandeel fishery'). Natural England note that it is unclear how the compensation ratios presented in AEI02 Section 3 and AEI03 Section 2 have been calculated by the applicant. We further note that the compensation ratios presented in AEI02 Section 3 and AEI03 Section 2 differ greatly. For example, the compensation ratios for kittiwake and guillemot presented in AEI03 Section 2 (Table 10) are 1.8 and 1.2, respectively, but the compensation ratios for kittiwake and guillemot presented in AEI02 Section 3 are 8.1 and 8, respectively.

	Natural England consider that the levels of uncertainty associated with the success of this measure are such that compensation ratios would need to be set very high to maximise the chances of success.
AEI02 Section 3: Implementation, Monitoring, and Adaptive Management	**<u>Adaptive management</u>** In AEI02 Section 3, the applicant states that "*the adaptive management approach can be a useful way to manage the uncertainty of system responses to management actions".* Natural England agree that adaptive management plans are key to the successful implementation of compensation measures and that these plans should be able to address any insufficiencies in the effectiveness of the measure, as identified through appropriate monitoring. Natural England note that adaptive management is widely acknowledged to be a key part of the mitigation hierarchy (McGregor et al 2022; Searle et al 2023). The applicant states that they have demonstrated "*that monitoring and adaptive management of each measure is feasible, and contingency measures are also available".* However, Natural England note that, for the primary compensation measure proposed – the closure of the SA4 sandeel fishery, the applicant has not identified any adaptive management plans, stating "*closure of the fishery is a one-off management action"* which cannot be scaled up should the measure be shown to be insufficiently effective. The applicant states that *"the implementation of possible adaptive management actions such as cessation of scallop dredging in sandeel habitat could be explored further if objectives were not being met"* and suggests a list of contingency measures that could be developed at a later date. Natural England note that this is not a considered adaptive management plan and that there is no evidence presented on the likelihood of benefits to impacted seabird populations from any of these contingency measures or from cessation of scallop dredging in sandeel habitat. Natural England consider that there are considerable uncertainties surrounding the likely effectiveness and sufficiency of the proposed measure (see comments on 'Ecological likelihood of success of proposed compensation measures: closure of SA4 sandeel fishery'). Also, the lack of adaptive management options is an important omission.

Annex B: Ecological likelihood of success of proposed compensation measures: closure of SA4 sandeel fishery

Document ref	Comment
Evidence of effects of sandeel fishery closure on sandeel populations	
AEI03 Section 2: Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Effects of past closures on sandeel populations</u>** The predicted benefits of the proposed measure put forward by the applicant rely heavily on the assumption that full closure of the SA4 sandeel fishery would lead to increases in sandeel abundance. Natural England note that this assumption rests largely on the applicant's claim that sandeel biomass has increased as a result of the partial closure of SA4 (the 'closed box') in 2000. In the Fisheries Compensatory Measures Evidence Report, the applicant states that sandeel "*stock in ICES SA4 recovered from a very low level in 2000-05, with a progressive increase in abundance up to 2018*" following the partial closure. Natural England note that this statement is not supported by a review of the scientific evidence by the Scottish Government (2023), which concludes that the overall trend has been an "*overall decrease of sandeel biomass despite the fishery closure*" and that "e*vidence establishing the effect of the fishery closure is limited*". While there were initial increases in sandeel biomass in the first years following the closure, the Scottish Government (2023) found that these increases "*cannot be attributed to the closure*". Furthermore, these increases were short-lived, and overall sandeel biomass has declined in SA4 since the partial closure (Greenstreet et al 2010; Scottish Government 2023).
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Predicting effects of future closures on sandeel populations</u>** In AEI03 Section 2 and the Fisheries Compensatory Measures Evidence Report, the applicant claims that the "*smallest realistic change in sandeel TSB*" from closure of the SA4 fishery would be an increase in sandeel biomass from 300,000 tonnes to 400,000 tonnes, and used this as the "*reasonable worst-case benefit scenario*" in their assessment. Natural England do not agree that this is the smallest likely benefit, as the best available evidence suggests that there is no guarantee of any increase in sandeel biomass from closure of the SA4 fishery. The existing partial closure of SA4 has not resulted in overall increases in sandeel biomass in the area (Scottish Government 2023). Initial increases in sandeel biomass following the closure of the box within SA4 were followed by declines due to poor environmental conditions (Greenstreet et al 2010).

	In the Fisheries Compensatory Measures Evidence Report, the applicant states that "*reduction of fishing pressure is the most important single influence*" on sandeel populations. Natural England note that the scientific evidence suggests that fishing mortality is not the greatest driver of sandeel population dynamics, with other factors such as natural mortality, environmental conditions and recruitment playing a greater role (Natural England, Cefas and JNCC 2023; Poloczanska et al 2004; Scottish Government 2023). Studies of sandeel populations in SA4 have concluded that abundance in this area is mostly driven by recruitment (Scottish Government 2023). Modelling done by Natural England, Cefas and JNCC (2023) also suggested recruitment was the key driver of sandeel populations and that that fishing does not have a strong effect on sandeel biomass. Poloczanska et al (2004) notes that the mechanisms behind sandeel recruitment are poorly understood and that sandeel populations may crash even at low levels of exploitation. Predictive modelling work done by Natural England, Cefas & JNCC (2023) as part of core advice to Defra on the likely ecosystem effects of sandeel fishery closures concluded that "*the impacts of extraneous factors on sandeel recruitment mean that even with low fishery exploitation pressure, the risk of population collapse still exists*." The effects of climate change have been shown to impact strongly on sandeel populations in the North Sea via several mechanisms (Lindegren et al 2018; Natural England, Cefas, and JNCC 2023; Scottish Government 2023; Searle et al 2023). Lindegren et al (2018) concluded that increasing temperatures had negative effects on sandeel recruitment and that even with reductions in fishing pressure, the recovery of sandeel populations in the North Sea was likely to be inhibited by other environmental factors such as increased temperatures and reduced feeding conditions. While the Natural England, Cefas and JNCC (2023) modelling work predicted a likely increase in sandeel biomass if all UK North Sea fisheries closed, this model assumed that current environmental conditions would not change, which is unrealistic given the current and predicted impacts of climate change, a caveat acknowledged in the report. The same report also stated that "*even with a full prohibition of sandeel fishing in UK waters, sandeel biomass and recruitment will fluctuate, meaning sandeels are unlikely to be sustained at levels where they alone are sufficient to support the dietary needs and reproductive performance of predators*" and that "o*cean warming in the coming decade may therefore threaten the viability of sandeel populations in the North Sea*". In the Fisheries Compensatory Measures Evidence Report, the applicant states that "*in SA4 the effects of climate warming will be less than in the southern part of the North Sea*", but Natural England, Cefas and JNCC (2023) concludes that

	"*environmental variation is diffuse and will impact sandeel populations across the North Sea*." Natural England note that there are therefore considerable uncertainties associated with the increases in sandeel biomass predicted by the applicant from the closure of the SA4 fishery that do not appear to have been acknowledged in the applicant's assessment. Given the likely impacts of climate change on sandeel populations in the North Sea over the coming decades, we note that there are also uncertainties associated with the potential of this fishery closure to deliver increases in sandeel abundance throughout the lifetime of the project.
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Location and spatial scale of proposed closure</u>** Natural England note that the population dynamics of sandeels mean that it is highly unlikely that a reduction in fishing pressure in SA4 would result in increases in sandeel abundance in other sandeel management areas. The potential benefits of a SA4 closure to seabirds at impacted English SPAs are therefore not clear, in particular with respect to the Flamborough and Filey Coast SPA (FFC SPA). Seabirds breeding at FFC SPA have been shown to forage mainly in the Dogger Bank, which is in a different sandeel management area (SA1r) a considerable distance from SA4 (MacArthur Green 2022; Natural England, Cefas & JNCC 2023; Wischnewski et al 2017). In the Fisheries Compensatory Measures Evidence Report, the applicant admits that it is "*not possible to apply the same evidence of changes in sandeel TSB and seabird demography to the FFC SPA, as the majority of individuals will be foraging within SA1r, not SA4*". However, the applicant states that the FFC colony would benefit due to "*spill over effects from the reduction in sandeel fishing mortality in to SA1r*", further claiming that substantial spill over effects from SA4 are "*very likely*". Natural England note that the evidence shows that adult sandeels are highly sedentary. The Scottish Government's (2023) evidence review states that, for adult sandeels, "*very little to no exchange was found between sandeel aggregations separated by distances > 28 km, even if these aggregations were connected by continuous stretches of suitable habitat*". Furthermore, the probability of larvae dispersing distances greater than 200 km and thus between North Sea management areas is very low (Scottish Government 2023; Natural England, Cefas & JNCC 2023; Wright et al 2019). The different North Sea management areas are all reproductively isolated from each other and exhibit different population dynamics (Natural England, Cefas & JNCC 2023). Natural England advises there is a lack of evidence supporting statements that the closure of the SA4 fishery would result in any significant increased

	abundance of sandeel in SA1r through spillover effects. Therefore Natural England disagrees with the applicant's assessment. Natural England note that this means there are additional uncertainties about the likelihood that the proposed measure can compensate for impacts on English SPAs.
Evidence of effects of sandeel fishery closure on seabird populations	
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Quantifying increases in the productivity of kittiwake, guillemot, razorbill and puffin</u>** The benefits to seabirds predicted by the applicant from the closure of the SA4 fishery depend heavily on the relationships between sandeel biomass and seabird productivity described in the Fisheries Compensatory Measures Evidence Report and represented by graphs in Figures 1.7, 1.10, 1.13 and 1.16 for kittiwake, guillemot, razorbill and puffin, respectively. These graphs depict a relationship between sandeel total stock biomass in SA4 (from ICES data) and annual productivity rates for these species from the Isle of May (CEH data). The lines of these graphs were described mathematically and this mathematical relationship was then used to predict increases in productivity at SPAs in SA4 from closure of the SA4 fishery. These results were then in turn used to predict increases in adult birds by applying standard survival rates for immature age classes, which are presented in Tables 1.5, 1.9 and 1.15 for kittiwake, guillemot and puffin, respectively. We note there is not a similar table for razorbill. The results are repeated in AEI03 Section 2 and further extrapolated to all impacted SPAs. Natural England note that the relationships described and used to predict benefits of the proposed measure are based on simple correlation. Therefore, there are uncertainties that have not been factored into the assessment. The inherent difficulty of quantifying the effects of fisheries management on seabird demography is well documented (Cury et al 2011; Edmonds et al 2021; Frederiksen et al 2007; Furness & Tasker 2000; McGregor et al 2022; Natural England, Cefas & JNCC 2023; Püts et al 2023; Rindorf et al 2000; Sherley et al 2018; Scottish Government 2023; Searle et al 2023; Sydeman et al 2017). The complexity of the relationship between fisheries management and seabird productivity is well represented in Figure 27 in the Scottish Government's (2023) evidence review. Natural England note that the same data were included in a comprehensive, peer-reviewed study by Searle et al (2023) on the impacts of the partial fishery closure in SA4 on seabird productivity in the area and that the conclusions by Searle et al (2023) appear to not corroborate those presented by the applicant.

	Searle et al (2023) used age-structured ICES data on sandeel biomass in SA4 and data on seabird productivity from colonies in and near the area, including the Isle of May. The study found no evidence of effects of the sandeel fishery on productivity of guillemot or puffin. While they did find a significant effect of the fishery on kittiwake productivity, they assessed this increase as 'marginal' and noted wide uncertainty around the attempt to quantify it and to determine causality, stating that the limitations of the study should "*promote caution when interpreting our results quantitatively in terms of any potential impacts of fisheries management on seabird breeding success*", further noting that "*it is not possible to pinpoint the causation of the observed changes in breeding success solely on the operation and subsequent closure of the sandeel fishery*." Neither Daunt et al (2008) nor Frederiksen et al (2008), also looking at Isle of May data, found a significant relationship between sandeel abundance and guillemot productivity on the Isle of May. The peer-reviewed scientific evidence therefore does not support either the method used by the applicant to quantify the impacts of the proposed measure on seabird productivity, or the assumption that there is a significant relationship between fisheries management in SA4 and productivity of guillemot or puffin in the area. The relationship between fisheries management and seabird productivity is far more complex and difficult to predict than that depicted by the applicant for these species. Many factors other than sandeel biomass affect seabird productivity, including distribution, availability and age-structure of sandeels, distribution and availability of other prey species, abundance of other predators of sandeels, environmental conditions including climate change, seabird colony size and age structure, disturbance and predation at colonies (Bennett et al 2022; Hilborn et al 2017; McGregor et al 2022; Scottish Government 2023; Searle et al 2022; Searle et al 2023; Sherley et al 2018; Sydeman et al 2017). Searle et al (2023) concluded that "*whilst our results suggest a beneficial effect of reduced forage fishery activity on kittiwake breeding success, the realisation of any benefit will be heavily mediated by other aspects of the species' ecology and local environment, including climate change and other anthropogenic stressors*." Natural England advise there is not the evidence to have confidence in the applicant's quantification of predicted benefits of the proposed measure via productivity increases in kittiwake, guillemot or puffin populations.

AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Quantifying increases in the survival of kittiwake, guillemot, razorbill and puffin</u>** The benefits to seabirds predicted by the applicant from the closure of the SA4 fishery depend heavily on the relationships between sandeel biomass and seabird adult survival described in the Fisheries Compensatory Measures Evidence Report and represented by graphs in Figures , 1.6, 1.9, 1.12 and 1.15 for guillemot, razorbill and puffin, respectively. These graphs depict a relationship between sandeel total stock biomass in SA4 (from ICES data) and annual adult return rates, used as a proxy for adult survival, from the Isle of May (CEH data). The lines of these graphs were described mathematically and this mathematical relationship was then used to predict increases in the numbers of adult birds at SPAs in SA4 from closure of the SA4 fishery, which are presented in Tables 1.3, 1.7, 1.11 and 1.13 for kittiwake, guillemot, razorbill and puffin, respectively. The results are repeated in AEI03 Section 2 and further extrapolated to all impacted SPAs. Natural England note that the relationships described and used to predict benefits of the proposed measure are based on simple correlation and that there are therefore uncertainties that have not been factored into the assessment. The inherent difficulty of quantifying the effects of fisheries management on seabird demography is well documented (Cury et al 2011; Edmonds et al 2021; Frederiksen et al 2007; Furness & Tasker 2000; McGregor et al 2022; Natural England, Cefas & JNCC 2023; Püts et al 2023; Rindorf et al 2000; Sherley et al 2018; Scottish Government 2023; Searle et al 2023; Sydeman et al 2017). The conclusions of the similar simple correlation used by the applicant to describe the relationship between sandeel biomass and seabird productivity were not supported by peer-reviewed scientific evidence (Searle et al 2023, see previous comment). Seabird survival is affected by many different factors, such as that are not taken into account in this reductive assessment. We were unable to find peer-reviewed scientific evidence to support the applicant's description of the relationship between sandeel biomass and adult survival of guillemot, razorbill or puffin, nor was any such evidence identified by recent comprehensive reviews of the evidence by the Scottish Government (2023), Natural England, Cefas and JNCC (2023) or McGregor et al (2022). While there is some evidence of a relationship between sandeel biomass and kittiwake survival in Shetland (Oro & Furness 2002) and between fisheries activity and kittiwake survival on the Isle of May (Frederiksen et al 2004), these relationships were not quantified.

	Data on adult survival of seabirds is relatively scarce and the relationship between fisheries management and adult survival is even more complex and difficult to predict than the relationship between fisheries management and seabird productivity (see previous comment) due to additional uncertainties around diet and foraging movement of seabirds during the non-breeding season and the ability of adult seabirds to buffer impacts of prey on survival by abandoning breeding attempts (Oro & Furness 2002; McGregor et al 2022; Scottish Government 2023; Sydeman et al 2017). These difficulties are acknowledged by the applicant in the Fisheries Compensatory Measures Evidence Report: "*demonstrating a relationship between sandeel total stock biomass and adult survival of seabirds is difficult, in part because few studies have long-term data on adult survival rates of seabirds, but also because survival is likely to be buffered compared to breeding success (long-lived birds protect their survival by abandoning breeding effort when times are bad)*." Natural England advise there is not the evidence to have confidence in the applicant's quantification of predicted benefits of the proposed measure via increases in adult survival in kittiwake, guillemot, razorbill or puffin populations. In AEI03 Section 2, the applicant claims that their assessment "*demonstrates that reduction/removal of fishing pressure and thus increase in TSB and its impact on adult survival alone is enough to immediately offset the impacts of the project*". Natural England does not agree that the applicant has demonstrated that the impacts of the project can be compensated for, through predicted increases in adult survival.
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Location and spatial scale of proposed closure</u>** Natural England note that the existing 'closed box' within SA4 includes the areas closest to the impacted seabird colonies. In the Fisheries Compensatory Measures Evidence Report, the applicant states that "seabirds in SA4 are likely to rely on sandeel abundance across a large part of the area, not only the area inside the box closed to fishing". However, Natural England note that sandeels within SA4 beyond the existing closed box are likely outside of the regular foraging range of kittiwake, guillemot, razorbill and puffin breeding at most colonies along the Scottish coast (Scottish Government 2023) and certainly beyond the foraging range of English colonies. Additionally the Scottish Government's (2023) evidence review concluded that extending the SA4 closure would be unlikely to provide benefits to seabirds unless foraging ranges were to increase or closures were to affect availability of sandeel within the existing closed area.

	The applicant cites recent modelling work done by Natural England, Cefas & JNCC (2023) as evidence that sandeel fishery closures will result in increases in sandeel biomass. However, it is important to note that this model was conducted for closure of sandeel fisheries in all UK waters of the North Sea, not for one management area. The scale of closures is likely to be key to their success at increasing sandeel abundance – large scale closures are more likely to be effective than smaller, fragmented ones (Püts et al 2023). Natural England therefore advise that there are uncertainties surrounding predicted benefits to sandeel and seabird populations linked to the location and spatial scale of the proposed measure.
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory Measures Evidence Report	**<u>Quantifying benefits to seabirds at all impacted SPAs</u>** Natural England note that the applicant has extrapolated their quantifications of the relationships between sandeel biomass and seabird productivity and adult survival on the Isle of May (see previous comments) to all seabird SPAs within SA4 (in the Fisheries Compensatory Measures Evidence Report) and further, to all impacted seabird SPAs (in AEI03 Section 2), and that these extrapolations underpin their assessment of the sufficiency of the proposed compensation measure. Natural England note that Searle et al (2023) found "*considerable variation*" in the relationship between kittiwake breeding success and the fishery closure between colonies with connectivity to the SA4 fishery. Furthermore, we note that geographic variation in seabird diet and demographics is well documented (Searle et al 2022; Scottish Government 2023). Natural England therefore consider that there are considerable uncertainties surrounding the appropriateness of applying demographic data from the Isle of May to colonies in other impacted SPAs. This extends uncertainties to likelihood of the proposed compensation measure sufficiently compensating for the predicted impacts of the project.
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures Derogation Case: Fisheries Compensatory	**<u>Benefits to seabirds at impacted English SPAs</u>** Natural England note that the potential benefits of the proposed compensation measure to impacted English SPAs are not clear, in particular with respect to the Flamborough and Filey Coast SPA (FFC SPA). Seabirds breeding at this SPA have been shown to forage mainly in the Dogger Bank, which is in SA1, not SA4 (Carroll et al 2017; MacArthur Green 2022; Natural England, Cefas & JNCC 2023; Wischnewski et al 2017). In the Fisheries Compensatory Measures Evidence Report, the applicant admits that it is "*not possible to apply the same evidence of changes in sandeel TSB and seabird demography to the FFC SPA, as the majority of individuals will be foraging within SA1r, not SA4*". However, the applicant states that the FFC colony would benefit due to "*increase in the*

Measures Evidence Report Non-breeding season apportioning for guillemot at Flamborough and Filey Coast SPA – Note for Natural England	*number of recruits from colonies in SA4 available to immigrate in to the FFC SPA*" Natural England note that there are high levels of uncertainty regarding the likely numbers of birds recruiting into Flamborough and Filey Coast SPA from other colonies that would result from population increases at those other colonies. The applicant states that kittiwake tend to recruit away from their natal colony. However, a review of kittiwake ringing and colour-ringing studies (O'Hanlon et al 2021) found that, while natal dispersal rates were high, they were rarely quantifiable and varied, and the majority (79%) recruited into colonies within 100km of their natal colony, with recruitment rates also higher in colonies with high productivity. Coulson (2016) found that razorbill were 83% philopatric (recruiting into their natal colony), puffins 50%, and that levels of philopatry in guillemot varied between 42% and 58%. He also states that philopatry probably varies within species and is affected by environmental conditions and population pressures and is thus difficult to predict. It will therefore be problematic to advise confidently that the proposed measure will benefit seabirds at FFC SPA. The applicant further states that, as "*the predicted impacts on the FFC SPA for both* [kittiwake and razorbill] *are extremely small from the Project alone, the proposed sandeel fisheries compensation measures are very likely to be sufficient to also provide adequate compensation to the FFC SPA*". Natural England note that the predicted annual impacts to FFC SPA in the applicant's 'Scoping Approach' impact assessment come to 58 kittiwake and 19 razorbill. Natural England do not consider these impacts to be "*extremely small*" and further note that the impact assessment would also have predicted annual mortality of 796 guillemot at FFC if the Natural England method of apportioning had been used. Natural England do not believe that the applicant has demonstrated that they can definitely compensate for the predicted impacts to seabirds at FFC SPA.
AEI03 Section 2 Sufficiency and Immediate Benefit of the Sandeel Compensation Measures AEI02 Section 3 Implementation, Monitoring and	**<u>Timing of benefits from proposed measure</u>** In AEI03 Section 2, the applicant claims that "*the removal of fishing pressure from the sandeel fishery from closure, leads to an immediate increase in the Sandeel TSB"* and "*the core premise of this compensatory measure is that the removal of fishing pressure will provide an immediate increase in sandeels available to seabirds".* in AEI02 Section 3, the applicant states that *"this increase in sandeel TSB requires only the cessation of fishing in SA4 and does not rely on the recovery of*

Adaptive Management	*the sandeel population. The 10% required is provided by the TAC not taken. Timing is therefore not an issue*." Natural England note that these statements appear to contradict the statement made by the applicant in the original Fisheries Compensatory Measures Evidence Report that although "*sandeel abundance can recover after the closure of sandeel fishing […] this may not occur immediately after closure*". Natural England note that previous closures have not been shown to definitely result in increases of the number of sandeels available to seabirds (see comments on 'Effects of past closures on sandeel populations'). Natural England also note that the fishery TAC is likely to be comprised largely of age 1 sandeels (Scottish Government 2023). Given that the fishery TAC is taken in summer and that seabirds tend to shift to foraging for smaller sandeels during the breeding season, this means that the sandeel fishery and seabirds in SA4 are likely to be targeting different age classes of sandeel (Scottish Government 2023; Natural England, Cefas & JNCC 2023). Reduction in fishing pressure is therefore most likely to lead to increased abundance of age 1 sandeels (Scottish Government 2023). This is also acknowledged by the applicant in the Fisheries Compensatory Measures Evidence Report. Natural England note that the evidence shows it is the abundance of age 0 sandeels that is most likely to have positive effects on seabird demographics. Searle et al (2023) found a positive association between breeding success of kittiwake, guillemot and puffin and the abundance of age 0 sandeels, but no relationship between breeding success and age 1 sandeels. Harris & Wanless (1997) found a significant positive association between abundance and quality of age 0 sandeels and kittiwake breeding success. Oro and Furness (2002) also found a relationship between age 0 sandeels and kittiwake adult survival and breeding success. Natural England therefore believe that there are high levels of uncertainty surrounding the applicant's claim that reduction in TAC will lead to immediate benefits to seabird populations. Natural England also note that there is uncertainty surrounding the future relationships between sandeels and seabird demographics in the North Sea, linked to the likely impacts of climate change on sandeel populations in the North Sea (see previous comment on 'Predicting effects of future closures on sandeel populations'). The dependency of many seabird populations on sandeel appears to be reducing due to reductions in their availability, size, and calorific content (Scottish Government 2023, Wanless et al 2018). Natural England therefore consider that there are uncertainties surrounding the potential of the

	proposed measure to deliver benefits to seabirds throughout the lifetime of the project.

Annex C Ecological likelihood of success of proposed compensation measures: other proposed compensation measures

Document ref	Comment
AEI02 Section 1 Introduction AEI02 Section 3 Implementation, Monitoring and Adaptive Management	Natural England note that none of the other compensation measures proposed for kittiwake, guillemot, razorbill or puffin are intended to be sufficient to compensate for the predicted impacts of the project without the sandeel fishery measure. Natural England note that none of these proposed measures (rat eradication on Handa, wardening at Dunbar Castle, rat eradication on Inchcolm as a contingency measure) could be reliably predicted to compensate for the impacts of the project on these species. Natural England note that rat eradication has not been assessed to be a suitable compensation measure for kittiwake, guillemot or razorbill in the North Sea (McGregor et al 2022), that neither of the two islands proposed for rat eradication were identified as suitable candidates by either Furness et al (2013), McGregor et al (2022) or Stanbury et al (2017). Furthermore, Natural England consider that any potential benefits from these proposed compensation measures would be unlikely to compensate for predicted impacts on English SPAs.

Annex D Confidence in ecological likelihood of success of the proposed compensation measures

Natural England do not agree that the compensation measures proposed can be confidently expected to offset the predicted impacts to English SPAs or the SPA network. Natural England note that the derogation case rests almost entirely on the proposed measure to close or manage the sandeel fishery in SA4. The applicant has stated that they have "*provided robust evidence and data to demonstrate that the compensatory measures proposed will be effective, are sufficient and can be secured and implemented*". Natural England do not agree that this measure can be relied upon to fully compensate for the predicted impacts of this project, which are considerable. Natural England note that the ecological benefits of this measure predicted by the applicant are based on several key assumptions:

a) that closing or managing the sandeel fishery in SA4 would result in increased abundance of sandeels in the area
b) that increased abundance of sandeels in the area would lead to quantifiable increases in the productivity and survival of kittiwake, guillemot, razorbill and puffin breeding at colonies within foraging range, thereby leading to increases in the abundance of these seabird species that would compensate for the predicted impacts
c) that these benefits would extend to seabirds at all impacted SPAs
d) that these benefits would be immediate and persist for the duration of the project lifetime

Natural England advise that there are considerable uncertainties associated with each of these assumptions, and that many of the claims made by the applicant are not supported by peer-reviewed scientific evidence. While Natural England agree that closure of the SA4 sandeel fishery would likely lead to some benefits to seabird populations, we do not agree that these predicted benefits can be quantified with the certainty stated by the applicant. As such, with current information supplied we cannot agree that the proposed measure would be sufficient to compensate for the predicted impacts of the project. We also note uncertainties about the duration of the benefits of the proposed measure and therefore the ability of the measure to deliver compensation throughout the project's lifetime. Natural England further note uncertainties around the potential benefits of this measure to seabirds at all impacted colonies. Therefore at this time we do not agree that the predicted benefits will be sufficient to compensate for impacts on seabirds breeding at English SPAs.

The level of uncertainty associated with the success of this measure is such that Natural England advise compensation ratios would need to be set very high to maximise the chances of success, and that any implementation of the measure would need to include appropriate long-term monitoring and adaptive management. We note, however, that options for scaling up the proposed compensation measure are limited, and that the applicant has provided no options for adaptive management for this measure.

Natural England also note that there are ongoing consultations on the closure of sandeel fisheries in English and Scottish waters, by Defra and the Scottish Government respectively, and that the outcomes of these consultations may affect the logistical feasibility of implementation of the project's key proposed compensation measure.

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NatureScot

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27 October 2023

Our ref: CNS REN OSWF Berwick Bank – Derogation

Dear Rebecca,

BERWICK BANK OFFSHORE WIND FARM - ADDITIONAL ENVIRONMENTAL INFORMATION

ADDENDUM TO THE DEROGATION CASE (AEI02)

SUPPLEMENTARY INFORMATION TO THE DEROGATION CASE (AEI03)

Thank you for consulting NatureScot on the addendum to the derogation package submitted by Berwick Bank Wind Limited (the applicant). This response incorporates advice with respect to the addendum to the derogation case (AEI02) as well as the supplementary information package (AEI03).

Advice with respect to the additional information addendum to the Offshore EIA Report and RIAA (AEI01) is provided separately, please see our response letter dated 03 October 2023.

Background

The derogation package relates to the offshore wind farm proposal comprising a project design envelope approach of up to 307 wind turbines (tip height 355m), an installed capacity of 4.1 GW and proposed 35-year operational lifetime. The assessment presented by the applicant and our own assessment predicts adverse effects on site integrity to Special Protection Areas (SPAs) therefore requiring the consideration of a derogation package.

Due to the scale of predicted ornithological impacts, we previously objected to this proposal – please see our response letter dated 31 March 2023. This objection was irrespective of the derogation package.

We provided advice to the original derogation package in our response letter dated 03 April 2023. Much of our previous advice remains applicable. In this response, we update our advice as outlined below, taking account of the additional and / or supplementary information submitted.

NatureScot advice

We are unable to conclude with confidence that the closure of the SA4 sandeel fishery would provide sufficient compensation over the lifetime of the proposed development to ensure the overall coherence of the UK National Site Network. This assessment has been informed by the Scottish Government's review of the scientific evidence on the potential effects of sandeel fisheries management on the marine environment[1].

Understanding what this uncertainty means for the coherence of the UK National Site Network is complex and would require considerable additional work. This work would also require liaison with the other SNCBs, particularly JNCC, to understand the effects of adverse impacts across the UK National Site Network. Further work on this would need to be commissioned and resourced. Both monitoring and adaptive management measures are proposed – while this is an accepted approach to address inherent uncertainties around compensatory measures there are unlikely to be any alternative measures to the closure of the sandeel fishery at the scale required.

We therefore continue to object to this proposal having reviewed the additional information and do not believe that further analyses, by the applicant, can resolve the inherent uncertainties in quantifying the benefits to those seabird species predicted to be adversely impacted by the proposed development. We also continue to advise that the colony-based measures are insufficient on their own.

We continue to support the development of offshore wind and other renewable energy production as we recognise the urgency required to combat the climate emergency and twinned nature crisis. A development at this scale in this location, combined with the potential that the proposed compensation measures may fail to address the predicted impacts, could in our view lead to continuous decline for impacted seabird populations.

Further information and advice

We provide further advice on these aspects based on each of the documents provided in the addendum (AEI02) and supplementary (AEI03) information packages, as described below:

- Advice on the addendum covering sections 1 – 7b is provided in Appendix A.
- Advice on the supplementary information covering section 1-5 is provided in Appendix B. We do not provide any advice in relation to Torness Power station.

We hope this advice is helpful. Please contact Karen Taylor (karen.taylor@nature.scot / 0131 316 2693) or Caitlin Cunningham (caitlin.cunningham@nature.scot / 01738 458 531) for further advice.

Yours sincerely,
[Redacted]

Nick Halfhide
Director of Nature and Climate Change

Cc Natural England, JNCC.

[1] https://www.gov.scot/publications/sandeel-consultation-review-scientific-evidence/

Appendix A – Berwick Bank Offshore Wind Farm- Addendum of the Derogation case – AE102

As part of the additional environmental information consultation, Berwick Bank Offshore Wind Farm Limited (the applicant) have provided an addendum to the derogation case. We have reviewed the eight documents provided within AEI02 sections 1-7b and provide advice below.

Section 1 - Introduction

We have no substantive comments to make with respect to this document.

Section 2 - Gannet Compensation (without prejudice)

This document has been provided following our conclusion (in our response letter dated 31 March 2023) that the proposed wind farm is likely to have an adverse effect on site integrity for a number of SPAs for which gannet is a qualifying feature. It is provided without prejudice, to inform consultation responses for consideration as part of the Appropriate Assessment (AA) to be undertaken by Marine Directorate, as Competent Authority. The applicant continues to advise they do not consider there to be adverse effect on site integrity to gannet as a qualifying feature at any SPA.

Reduction of the gannet ('guga') harvest on Sula Sgeir was discussed during the pre-application phase. During this time we advised of the cultural significance of this practice to the community of Ness, emphasised the need to engage with those who undertake the harvest and highlighted ongoing uncertainty around HPAI-related impacts.

NatureScot's role

The derogation in the Wildlife and Countryside Act 1981 (Section 16 (2)(a)) makes specific provision for the granting of a licence for the traditional hunting of gannets on the Island of Sula Sgeir to provide food for human consumption. In considering an application for a licence for this activity, NatureScot, as the licensing authority in Scotland, takes into account several factors, including whether the hunt is sustainable, in that it is not having an adverse effect on the conservation status of the species concerned, namely gannets.

To be clear, the exemption which allows for the gannet ('guga') harvest to be licenced is included in legislation, as such NatureScot is not able to dictate or demand reduction in licensable limits for the purpose of offsetting impacts from offshore wind development.

Section 3 - Implementation, Monitoring and Adaptive Management

This document has been significantly updated to explain how an adaptive management framework approach could be used to better manage uncertainty. This is an especially complex area and the applicant has made considerable effort to address issues raised around uncertainty in implementing compensation measures through this adaptive management framework.

The value of such a framework is in providing a clear and consistent approach to describing and testing the adaptive management potential of the various proposed compensatory measures. The text used to populate the framework for each measure is mainly drawn from the original derogation package documents and does not address our previous advice (letter dated 03 April 2023). This is critical with respect to:

- Colony measures for kittiwake at Dunbar Castle where fundamentally, adaptive management here is irrelevant if there is no measurable disturbance effect, and this has yet to be demonstrated.
- Concerns around potential for rat eradication on Handa to provide compensation for cliff-nesting species, in particular kittiwake and guillemot.

- Lack of detail on monitoring design and approach to data analysis. These aspects are central to understanding, and where possible, quantifying cause and effect relationships at relevant and specific spatial and temporal scales. This is critical in underpinning an adaptive management approach, to ensure that any effects observed can be correctly attributed (or not) to specific management measures.
- Proposed groups to oversee the implementation of adaptive management measures – we welcome the consideration given to this but indicate further discussion and agreement would be required regarding oversight groups if the development is consented.
- We also note that in terms of the proposed sandeel compensation measure, there is no adaptive management principle that can be applied – the closure will either apply or not.

In reviewing the framework, we note:

- Figure 1 (section 1.4.4) illustrates the proposed overall approach to implementation of the derogation package. It is depicted as essentially linear, rather than iterative. In particular, there would presumably be feedback between the Strategic Stakeholder Group (SSG) and the stakeholder groups overseeing the individual measures. Noting further consideration will be required in the event of contingency measures and if any further stakeholder representation will be required at either the strategic or individual compensation stakeholder group.
- Flow diagrams are used to summarise how information will be used to make decisions and implement alternative management actions, but these do not capture the cyclical and iterative nature of an adaptive management approach (e.g. in Figures 3 and 5 there are no linkages between boxes for continued monitoring and the progress indicators).
- Figure 4 (section 2.4.5) does not address what would happen should eradication not be achieved during the first winter. Similarly, it does not consider what happens next if the eradication is found to have failed during the initial monitoring period.
- The suggested progress indicators, including the 'early indicators' set out at section 3.1, are very high level and (with exception of Handa being rat free after 2 years) it is unclear how they would be used in practice to inform decisions on management measures.
- Overall, the information presented within the framework for Handa is very high level. For example, when describing uncertainties around population recovery, seabirds are referred to collectively, with no distinction made between ground/boulder/cliff nesting species. This is at odds with the precise numerical targets for population increases for each of four species set out under objectives (e.g. kittiwake 7,498 to >11,838).
- Uncertainties around feasibility of eradication and maintenance of rat-free status on Handa are acknowledged. A new management alternative '*expansion of the eradication to include other predatory mammals if identified*' is proposed but there is no evidence presented to indicate that it is likely that other relevant predatory mammals are currently present or limiting population growth.
- The potential impact of HPAI has not been considered in relation to cull of gannet chicks at Sula Sgeir. Under monitoring and progress indicators (section 2.6.3) it is proposed that monitoring of adults, juveniles and chicks would be annual in years 1 to 5 and thereafter triennial; no explanation is provided for this reduction on monitoring frequency.

If the Scottish Ministers are minded to consent this development, we would wish to work further with both Marine Directorate and the applicant to ensure that the adaptive management principles for all required compensation measures are clearly considered with identified steps to implement adaptive measures.

Section 4 - Dunbar Colony Measures

This document provides new information including an assessment of the potential net benefit to the Dunbar kittiwake colony, provided as a disaggregation of the non-SPA apportioned predicted impacts (section 1.2).

Approximately 0.15% of predicted kittiwake mortalities were apportioned to the Dunbar Harbour Seabird Monitoring Programme (SMP) subsite during the breeding season, with 0.0% during the non-breeding season. This results in a predicted mortality for adult kittiwakes at the Dunbar Harbour SMP subsite between 0.7 and 1.1 per annum, leaving a potential net benefit of 22 birds per annum (reduced from 23) from the proposed measure. Whilst useful, this does not materially change our previous advice, that the scale of benefits from the proposed measure at Dunbar (22 net birds per annum) will provide very limited compensation for kittiwakes when set against the total projected annual mortality impacts of the proposed development.

Further information has been provided in respect of disturbance at Dunbar in section 1.3. We welcome the effort by the applicant to try to obtain information on the locations of individual productivity plots within the Dunbar Coast SMP site from BTO and we note that this has been unsuccessful to date. The Dunbar Coast SMP site data is used in the Searle et al. (2023) analyses but excludes the productivity data collected separately by the East Lothian Council Countryside Rangers at Dunbar Castle North harbour entrance.

Figure 1.3 compares the available productivity data between 1998 and 2021 for Isle of May, Dunbar Coast SMP site and the East Lothian Council productivity plot at Dunbar Castle North harbour. It is summarised that '*Both Dunbar colonies show lower productivity than the Isle of May from 2014 onwards (Figure 1.3), which supports the proposition from Searle et al that factors additional to prey availability may be affecting kittiwakes at Dunbar*'. However, there is no data from the Dunbar Castle North harbour plot after 2015. Furthermore, it is evident that there have been periods when productivity at Dunbar has been higher than at the Isle of May, as shown in Figure 1.3.

We repeat our original advice (letter dated 03 April 2023) - the fundamental weakness in the evidence base for the Dunbar measure is the presumption that this lower productivity since 2014, which is seen across multiple monitoring plots within the Dunbar Coast site, is attributable to disturbance.

Section 5 - Handa Feasibility Study

This document provides new information on the rat eradication at Handa, including a full feasibility study to address concerns around the use of a mainland rat-free buffer and an assessment of overall effectiveness and feasibility of the measure.

Our previous advice (letter dated 03 April 2023) indicated that whilst rat eradication on Handa would likely benefit puffins and possibly razorbills at some locations, evidence for a positive effect on cliff-nesting species (kittiwake and guillemot) is weak and largely speculative.

The additional information provided does not change this overall conclusion. Again, we reiterate that the location of the proposed compensation measures on Handa is at a considerable distance from the development and its impacts.

If this development is consented and if this measure is taken forward, we advise:

- The risk of reincursion is likely given Handa's proximity to the mainland and its history of reinvasion following previous eradication attempts. As documented in section 3.2, several other species of invasive predator have previously reached Handa – likely by swimming – demonstrating that an incursion by this route is possible or even likely. Thus, if this measure is

taken forward, we support the inclusion of a mainland buffer zone for long-term control. We recommend further consideration is given to the practicalities of this approach over the long-term, providing an indication of the timescale / level of support available to stakeholders to maintain biosecurity efforts permanently.

- The choice of primary bait (coumateralyl) has not been used in a UK based eradication before but would have benefits above other options if it can be proven effective in field trials. This would require Handa's rat population not to be resistant to it.
- Section 6.6.2 notes that '*A24 multi-kill traps will also be deployed at high risk or difficult access sites such as cliffs, stacks, islets and remote sites*'. The RSPB Biosecurity for LIFE report of the recent A24 trial on Handa, currently in draft, suggests limited success. Amendments to the baiting on the A24 traps could possibly help improve success – recording any results of this would be useful for future comparison. Ultimately, reliance on the A24 traps for eradication should be limited if this measure is taken forward.
- Table 10 is missing pygmy shrew, which would be at risk of secondary poisoning from invertebrates that are affected by the rodenticide bait.
- There is little evidence of stakeholder consultation, including landowner support, for what would be a large and challenging project likely requiring considerable support from Scottish Wildlife Trust (SWT) and Scourie Estates, with the latter important for land access / accommodation. It is planned to have the operation base on Handa, which seems logical considering short daylight hours and difficulty of access in winter. However, there is no mention as to whether the landowner is agreeable to this.

Section 6 - Inchcolm Feasibility Study

This document includes new information provided on the feasibility of black rat eradication on Inchcolm, which has been put forward as a secondary compensation measure. It is unclear whether agreement has been reached with the landowners and Historic Environment Scotland (HES).

Impact on seabirds

No definitive evidence is presented that black rats are predating on seabird eggs and chicks on Inchcolm. Although there is evidence that rats feed from marine sources, this cannot be isolated to seabird predation, potentially arising from scavenging or other sources instead.

Section 3.1.3 documents the kittiwake population on Inchcolm, which has fluctuated considerably over the past 40 years. The population was first recorded in 1991, increasing to a peak of 190 nests in 1995 before declining in subsequent years and recently increasing again since 2021 – all whilst black rats were present. This suggests that other factors may be limiting the kittiwake abundance on Inchcolm. No evidence has been presented to indicate changes to the black rat population that coincide with the kittiwake population trends.

Appendix B Field Study Report misidentifies kittiwake in the images on page 24 (PDF page 145), with both photos showing nesting fulmar instead. Some of the other images with potential kittiwake habitat underlined in red show significant amounts of vegetation on the cliffs – however, kittiwakes usually favour bare cliff ledges. Thus, we question whether these images, and indeed the overall Field Study Report, overestimate the suitable habitat for kittiwakes. Section 7 of the Field Study Report assumes high breeding productivity, particularly for kittiwake at 0.89. We understand that this is taken from the known productivity at the Isle of May. Productivity can vary significantly across years and could be lower whilst the colony at Inchcolm remains at low density / is perhaps more vulnerable to predation by gulls.

Section 5.3.2 presents estimates of increased seabirds resulting from the removal of black rats from Inchcolm. Some of these projections seem unrealistic including '*up to 420 additional pairs of breeding guillemot and/or razorbill*', even though no guillemots have been recorded regularly on Inchcolm.

If the development is consented and this measure is taken forward, expected timelines for the projected recruitment of the target seabird species would need to be considered further. Related to this, it is unlikely that puffin recovery could be used as an indicator of a rat-free island within the two-year monitoring period as per section 7.8, as puffin recovery can take many years.

Gull predation

Section 5.2 acknowledges the predation risk to the target seabird species from gulls but does not address whether or to what extent the threat of gull predation may prevent target seabird species from recolonising in the absence of rats – particularly in the early stages of recruitment when new breeders would not have safety in numbers. Moreover, no information is presented on the impact the rat eradication is likely to have on the abundance and distribution of gulls on Inchcolm.

Seabird attraction and vegetation management

Further consideration should be given to the proposed techniques to be explored as part of the adaptive management to improve conditions for recruitment and population growth of target seabirds, including:

- Artificial ground cover – limited evidence is provided for this technique's success and further consideration should be given to exact locations and timelines of installation.
- Vegetation management – including, but not restricted to tree mallow, should be considered here as a significant issue for puffin breeding on the Forth Islands and this requires ongoing management to prevent puffin habitat from becoming smothered. Consideration of other vegetation control measures may be needed.
- Paint simulating guano – any negative impacts should be explored further, i.e. toxins in paint and damage to rocks, and discussed with HES / the landowners.

Eradication

During the eradication phase itself, it is proposed that bait stations will be checked *'a minimum of every two days, where safe access is available'*. It is unclear whether eradication staff will stay overnight on the island during this phase, or whether they would be reliant on boat transport daily. For the former, discussion and agreement will need to be sought with HES / the landowners. If the latter is proposed, this could pose a risk to the regular replenishment and monitoring of stations due to the increased likelihood of winter weather preventing access for prolonged periods.

Biosecurity

Inchcolm's proximity to the mainland is within the known swimming distance for brown rats. Furthermore, Inchcolm receives a high number of visitors through frequent boat trips. It is therefore a very real risk that a brown rat incursion may occur. Indeed, the current absence of brown rats on Inchcolm does not mean that no brown rat has arrived – it remains possible that a lone brown rat (male or non-pregnant female) incursion may have happened in the past without the species establishing on the island. Thus, a robust biosecurity strategy is critical.

General comments

Further consideration should be given as to whether the presence of breeding grey seals would restrict access to any areas during the eradication phase or whether the eradication poses a disturbance risk to the seals.

In section 11.9, it is stated that '*prospecting storm petrels […] may establish new breeding colonies*'. We advise that it is unlikely that storm petrels would establish on Inchcolm. Although suitable habitat may be available, storm petrels do not breed widely in the Firth of Forth (or east coast of Scotland generally) – a small number of breeding birds has recently been discovered on the Isle of May. Ultimately, it would not be one of the species expected to reap significant benefit from this eradication. Likewise, some of the land birds named (e.g. snipe) do not nest on other rat free islands in the Firth of Forth, and would therefore be unlikely to benefit from this proposed rat eradication.

We highlight the need for regular and responsible stakeholder engagement, as stakeholder support is critical for the feasibility and success of such a project.

Conclusion

Inchcolm is small and close to the Fife shore, with high visitor numbers. It has small numbers of breeding seabirds, with limited options of expansion. **Noting our various concerns above, whilst removal of rats from islands is always likely to be positive for seabirds, the benefits on Inchcolm are likely to be small.**

Section 7a - Updated EIA for Compensation Measures

This document has been updated to address potential disturbance to skuas on Handa and incidental poisoning of non-target bird species on both Handa and Inchcolm, as well as including information on the reduction of the gannet harvest at Sula Sgeir provided on a without prejudice basis. As such the structure has changed slightly but we note limited other amendments have been made.

Incidental poisoning of non-target bird species has been covered for Handa and Inchcolm in paragraphs 78-84 and 174-180 respectively, and we are content this addresses our previous advice. Other UK eradications have previously collected carcasses from non-target species found dead during the eradication for post-mortem to establish whether secondary poisoning had occurred. If the development is consented, it would be useful if this was incorporated for any eradication measures taken forward.

Moreover, we note that targeted mitigation measures will be used on Handa to reduce the risk of loss of great skua eggs or young as a consequence of adults being flushed from nests, through routing transect predator traps and monitoring lines around previously recorded nest sites.

If the development is consented and this measure is taken forward, further detailed measures should be considered, including:

- Using base maps of skua distribution from pre-HPAI to ensure that monitoring work is not deterring birds from settling back at previously used territories / recolonising desirable territories that have been left vacant due to HPAI.
- Care should be taken early in the season when birds are arriving on territories to ensure that (as well as routing monitoring lines away from nest sites), fieldworkers are not commuting through skua territories to reach monitoring sites. Early in the season prior to egg-laying, birds may not be displaying strong territorial behaviour, but could be deterred from settling on territories.
- What actions would be taken if skuas settled in close proximity to monitoring lines.

- What minimum distance from known skua territories would be used in planning monitoring lines.

It is disappointing that the document has not been updated to reflect our previous advice, particularly in relation to:

- Table 5 does not reflect the possible risk of incidental poisoning of gulls at Inchcolm.
- Discards have not been permitted from fishing vessels since 2019. Sandeel is not discarded in the North Sea. This is not appropriate to be considered under the '*beneficial effect on seabirds through an increase in prey resource*' impact, as per paragraph 54.
- Avoiding disturbance to other sensitive species (separate to skuas) e.g. breeding red-throated diver has not been considered for Handa.
- Table 9 does not list the correct key species for Dunbar, which we advised was solely kittiwake and not guillemot, razorbill, or gannet.
- Addition of artificial ledges / overhangs and the removal of debris from kittiwake nests at Dunbar is still considered to be of high benefit and able to deliver the entire projected benefits of the wardening compensation measure, despite our previous advice that these are characterised elsewhere as relatively minor or adaptive elements.
- Table 10 does not list the correct key species for Inchcolm, which we advised were puffin, kittiwake, guillemot and razorbill and not gannet.
- Overestimating the significance of the positive effect of rat eradication at Inchcolm, especially noting the uncertainty in projected seabird numbers.

Please note with respect to Handa, Site of Special Scientific Interest (SSSI) consent will be needed particularly with respect to rodent removal and artificial ground cover and vegetation management, with the latter potentially impacting the maritime cliff qualifying feature. Dunbar Castle lies within the Firth of Forth SSSI – depending on the location of proposed works in relation to the geodiversity features, SSSI consent may also be required.

Section 7b - Updated RIAA for Compensation Measures

This document has been updated to include narrative on the without prejudice case for gannet compensation. As such the structure has changed slightly but in cross referencing we note limited other amendments have been made.

It is disappointing that the document has not been updated to reflect our previous advice, particularly in relation to:

- Discards have not been permitted from fishing vessels since 2019. Sandeel is not discarded in the North Sea. This is not an appropriate effect to be screened in (Table 4, section 4.1).
- There is potential for disturbance impacts on great skua, and we previously requested because of HPAI related impacts that more analyses should be undertaken to help inform the AA with respect to disturbance impacts on this species (Table 7, section 5.2). This has not been done, although we note potential for impact to non-target species has been included in Table 7 (section 5.2).
- Dunbar Castle falls within the Firth of Forth SPA/Ramsar designated for non-breeding wader and waterbird qualifying features – not seabirds. Narrative provided in Table 9 (section 6.2) has not been updated to reflect this mistake.
- With respect to Table 11 (section 7.2), the potential risk of incidental poisoning of gulls, in particular herring gulls from these SPA populations has not been scoped in. This requires more information including numbers, species and likely origins of gulls using Inchcolm in the winter is required to support the AA.

Appendix B – Berwick Bank Offshore Wind Farm - Supplementary information - Derogation case – AE103

As part of the additional environmental information consultation, Berwick Bank Offshore Wind Farm Limited (the applicants) have provided supplementary information to the derogation case. We have reviewed the six documents provided within AEI03 sections 1-5, and provide advice below.

Section 1 - Introduction

We have no substantive comments to make with respect to this document.

Section 2 - Sufficiency and Immediate Benefit of Sandeel Compensation Measures

This document provides new analysis that seeks to address concerns outlined by a number of consultees around the sufficiency of the proposed sandeel compensation measure including timing of benefits. This is an especially difficult and complex topic with significant associated uncertainty and we thank the applicant for the additional work provided.

In our consideration of this uncertainty, we note the following aspects:

- A range of factors affect sandeel abundance with natural mortality considered to be more significant than fishing mortality. Sandeel biomass can fluctuate markedly between years due to variable recruitment and their short lifespan. This is apparent from the ICES stock assessments. Natural mortality is influenced by environmental change (including direct and indirect temperature effects) and trophic regulation by marine predators (predatory fish, marine mammals and seabirds).
- Most of the studies on the impacts of climate change to date have focused on temperature but other effects such as ocean acidification and a reduction in dissolved oxygen levels are likely to play a role, and cumulatively, may significantly impact sandeel abundance and availability to marine predators in the coming decades.
- How much of the surviving 'unfished' sandeel biomass is ultimately taken up in any given year by marine birds (and therefore available as 'compensation') will also be influenced by the availability of alternative prey species and flexibility in different seabird diets. The benefit is likely to be greater for predatory fish.
- Searle et al. (2023) highlights the species-specific nature of responses in seabird demography to changes in forage fish fisheries and the difficulties in teasing apart drivers amongst ongoing environmental change.
- Despite these uncertainties, we agree that maximising abundance and availability of sandeels represents a key mechanism to improve resilience in seabird populations.

We recognise that there is a degree of precaution in some of the assessment steps, as well as the beneficial nature of the proposed compensation, particularly for kittiwake. We are also mindful that the test of 'no reasonable scientific doubt' does not apply in terms of the effectiveness and reliability of proposed compensatory measures.

However, we are unable to conclude with confidence that the closure of the SA4 sandeel fishery would provide sufficient compensation over the lifetime of the proposed development to ensure that the overall coherence of the UK National Site Network is protected.

In addition:

- Understanding what this uncertainty means for the coherence of the UK National Site Network is complex and would require considerable additional work. This work would also require liaison with the other SNCBs, particularly JNCC, to understand the effects of adverse impacts

across the UK National Site Network. Further work on this would need to be commissioned and resourced.

- The existing status of marine bird populations alongside other uncertainties highlighted in our original advice, including as yet unknown population level impacts from HPAI are particularly relevant in this regard (in terms of the implications at both individual SPA and wider network levels).
- Monitoring is proposed to inform adaptive management – while this is an accepted approach to address inherent uncertainties around compensatory measures, there is considerable doubt as to when and if this would be able to determine the relative contribution of the closure over time. Nor do there appear to be viable alternatives of sufficient scale should the measure not confer the anticipated benefits.

We are therefore unable to change our existing position in light of the additional information and do not believe that further analyses by the applicant can resolve such inherent uncertainties.

This assessment was informed by the Scottish Government's review[2] of the scientific evidence on the potential effects of sandeel fisheries management on the marine environment. The review was prepared to support the ongoing consultation[3] on proposals to close fishing for sandeel in Scottish waters for wider ecosystem benefits / resilience.

Section 3 - Consideration of Precaution

This documents sets out the applicants counter argument to some parts of our previous advice (as per letter dated 31 March 2023) and criticises the Scoping Approach that was agreed to during the pre-application period.

Our collective understanding of how offshore wind farm development affects seabirds is continually evolving, as are the tools and methods used to assess these. Earlier this year, we published a suite of marine bird impact assessment guidance notes for use within Scotland. As new and emerging evidence comes forward, we will review the context of such studies against current thinking and update our guidance accordingly to ensure we have a consistent approach in Scotland. This may be different to approaches used in England or elsewhere in the UK.

Importance of the Outer Forth area for seabirds

Since 2013 we have consistently recognised the importance of the Outer Forth area for seabirds and as such have raised concerns, including objecting to offshore wind development in this region due to the scale of adverse in-combination effects. We objected to this proposal due to both project alone and in-combination adverse impacts.

Table 1.1 in section 1.3 provides peak densities for the other consented Forth and Tay wind farms in relation to Berwick Bank. We agree with the statement that densities recorded in Berwick Bank development site are not exceptional for this region. However, viewing density figures in isolation, without also considering the underlying population estimates for the development site is misleading. This is because the scale of development is a key factor – the Berwick Bank development array site is significantly larger than any other wind farm development proposed or consented in the Forth region or even Scottish waters. Please see Table 1 below where we outline the population estimates for key

[2] https://www.gov.scot/publications/sandeel-consultation-review-scientific-evidence/
[3] https://consult.gov.scot/marine-scotland/consultation-on-proposals-to-close-fishing/

species for each of the Forth and Tay developments including Berwick Bank, to contextualise the density figures provided.

Table 1: Population estimates for key species for Forth & Tay developments in comparison to Berwick Bank. Data for Berwick Bank extracted from Appendix 11.1 and Annex H of the original application. Data for Forth and Tay developments taken from:

- ***Seagreen Alpha and Bravo*** *from Ornithological Technical Report for Seagreen Alpha and Bravo (2018): Appendix 2 and Densities taken from Appendix 3. Available from: https://www.seagreenwindenergy.com/_files/ugd/fe5128_b5e1e0e27f4440a5915a4b2dc5a959ec.pdf*
- ***Neart na Gaoithe*** *Densities as provided by Berwick Bank additional information. Neart na Gaoithe Overall Abundance taken from Neart na Gaoithe Ornithology Technical Report (2012).*
- ***Inch Cape*** *Densities as provided by Berwick Bank additional information. Inch Cape Overall Abundance taken from Inch Cape Offshore Ornithology Baseline Survey Report Appendix 11A. Available from: https://www.inchcapewind.com/wp-content/uploads/2020/10/IC01-EC-OFA-002-110-RRP-APE-001_Appendix_11A_Offshore_Ornithology_Baseline_Survey_Report_RevB.pdf*

	Development	*Peak Monthly Density*	*Overall Abundance*	*Month/Year*	*Biogeographic Population*	*% Biogeographic Population*
Guillemot	*Berwick Bank (App 11.1 Annex H Table 26)*	*54.16*	54,752	*Apr 21 S02**	*8,500,000*	*0.64*
	(App 11.1 Table 5.10)	*60.88*	242,168	*Apr 21 S02**	*8,500,000*	*2.85*
	Seagreen (Alpha)	*56.91*	*11,221*	*Jul-17*	*8,500,000*	*0.13*
	Seagreen (Bravo)	*64.74*	*12,536*	*Jul-17*	*8,500,000*	*0.15*
	Neart na Gaoithe	*0.26*	*8,315*	*Oct-10*	*8,500,000*	*0.10*
	Inch Cape	*0.91*	*4,545*	*Jun-11*	*8,500,000*	*0.05*
Kittiwake	*Berwick Bank (App 11.1 Annex H Table 4)*	*20.7*	20,923	*Apr 21 S02**	*8,400,000*	*0.25*
	(App 11.1 Table 5.3)	*13.86*	55,139	*Sep-20*	*8,400,000*	*0.66*

	Seagreen (Alpha)	*61.53*	*12,132*	*Jul-17*	*8,400,000*	*0.14*
	Seagreen (Bravo)	*18.88*	*3,656*	*Jul-17*	*8,400,000*	*0.04*
	Neart na Gaoithe	*36.03*	*2,195*	*Aug-12/Oct-10*	*8,400,000*	*0.03*
	Inch Cape	*15.63*	*2,344*	*Jul-11*	*8,400,000*	*0.03*
Gannet	*Berwick Bank (App 11.1 Annex H Table 37)*	*3.58*	3,622	*Jul-19*	*1,100,000*	*0.33*
	(App 11.1 Table 5.28)	*4.06*	16,143	*Aug-19*	*1,100,000*	*1.47*
	Seagreen (Alpha)	*13.78*	*2,716*	*Jun-10*	*1,100,000*	*0.25*
	Seagreen (Bravo)	*10.89*	*2,108*	*Jun-17*	*1,100,000*	*0.19*
	Neart na Gaoithe	*20.12*	*1,634*	*Apr-10*	*1,100,000*	*0.15*
	Inch Cape	*7.73*	769	*Aug-11*	*1,100,000*	*0.07*

** S02 = figures from second survey*

Consideration of precaution

During the pre-application stage for every development, there is always a cut-off / fixed point after which the assessment approach and tools are set, and no new information or methods are included. The applicant originally targeted a May 2022 application submission date and as such we understand the cut-off date was made some time ago, around autumn 2021. The assessment approach therefore took account of best available evidence and endorsed science at that point in time.

Since then, a number of assessment tools and / or their parameters have been updated, many of which better address uncertainty within the assessment process. The Scoping Approach (A & B) was precautionary as a result of uncertainty in the assessment process at that point in time. For example:

- Available avoidance rates were not endorsed for use with the sCRM model (Bowgen and Cook. 2018, Cook. 2021). This meant the deterministic Band model was used as the primary assessment model. Updates to the sCRM together with updated avoidance rates via Osanlav-Harris et al. 2023 now mean sCRM is the preferred collision risk model.
- Maximum monthly densities were used in the Band model instead of mean density. This addressed the inability of this model to adequately account for variation in the baseline densities (either from variation in the proportions of birds in flight or in the numbers of birds present), which is addressed in the sCRM model. Previous boat based surveys for the original

Forth and Tay wind farms used mean densities with the Band model based on 1-4 surveys per month.

- The matrix approach was used as the primary method to assess displacement due to difficulties the applicant had in running SeabORD at that time. This approach is now considered to lack biological realism, considers mortality of adult birds only and has been replaced by SeabORD which allows some quantification of uncertainty. Until such time that Valljo et al. 2022 has been peer reviewed we will reserve comment on the issues raised by the applicant with respect to SeabORD.
- Studies since the original Forth and Tay developments were assessed (e.g. Daunt et al. 2020) indicate that displacement could increase the extent to which breeding seabirds suffer weight loss. Modelled data from SeabORD (Searle et al. 2014) also suggested that mortality due to displacement may be higher than 1%. For this reason mortality rates were set more precautionary than previously. This is in line with emerging ORJIP evidence due for publication shortly.

Use of macro-avoidance for combining displacement and collision risk

The applicant advocates for the use of macro-avoidance rates as has been done in England (based on Pavat et al. 2023). Gannet and kittiwake are susceptible to both collision risk and distributional impacts (i.e. displacement and barrier effects) from offshore wind farms (Furness et al., 2013; Cook et al., 2014; Dierschke et al., 2016, Peschcko et al. 2020). In Scotland, these impacts are currently considered additively as there is no agreed method to combining them. We are reviewing this recently published work to look at the applicability of using macro avoidance rates (i.e. avoidance exhibited outwith wind farms) to combine with displacement.

However, there are compatibility issues around assumptions and interpretation of how these rates are estimated and applied to data (Searle et al. 2022), and furthermore there is also a limited number of studies (nine for gannet) that have estimated macro-avoidance. We are concerned, due to the small sample size as well as the location of study wind farms (i.e. at some distance from colony SPAs), that the underlying studies are unlikely to be sufficiently representative particularly with respect to variation in seasonality, notably breeding season behaviour. Particularly, as Lane et al. (2020) indicated gannet trip duration and distance varies seasonally, with marked differences during chick rearing, which could impact the number of birds in contact with offshore wind farm developments.

Therefore, at this point in time, as reflected in our guidance, we do not advise applying this approach to the breeding season in Scotland. We will continue to review evidence as it is peer-reviewed and publicly available.

Assessment of kittiwake in the non-breeding season

The requirement to assess impact to kittiwake in the non-breeding season was accepted at the time by the applicant during the pre-application road map meetings and was informed by the mean seasonal peak population estimates. These emphasise the importance of the Offshore Ornithology Study Area for kittiwake during the non-breeding season. Design-based analysis estimated approximately 50,958 birds (95%CI 35,530 - 69,349). In comparison the adjacent Outer Firth of Forth and St Andrews Bay Complex SPA supports 12,020 breeding kittiwake and 3,190 non-breeding kittiwake.

Since the original Forth and Tay wind farm applications/re-applications were assessed, new assessment methods have emerged. Of particular relevance:

- The publication and subsequent adoption of the BDMPS (Furness et al., 2015) as an agreed approach for considering biologically functional non-breeding season populations. This approach supersedes our advice on the original Forth and Tay wind farm applications.

In addition:

- The area is of international importance for kittiwake in the non-breeding season, demonstrated by the designation of the Outer Firth of Forth and St Andrews Bay Complex marine SPA, which includes kittiwake as a non-breeding qualifying feature.

Offshore wind proposals elsewhere is Scotland have similarly been advised of the need to assess kittiwake in the non-breeding season.

Mean seasonal peak for use in displacement

The alternative approach to estimating mean seasonal peak outlined in the supplementary information has, to our knowledge, not been used in any offshore wind farm casework in the UK. This approach considers the maximum of the means rather the mean of the maximums.

The mean seasonal peak for use within the displacement matrix, as set out by the SNCB guidance (2012 and 2022) is the agreed approach for all assessments using the matrix approach. There are inherent issues and uncertainties around the matrix approach. Both boat-based and digital aerial survey data provide a snapshot in time of numbers of birds present on the site and does not take into account turnover. The snapshot alone is therefore likely an underestimate.

Cumulative precaution

Tables 1.7 to 1.9 do not consider the difference between precaution and uncertainty nor do they reflect the different levels of precaution and uncertainty applied at each stage of assessment process. Or that depending on the stage of the assessment, the influence of this precaution (whether it be more or less precautionary) also varies.

For example, some parts of the assessment are more precautionary:

- Additive collision and displacement for kittiwake and gannet as well as use of maximum monthly densities.
- Apportioning - for sub-sites that straddled SPAs all birds were assigned to the SPA; this was a precautionary approach, but in the absence of sub-site boundary files was the only option available.
- PVAs used in assessments do not usually account for ongoing impacts including changes to underlying demographic rates under climatic or other environmental change (Searle et al. 2023).

Other parts are less precautionary:

- Stable age structures derived from PVA modelling generally means that approx. 50% of birds are assumed to be chicks and are therefore discounted from the impacts.
- The PVA model also applies mortality immediately after chick fledging, which is a less precautionary output than if mortality were applied at the beginning of the breeding season, as all breeding birds in the population are allowed to breed before collision/displacement mortality is applied, despite collisions occurring during the breeding season and removing some of these individuals.
- There continues to be high uncertainty around sabbatical rates due to limited evidence.

All of these elements need to be considered collectively. The applicant has deliberately selected elements that benefit their narrative, and ignored the context.

Section 4 - Alternatives and Additionality

This document seeks to address comments made by the RSPB in relation to alternative solutions and additionality. Having reviewed section 4, with respect to our remit, while there is general consensus that the closure of the sandeel fishery - whether across SA4 or Scottish waters - is likely to be beneficial, there remains inherent difficulties in quantifying this benefit regardless of the reason behind such a closure, as outlined above. What this means in terms of the suitability of such a measure for compensation, strategic or otherwise, is not our role. It does, however, spotlight potential risks for forthcoming ScotWind developments.

Section 5 - Analysis of NatureScot RIAA Conclusions

Table 1.1 in this document outlines the annual adult morality figures for those SPAs and features where contrary to the RIAA (Part 3 – SPA Assessment – 9 December 2022), we concluded an Adverse Effect on Site Integrity (or in some instances were unable to conclude No Adverse Effect on Site Integrity), either alone or in-combination for combined displacement and collision mortality, as per our letter dated 31 March 2023.

We have cross-referenced the breeding and non-breeding season impact figures provided within Appendix 11.6 Annex A and Annex B of the original application. We are content with the figures provided in Table 1.1, other than to note that for kittiwake, the figures for the following SPAs have been mixed up:

- Fowlsheugh SPA,
- St. Abbs Head to Fast Castle SPA.

Table 1.2 provides a summary of the total predicted annual mortality figures from the proposed development for SPA qualifying features, which we accept.

Section 6 - Torness Power station

We have no substantive comments to make with respect to this document.

NatureScot
NàdarAlba
Scotland's Nature Agency
Buidheann Nàdair na h-Alba

Rebecca Ross
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

03 October 2023

Our ref: CNS REN OSWF Berwick Bank – Application

Dear Rebecca,

BERWICK BANK OFFSHORE WIND FARM – ADDITIONAL INFORMATION

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCE UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010

Thank you for consulting NatureScot on the additional information for the proposed Berwick Bank Offshore Wind Farm, located in the Outer Firth of Forth Round 3 Zone. The proposal comprising a project design envelope approach, includes up to 307 wind turbines (tip height 355m) with an installed capacity of 4.1GW and proposed 35-year operational lifetime.

This response only considers the documents associated with the Addendum to the Environmental Impact Assessment (EIA) and Habitats Regulations Appraisal (HRA) (AEI01 Section 2 Marine Mammal Response and AEI01 Section 3 Outer Firth of Forth and St Andrews Bay Complex SPA Updated Assessment). We will provide advice on the Addendum to the Derogation Case and Supplementary Information separately. Thank you for granting an extension to consider the derogation aspects fully.

Background

In our advice sent to Marine Scotland (now Marine Directorate) on 21st February 2023, we requested additional information for marine mammals. In our separate advice sent on 31st March 2023, we also requested additional information in relation to the Outer Firth of Forth and St Andrews Bay Complex Special Protection Area (SPA) for ornithological interests. This letter provides advice on these aspects of the additional information only.

NatureScot advice

Marine mammals

We welcome the detailed additional information provided in relation to marine mammals. Overall, this further work and the explanations provided have clarified all the points we raised previously such that we are content with the EIAR conclusions. Further advice for marine mammals can be found in Appendix A.

Outer Firth of Forth and St Andrews Bay Complex SPA

In our ornithology advice to the Berwick Bank application dated 31st March 2023, we were unable to conclude no adverse effect on site integrity for the Outer Firth of Forth and St Andrews Bay Complex SPA from vessel disturbance associated with construction activities and/or during operation due to insufficient information. We clarified our advice on the 18th May 2023 in relation to which of the protected features of the SPA the assessment should consider, namely: common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver and Slavonian grebe. On the 23rd May 2023, we further clarified the inclusion of shag.

While the information provided is helpful, it is still relatively high level with limited detail on which Ports will be utilised and via which transit routes, although we understand that it is common practise to confirm these details post-consent, following a competitive tendering process. At this stage it is therefore unknown whether all or some of the vessel movements will transit through the SPA. In addition, the assessment is based on vessel movement data from within the shipping and navigation study area which only partially overlaps with the SPA.

The total number of vessel movements during the construction phase is estimated to be ~200 trips per month, over an eight-year period. This equates to a significant increase, 41-47% above the existing vessel movements, currently estimated to be approximately 420-480 per month – based on data from within the proposed development shipping and navigation study area. Additionally, ~146 trips per month are estimated during the operation and maintenance phase. This represents a significant increase in vessel movements by 30-35% across the study area. Although this area doesn't fully cover the SPA, the increase is of significant concern.

This proposal could be progressed with appropriate mitigation, informed by pre-construction monitoring. However, because it could affect internationally important natural heritage interests, **we object to this proposal unless it is made subject to conditions so that the works are undertaken strictly in accordance with the mitigation described below and detailed in our appraisal (Appendix B)** to avoid impacts to those protected features most susceptible to disturbance (common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, Slavonian grebe and shag):

- undertake monitoring within the Outer Firth of Forth and St Andrews Bay Complex SPA to better understand species distributions, populations and locations of moulting birds – this monitoring could be achieved collaboratively and should be agreed in advance;
- use monitoring results to inform spatial and / or seasonal mitigation requirements depending on selection of Ports and vessel transit routes; and
- provision of post-consent / pre-construction indicative / preferred vessel routes, including lie up or sheltering areas, which take account of monitoring results, to enable mitigation measures to be agreed.

If the proposal is carried out strictly in accordance with the mitigation as described above, our conclusion is that the proposal will not adversely affect the integrity of the site.

Alternatively, avoiding the increase in vessel traffic within the SPA by utilising transit routes outwith the SPA, is likely to be sufficient in our view to avoid an adverse effect on site integrity.

Further information and advice

We hope this advice is helpful. Please contact myself, Caitlin Cunningham in the first instance for any further advice.

Yours sincerely,

Caitlin Cunningham

Marine Sustainability Advisor, Sustainable Coasts and Seas

caitlin.cunningham@nature.scot

NatureScot ADVICE FOR BERWICK BANK – ADDITIONAL INFORMATION

APPENDIX A – MARINE MAMMAL ADVICE

We welcome the detailed additional information provided in relation to marine mammals. Overall, this further work and the explanations provided are clear and useful in clarifying the points we raised previously.

Harbour seal dose-response curve

In our previous response, we queried why the Russell et al. (2016) dose-response curve had been used rather than the more recent Whyte et al. (2020). Thus, we requested either a re-assessment using Whyte et al. (2020) or supporting evidence for the use of Russell et al. (2016) being more precautionary. The latter has been provided in the additional information, which indicates:

- The differences between the two methods, describing the use of different propagation models, different methods for calculating number of seals affected, and different thresholds for the onset of behavioural disturbance.
- A comparison of the two methods which indicates that Russell et al. (2016) predicts a higher number of seals affected and is, therefore, more precautionary.

It is useful to see the comparison of the two methods and how this affects the results. Given Russel et al. (2016) was shown to be more precautionary, and this was the approach used in the EIAR, we are content with the conclusion that residual effects are not significant in EIA terms. We also agree that there will be no adverse effect on site integrity for the Firth of Tay and Eden Estuary Special Area of Conservation (SAC), for which harbour seal is a qualifying feature.

Inclusion of 10% reducing to 1% scenario in cumulative iPCoD modelling

We requested the inclusion of the 10% reducing to 1% conversion factor scenario in the cumulative Interim Population Consequences of Disturbance (iPCoD) modelling to provide the full range of potential scenarios. The outputs for each species assessed have been presented as requested. These indicate that even with the most precautionary scenario, long-term impacts to populations are not predicted.

We are content that this additional information demonstrates that the full range of scenarios have been considered, and that even the most precautionary approach does not predict long-term effects on the populations. As such, we are content with the conclusion that residual effects are not significant in EIA terms.

Clarification around UXO detonation impact ranges

We requested clarification to better understand the reasoning behind why the very high frequency (VHF) hearing group predicted the largest SEL impact range, compared to the low frequency (LF) hearing group for the low order 0.5 kg UXO charge. The clarification provided is helpful in understanding the reasoning behind this, in particular the graphs of SEL and thresholds make the rationale very clear.

In summary, initially we expected LF species to be affected over larger ranges compared to VHF species, due to there being a high component of low frequency noise in UXO detonations, and the fact that LF noise travels further than HF. Our understanding from the additional information provided is that since the smaller charge size results in significantly lower injury ranges, the slope of the VHF curve at these closer ranges mirrors that of the LF curve slope but at a lower level. It is

only at ranges of greater than a few kilometres that faster molecular absorption of sound energy at higher frequencies occurs, resulting in the VHF and LF curves diverging significantly and where, as a result, the LF cetacean TTS range exceeds the VHF cetacean TTS range.

Overall, this additional information was useful, and we are content with the underwater noise assessment for UXO detonation, acknowledging that this will evolve post-consent and will be considered further as part of the EPS licencing process.

Conclusion

We are content that the assessment within the additional information provided supports and clarifies the conclusions presented within the EIAR, such that the residual effects are not significant in EIA terms. We also agree with the conclusion that there is no adverse effect on site integrity for all Scottish SACs with marine mammal qualifying features.

NatureScot ADVICE FOR BERWICK BANK – ADDITIONAL INFORMATION

APPENDIX B – OUTER FIRTH OF FORTH AND ST ANDREWS BAY COMPLEX SPA

We welcome the additional information provided with respect to the assessment of impacts from vessel traffic on the Outer Firth of Forth and St Andrews Bay Complex SPA, as presented in Section 3 of the Addendum to the Offshore EIAR and Report to Inform the Appropriate Assessment (RIAA).

The following protected features are considered in the context of disturbance from additional vessel movements within the SPA: common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, Slavonian grebe and shag. Please note that the Conservation Objectives for the Outer Firth of Forth and St Andrews Bay Complex SPA are published – see Conservation and Management Advice document.

Potential ports and vessel routes

Ports used for construction and maintenance activities are yet to be confirmed and will be determined as part of competitive tendering processes whilst aiming to maximise Scottish and UK content. It is possible that a number of ports in the Outer Forth/Tay region may be utilised during construction, with a single port used for maintenance activities during operation.

Most of the ports included within the assessment are located within the SPA (or would use routes out of the port that transit through the SPA), these are:

- Leith (construction/operation and maintenance)
- Cockenzie (operation and maintenance support)
- Dunbar (operation and maintenance support)
- Dundee (construction/operation and maintenance)
- Rosyth (operation and maintenance)
- Burntisland (operation and maintenance)
- Methil (operation and maintenance)

Three potential ports are located outwith the SPA, these are:

- Aberdeen (construction/operation and maintenance)
- Montrose (operation and maintenance)
- Eyemouth (operation and maintenance support)

We note that it is planned to use existing shipping routes as far as possible.

Increased vessel traffic associated with the development

While the additional information provides some helpful information, it has not fully quantified the likely increase in vessel traffic within the SPA. This is because the vessel movement data underpinning the assessment provided relates to the shipping and navigation study area. This study area only partially overlaps with the SPA, as outlined below.

Number of vessel trips

There are some inconsistencies in the total return trips stated in Table 2 and the main text. Summing the figures in Table 2 listed under construction for the entire development provides a total number of return trips of 11,384, not 11,484 as summarised in Table 2 and elsewhere in the document. This includes a combination of yearly trips totalling 10,964 and vessel movements across the entire construction phase totalling 420, making the final figure misleading. Similarly, we

calculate up to 861 return trips per year during the operation and maintenance phase from the figures presented in Table 2, with an additional 10 return trips per operational lifetime and four movements within the array area per day. However, the main text references 871, which again seems misleading. We highlight these inconsistencies for clarity, noting that they do not change the overall outcome of our advice.

Vessel movements associated with the proposed development are provided as return trips, whereas data from the shipping and navigation study area presents existing vessel movements as single trips. To allow clear comparison in our assessment, the vessel movements associated with the proposed development are classed as single trips.

The total number of vessel movements during the construction phase is estimated to be ~200 trips per month, over an eight-year period. Additionally, ~146 trips per month are estimated during the operation and maintenance phase, over the 35-year project lifetime. This represents a significant increase in traffic above the existing vessel movements, estimated to be 420-480 per month based on the shipping and navigation study area. Our assessment indicates that during the construction phase, there will be an increase in vessel movements of 41-47%. Similarly, the ~146 trips per month during the operation and maintenance phase represent an increase in vessel movements of 30-35%.

Shipping and navigation study area

The existing vessel movements of 420-480 per month are located throughout the study area. No maps were provided within the additional information documents to illustrate spatially how these figures were derived. Please see Figure 1 below which we have produced to help explain the mismatch between the underpinning data provided for the shipping and navigation area and the SPA – this is based on the study area map provided within Chapter 13 Shipping and Navigation from the original application. The study area spans a 10 NM buffer around the development array and 2 NM around the export cable corridor (Figure 1a). As such the study area only partially overlaps with the Outer Firth of Forth and St Andrews Bay Complex SPA – please see Figure 1b which illustrates the location of the SPA relative to the development array area and export cable corridor. **No separate information has been presented on existing vessel movements within the SPA**. Thus, we are unclear if the existing vessel movements of 420-480 per month are wholly representative of the existing vessel movements within the SPA.

If the chosen port(s) or transit routes are within the SPA, the current information provided may not be representative of the full impact to the SPA. For instance, if the SPA has a lower amount of existing vessel movements compared to the study area, the additional traffic from the proposed development would represent a larger increase from the baseline. **In our assessment, we have assumed it is reflective of the level of traffic within the SPA, however we request confirmation or otherwise of this assumption.**

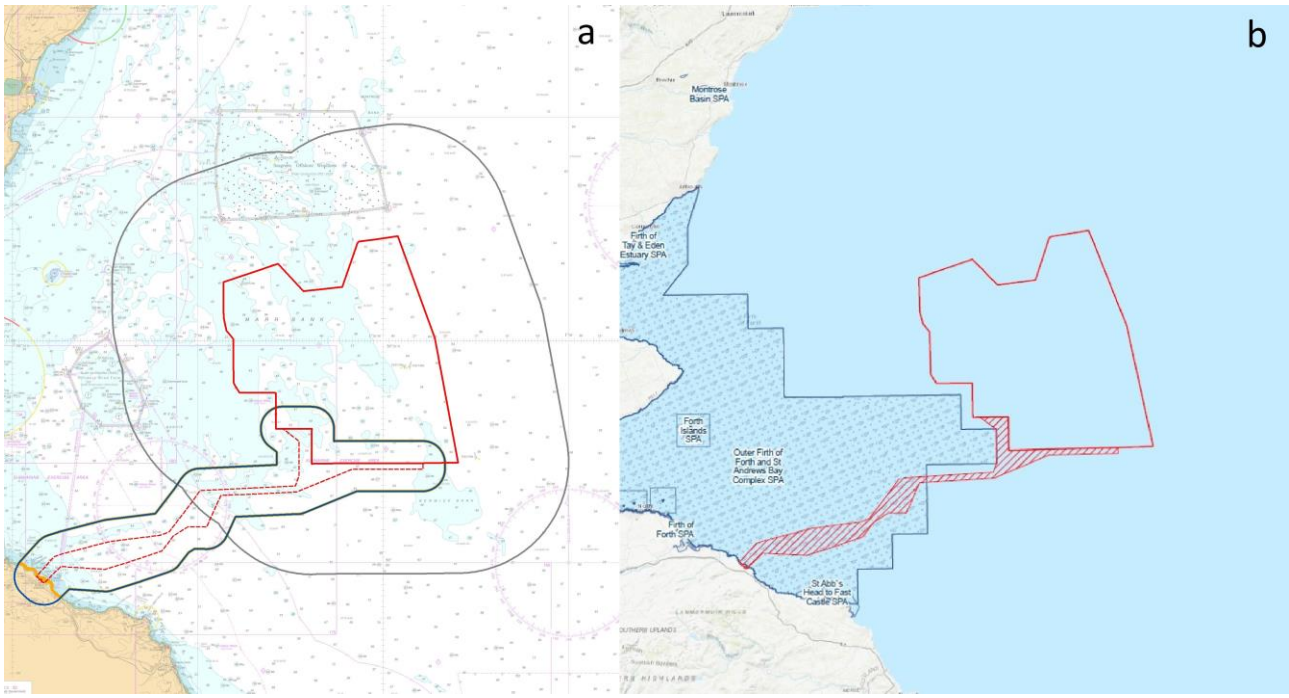

Figure 1. Berwick Bank shipping and navigation study area (a - left) and Berwick Bank project boundary and nearby SPAs, including Outer Firth of Forth and St Andrews Bay Complex SPA (b - right).

Potential lie-up or sheltering areas

No information has been provided regarding potential lie-up or sheltering areas for periods of bad weather or when access to the construction site is delayed. This is of particular concern for shag, which are largely concentrated around the Isle of May. Further consideration of this is required and should be addressed as part of any consent conditions.

In-combination effects

We disagree with the narrative (as per Sections 2.4-2.12) that 'construction activities for these developments which could cause an in-combination impact will be completed prior to the commencement of construction for the Proposed Development' particularly in relation to Seagreen 1A and Inch Cape Offshore Wind Farm. Neither have started construction and timelines for this are unknown. Vessel disturbance from in-combination effects may therefore be higher than currently described.

Conclusion

Based on the potential increased vessel movements through the SPA as a result of the proposed development, we are unable to conclude no adverse effect on site integrity. This advice is applicable to common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, and Slavonian grebe. Shag are largely concentrated around the Isle of May and may therefore be of less concern, provided vessel routes and potential lie-up or sheltering areas are identified to avoid close proximity to the island.

Consequently, Marine Directorate, as competent authority, is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interests.

To help you do this, we advise that on the basis of the information provided, if the proposal is carried out strictly in accordance with the mitigation (informed by monitoring) outlined below, our conclusion is that the proposal will not adversely affect the integrity of the site.

Alternatively, avoiding the increase in vessel traffic within the SPA by utilising transit routes outwith the SPA, is likely to be sufficient in our view to avoid an adverse effect on site integrity.

Mitigation and monitoring

The assessment is primarily based on the existing species population and distribution data from the Outer Firth of Forth and St Andrews Bay Complex SPA Site Selection documentation. This data is now over 20 years old. It was also collected for the purpose of site selection rather than for use within impact assessments. There is therefore limited data available to understand species distributions. This information is necessary to inform mitigation options to avoid significant disturbance, which would result in an adverse effect on site integrity.

Data from the BTO Wetland Bird Survey (WeBS) and the Non-Estuarine Waterbird Survey (NEWS) may be useful for nearshore areas (out to a maximum of 2 km) for certain species. However, this would not provide a full coverage of distribution within the SPA and is likely to focus largely on waders rather than waterfowl species.

Furthermore, limited data is available on moulting locations during the late summer, which is a particularly sensitive time for species with a flightless moult period. This period is not routinely covered by WeBS or NEWS.

Site Condition Monitoring (SCM) for this SPA is likely to take place during the winter period in late 2024 but would not include the flightless moult period in late summer. Further discussion is required to consider how this data collection campaign could complement or augment data requirements necessary to inform mitigation requirements.

In summary, we advise that in consultation with stakeholders, Berwick Bank should, for the following species, common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, Slavonian grebe and shag:

- undertake monitoring within the Outer Firth of Forth and St Andrews Bay Complex SPA to better understand species distributions, populations and locations of moulting birds - this monitoring could be achieved collaboratively and should be agreed in advance;
- use monitoring results to inform spatial and / or seasonal mitigation requirements depending on selection of ports and vessel transit routes; and
- provision of post-consent / pre-construction indicative / preferred vessel routes, including lie up or sheltering areas, which take account of monitoring results, to enable mitigation measures to be agreed.

If the proposal is carried out strictly in accordance with the mitigation as described above, our conclusion is that the proposal will not adversely affect the integrity of the site.

Northern
Lighthouse Board

From:	Adam Lewis on behalf of navigation
To:	MS Marine Renewables
Cc:	Rebecca Bamlett; Emma Lees; Rebecca Ross
Subject:	RE: [EXT] Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - Response by 3 October 2023
Date:	28 August 2023 11:12:35
Attachments:	image001.png

Good morning,

NLB note the additional documents provided by Berwick Bank Wind Ltd in relation to the development of the Berwick Bank OWF.

This additional information does not impact NLB's response to the original consultation.

Regards

Adam

Adam Lewis
Coastal Inspector
0131 4733197 [Redacted]

Public Representation

From: [Redacted]
Sent: 24 November 2023 00:46
To: MD Marine Renewables
Subject: Objection to Berwick Bank Offshore Wind Farm

Follow Up Flag: Follow up
Flag Status: Flagged

From [Redacted]

I write to fully object to Berwick Bank offshore wind farm development off the East Lothian Coast.
This development would be sited perilously close to Bass Rock, which is home to the worlds largest colony of Northern Gannets. Under the Habitats directive and the Marine Scotland directive, I find it hard to believe that Marine Scotland has allowed this proposal to advance to this point. Surely the inappropriate proximity of this proposed expansive windfarm to one of the world's most important seabird breeding colonies is all too obviously demanding to be rejected?
And these birds have already been juggling with death via the natural phenomenon that is Avian Flu. A little similar to covid 19 in humans. And such pandemic proportioned viral threats are linked to rapidly declining biodiversity.
This is Scotland, which used to be so highly natural but consequently is obviously therefore highly vulnerable to anthropogenic damage. Scotland has become one of the most nature depleted countries in the world and overzealous windfarm consenting has gone a long way towards promoting that decline.
As we consider this threat to our biodiversity, and in the light of the ongoing Biodiversity Strategy consultation, this proposed development contradicts all the planning and potential that is being created by this consultation.
This Gannet Colony (the world's largest Northern Gannet Colony) underpins the very understanding of Biodiversity, and why it is so vitally important to us in our best efforts to combat climate change. In this respect there can be no overriding public interest that allows Scot. Gov. to consent to this on appeal. In fact a consent would be overriding THE public interest: it will directly hinder the Scot.Gov proposed route to Net Zero by killing/significantly harming a vital population of seabirds that are helping to maintain our lands, seas and coasts from biodiversity decline. The loss of whole populations (that could have remained protected) and that constitute vital ecosystems and life cycles. Without these vital species, we, as a population, will be threatened more rapidly and more damagingly by climate change. And as human beings we have the right to a healthy climate. Any threat to this colony of seabirds would challenge that human right.
And I believe this site is an MPA. But in this instance it would be essential to maintain this protection: the risk to biodiversity at this inappropriate site is too great not to.
Scotland's chances of tackling the nature emergency will fail with the presence of Berwick Bank industrialisation being so threateningly close to Bass Rock.
This is merely another potentially profitable business deal for the power company proposer. And this proposed wind farm is huge, in all respects.
They are showing no concern for the essentially important environment in this area. The paid for marketing tactics employed are commonly used, and the job promises are overly optimistic. Consequently there can be no socioeconomic reason to consent at any time, and especially not on appeal. Widespread worry and negative mental health impacts affect communities that are forced to sacrifice what they love about their environments. And this public cares for Bass Rock: cares for its ornithology, its seascape and its landscape and its vital essence in their/all of our lives. Bass Rock and its gannets are a sign of a possibly healthier future. A healthier climate.
We have more than enough renewables projects consented and queueing. The renewables industry can't keep up with the rushed through planning process. This application process is a property development process, which leads to a pipeline of developments. We have 7GWs (3500 turbines) in the planning system. This needs regulation through environmental protection laws. Biodiversity needs the law on its side.
And herein lies the problem with our Scottish planning system.
The public and government have different perspectives of the planning system. Public assume it should provide environmental protection and that it is unsatisfactory. Government sees it as a policy delivery mechanism that does not work fast enough. It is now an old and dysfunctional system. The government uses the planning system to

control and channel economic activity to deliver policy objectives. The public does not see this. And so the public get mislead into their belief in the system and are then horrified at their being overruled by government.
Public are increasingly now looking at the law for environmental protection: the law should protect values (environmental, ecological, social and physical) and should protect from harms.
The changes in successive planning guidance documents are seen as an exercise in arbitrary power and rule changing to enable government to reach its desired ends. They show scant regard for environment, community and human rights.
And when the government plan contravenes environment regulations (as this one would) the government urge what they see as the benefits of their plan and its apparent necessity, and so tilt the balance in favour of the plan. That tilt, government usually defines as being, 'for socioeconomic reasons of overriding public interest.'
We now see the planning system as counterproductive and harmful. The system is not working for anybody, but developers can afford to drive their way through such cumbersome imperatives. Local populations are routinely seeing their environmental sacrifices. Communities are not empowered and wellbeing is sadly and harshly compromised.
This is the reality of renewable energy in Scotland.

With greatest apologies for the delay in sending and hoping that this content will still be considered as this is such an important case.
Yours very sincerely,
[Redacted]

Representations received on the application

The following representations were received through our online planning system after we sent our original response to you. There are two from residents, and one from Cockburnspath and Cove Community Council, which we believe was also sent to Marine Scotland directly.

From a resident of [Redacted] near Dunbar:

Customer objects to the planning application.

Reasons:

Ref Offshore 2: Volume2, Chapter 11: Offshore & Intertidal Ornithology,

Table 11.5:

Table 11.5 is headed: "Summary of Site-Specific Survey Data." This data was sourced/compiled between April 2019 & June 2021. The present outbreak of the highly highly pathogenic avian influenza (HPAI, H5N1) was declared in or around October 2022. Due to the indicated 50% mortality rate, it is surely necessary to compile fresh data such that an accurate & meaningful assessment of the Wind Farm can be carried out. This same criticism can be applied to much of the survey data quoted in the Chapter 11. I object therefore to the granting of Planning Permission in Principle until such time as accurate data in the context of the Avian Flu outbreak, can be compiled.

In Chapter 11 of Volume 2 of the EIAR for the offshore application (in relation to the impact of the offshore element on Ornithology) there is no reference at all to the present outbreak of Avian Flu. I object to the application on the basis that there must be an assessment of the impact of the wind farm on the bird population in the Forth Estuary area which is based on the bird population in its current state ie: already heavily impacted by the outbreak of Avian Flu. It will be too late in ten years time to realise that going ahead with such a massive offshore construction at a point in time where the bird population was already in a parlous state (as a result of the Avian Flu outbreak) was a serious mistake.

Resident of Dunbar

I broadly support the scope and strategic intent of this proposal, but have concerns about the cumulative impacts of competing developments in the area. Also given the monumental scale of this and similar proposals off and onshore, and the disproportionate local impacts felt mainly by local and nearby residents, I qualify that support.

Permission must be subject to stringent conditions, over and above those that might normally might apply and explicit consideration must be given to the cumulative impacts on the environment.

Given the scale of the potential revenue stream (and likely profits that relatively few companies will accrue) and the very long life of the whole development, I recommend that a significant compensatory project and at a very large scale will need to be implemented, the broad contours are described in a bit more detail below.

On the land side, where most practical compensatory measures are feasible, this would see the highly depleted "natural capital" south of Dunbar and west towards the Borders begin to be substantially enhanced, restored or reinstated. Natural capital being the sum of natural heritage assets ie landscapes, habitats and wildlife and fully functioning hydro- ecological systems.

Any community benefit must go well beyond the historical levels of support which have assisted - to an extent - the rebuilding of some neglected community assets. Helping the fuel poor should really be entirely separated under separate obligations.

Community benefit should be reimagined and provide intergenerational benefits too, by way of repair and restorations for past mistakes (albeit made in good faith, under different planning assumptions and different expectations and knowledge); mistakes which have diminished the inherent qualities of the local landscape, reduced the ecological interest or constrained it to the most marginal areas and narrowest strips of land; which are very often the only areas that are also accessible to the public and therefore bringing public recreation into conflict with conservation interests.

Future applications for energy development in the locality, either of similar scale or of similar local impact should contribute to such a fund / initiative; the combined effect to amplify strategic policy objectives and create local funding synergies on an unprecedented scale.

This would help cement a durable environmental partnership that will be necessary to steer through to a successful conclusion an important and ambitious initiative/masterplan, that should be enabled under the next Local Development Plan.

Project: Restoration of the Natural Capital and Landscape between Character Broxmouth, Dunglass and Crystalrig

1. A **major restoration and off-site mitigation plan** should be proposed by the developer along with a **substantial multiannual funding contribution** to support and undertake landscape scale environmental restoration and improvements in the area between Dunglass to Broxmouth and inland to Innerwick and Oldhamstocks and the upland beyond (to take in the areas of energy infrastructure - currently comprising Aikengall and Crystalrig).
   The plan should go well beyond the build phase. The plan should go well beyond the **limited on-site mitigation measures as currently proposed** and leave a substantial legacy of off-site improvements that contributes to reversing a century or so of ecological deterioration. Much of this deterioration is due to permitted activities - e.g. xtractive mining operations, energy infrastructure, permitted under different assumptions, but also recent road building; and not least a shift to mostly unsustainable extractive agricultural practices (ie contract farming).
   An **environmental fund should be created** to support ongoing management works and independently managed and controlled locally. A detailed plan outline should be submitted before work commences.
2. The **coastal strip needs a much wider and better environmental protection** using a variety of tools, e.g. buffer zones and a combination of habitat re-creation and managed retreat as appropriate, in order to help restore a more natural ecosystem functioning and encourage ecological processes while pushing back the farming boundary, starting with ground that is marginal agronomically. In time it may even be argued that a review of the extent of mining is needed given the CO2 emissions, which would improve prospects for a wider restoration.

e.g. at Skateraw and the area of SSSI either side of the Dryburn there are marginal fields and grassland which could be restored to nature and strengthen the coastal zone ecosystem. Regenerative agricultural practices should be encouraged all along the coastal buffer and also around all the local burns and significant drainage systems.
Lessons should be learnt from the partial attempts at ecological restoration at Oxwellmains. These areas remain - many years after the end of mining, ecologically depleted (the woodlands have little undertory vegetation, the water body is still not vegetated and the rank grassland supports limited plant diversity). This restoration has failed to improve the landscape - the big hole looks like a big hole in the ground with water, regardless of the conservation management prescription.

3. Signed paths should be part of a masterplan to help keep human disturbance away from sensitive dune, grassland habitats and woodlands and anywhere where avifauna uses field margins, but allow locals and visitors to enjoy a healthier and less polluted environment (currently residents can enjoy anything from cement dusts, light plastic wastes and a cocktail of sulphurous discharges and particulate matter).
New paths should be created to allow people to avoid the waste plumes, e.g. along the coastal ridge which could minimise disturbance to sheep and wildlife by humans and dogs in the SSSI (and to provide improved views to sea) or on the West side.
4. The **coastal zone needs renewed ecological and hydrological linkages to the countryside and hills** beyond, starting with the highly degraded riverine valleys (most are designated as Wildlife Sites and would be available for woodland grants for broadleaved plantings to assist); restoring or ecologically enhancing woodland habitats should emulate the diversity of the semi natural steep sided deans present in small areas in and around the locality; interspersing these with more open meadow glades and small floodplain wetlands.
Most extant woodlands, semi natural or planted, have not been managed at all well over the last half century or more. The river valleys should also be suitably buffered in all directions up to their headwaters, to minimise problems of run off and eutrophication and sedimentation associated with intensive farming.
In most cases the agricultural value of the steeper sloped land is low, especially in the headwaters and the insensitive development contributes little to landscape habitat diversity or quality, rather it creates often very visible scarring and results in progressive soil erosion and sedimentation. Everything from insensitive track creation and poor land management practices, like pheasant rearing on the one hand and burning on the other should be included in management prescriptions to support a healthier functioning landscape.
The Dryburn would be an ideal candidate for targeting early restoration or rewilding efforts esp. in its lower reaches and then beyond.
The fields where the cables are to be undergrounded at Skateraw could also be reconfigured, to create a more distinctive and diverse coastal grassland; and perhaps the concrete sea protection removed once the installation works are complete. This could provide highly visible evidence and demonstration of good restoration practices and managed retreat, and new well signposted local path configurations.
5. Wherever possible, these **offsite restored areas** should be made sufficiently accessible to local people (incl. from Cockburnspath to Dunbar), esp. those who want to visit without a car or don't have access to motorised transport. The aim would be to strengthen the existing path networks and build up a coherent web of legible public paths (usable all year round), which would also better link the villages and the those typically more isolated steadings and old agricultural cottages, to create safe off road walking routes, suitable for leisure and utility journeys.

Although much of the road network could qualify as quiet, the road geometry and widening more often than not doesn't lend itself to shared use, without some serious interventions to slow down industrial and farm traffic. Even though vehicle speeds may not be as high as people think, local people clearly do not feel safe with large vehicles in their proximity.

6. At a **landscape scale the restoration of long, medium and short distance views** should be addressed to enhance everyone's experience of the locality (which is inherently rich in geodiversity and historic heritage and even improve the appearance of the industrial heritage - this should include lighting at night, which is currently excessive).
   Efforts can be concentrated around path networks and field margins, but elsewhere around the older and well-established infrastructure. The landscape features have been fragmented, scarred and severely diminished by decades of unsympathetic industrial development and incomplete measures. For the large part attempts at mitigation have not stood the test of time - were either poorly designed or tended to decline through neglect, lack of any aftercare (lacking either a plan or sufficient resources.)
   Further landscape linkages with ecological benefits should be proposed to restore e.g. field structures, like wide hedges and walls, specimen trees, copses and woodland shelter belts; too many now are eroded by years of neglect and worsened by storm damage. A good starting point for the landscape measures would be the landscape assessments carried out for the Local Development Plan (2018), which has prescriptions. This e.g. cites man made features, such as 18 and 19C farm walls and field features, many of which are falling into disrepair, but characterise and mark the distinctive rolling landscape. This can be built on with a wider suite of management prescriptions designed specifically for this area.
7. Meaningful public access is required too. Roads and industry present significant barriers to safe and easy access to the coast. Many paths are poor quality, some eroding, many poorly maintained or constrained by limited routing choices.
   The visual outlook from these routes is almost always industrial and is unappealing. Farming then pushes the ecological envelope to its extreme. After the machines have left, the farming boundary is pushed back further, or overburden or stones piled randomly - a major missed opportunity to improve the people's experience.
   In this regard the A1 requires a number of safe crossing points - for walkers and cyclists. Safe crossings should be located at intervals near the Innerwick, Thorntonloch and Oldhamstocks and Dunglass/Bilsdean turn offs.
   In conclusion a major regeneration project would have huge symbolic importance and allow more people to enjoy the local heritage natural and built, safely, without having to rely exclusively on motorised transport and sheltered from the omnipresent shadow of industries of the past. There should be tangible benefits for all local people's health and wellbeing from such a scheme.

Resident of Skateraw

My objection to the above application [22/0005/SGC which is the Scottish Government consent and 23/00162/PPM which is the onshore works]. Please confirm receipt of this email, to ensure you have received my objections, as I've had issues trying to upload to online.

There is no need for such a small rural place of natural beauty to be totally disrupted and affected by something that does not provide any benefit to the local community, surrounding area or Scotland.

This proposal is for England to use the energy created not for Scotland's use – therefore, location should be within England for their distruption not for out lives to be stressed and disrupted in such a severe manner. This rural location is agricultural land, not industrial, it contains small hamlets who will be hugely affected by these numerous proposals we are constantly being bombarded with in this area. A technique no doubt used by Applicants to their advantage, to disadvantage the local residents and surrounding areas!

Disruption to the wildlife, sealife, local residents, dog walkers, tourists (Dunbar lost its tourism the last time a major development like this proposal was carried out – its taken this length of time to gain some of it back)! Disruption to John Muir Way, the importance of the geology of the area, potential damage/disruption to the Skateraw Serpent – none of these seemed to have been taken into account.

Our right to roam will be restricted with this invasive and unnecessary Application. I also echo and agree with the concerns of those such as EDF (Torness) and Bird & Wildlife Authorities who have recently made their objects very public in news articles etc, and would agree with their objections to these Applications.

Where are the workers going to be accommodated – this is a contentious topic in an area that already does not have enough property to rent, for those who live in the area, without bringing workers from elsewhere. Even if workers are not living within the area, then it's the volume of traffic we need to contend with. Increases if workers are travelling, this is an unnecessary impact on the environment. The increase to the traffic infrastructure would require upgrading, with the potential for even more accidents on OR joining A1. The stretch of road from Innerwick to Torness is already an accident hotspot as it reduces to single lane and 60mph – along with the agricultural traffic which will continue as its an agricultural area (not industrial) together with additional HGVs provides greater increase of traffic at varying speeds with increase in accidents. The last time the area had similar development, the HGV intimated local drivers at junctions!

Also concerns about flooding in areas & fields that have not flooded before due to what works are being proposed.

The sheer volume of documentation (over 180), which the applicants have taken years in some cases to produce and pour over and yet the local community have such a limited time to even try and digest what they all mean and interpret language which we are not used to as we don't do these projects as a day job!! Again no doubt to confuse the layman who does not know the ligo/terminology is exceptionally confusing. Applicants Plans are difficult to follow – consultations did not consider out of office hours for those of use who work shifts or could not attend perhaps until weekends etc.

On the colour plan, I cannot find what the colour references on the plan refer to – thus more confusion. Skateraw its basically engulfed by different colours on the map to what extent or reason we have no idea!

The potential use of the old A1 for vehicles or contractors car parking is unacceptable. We already have issues and are in communication with East Lothian Council regarding the speeding that is a present problem.

Objections to the noise of construction, sheer volume of increase in traffic and noise emitting from the proposed application is unacceptable, we already have vibrations and noise from the Torness Power Station. Lets also mention the decommissioning of the Torness Power Station which is also

going to have a huge impact at the same time as all these applications are being proposed! Why is the land set aside to right of Torness Power Station

Skateraw feels like its being surrounded and push out our its rural setting without consideration to our mental health/health because we are small hamlet the big companies are bullying us with this infringement into our peaceful lives.

There are genuine concerns about mental health, noise, white noise, potential leukemia risk, along with other risk to public health for so many people in the area. Then there is the horrendous blight that will be placed on our beautiful landscape – 3000 characters are just not enough – Applicants aren't restricted in their submissions!!

Lastly if you were lucky enough to live in such a beautiful idyllic place would you want this on your doorstep – hand on your heart, I am sure you would not – therefore reject this application.

Cockburnspath and Cove Community Council (CCCC)

OBJECTS to this Planning Application.
These planning applications (both Onshore and Offshore) were discussed at the meeting of the Cockburnspath and Cove Community Council on 10th May 2023 and the opinion and OBJECTION of the CCCC are detailed below. While it is understood that the CCCC are not a statutory consultee on these applications and that the CCCC are situated over the border in Scottish Borders it is felt that the development is of such significance that there will be an impact that needs to be highlighted. This objection is made primarily on the grounds of:

1. The absence of any cumulative impact assessments - taking into account the consented EasternnLink developments, proposed Branxton Battery Storage, proposed North Belton Battery Storage, proposed Crystal Rig IV windfarm and associated solar farm, final phase of Landfill operations at Oxwellmains, and eventual de-fuelling of Torness Power Station - cumulative assessments are needed of environmental, transport, and health impacts.
2. The transport impact of the increased volume of traffic that will be utilising the Cockburnspath and Cove roundabout on the A1.

Cumulative Impact Assessment:
It is known that there are somewhere in the region of nine major development projects at various stages of planning within the area. Outside of a public meeting hosted by the East Lammermuir Community Council on 25 April 2023 that was attended by representatives of CCCC, there is no imperative for each of the developers to consult one another. The documentation attached to this planning application indicates a search of the Planning Database to build a view of conflict during the development phase rather than there being any requirement to ensure that the developments plan and execute in any kind of formalised partnership. Given the extended period over which the accumulated development projects are expected to take place, it is our belief that a more formal association between the projects needs to be created, perhaps in the form of a joint Project Office.

While it is understood that the East Lothian Council can only take a view of each application on its own merits, it is the belief of CCCC the sheer number of development projects at various stages of planning and development in the area must necessitate a broader view across the piece.

The sheer number of substations, collector stations and battery storage facilities etcetera proposed for this rural, seaside area are turning this part of the North Sea coast into an extended industrial zone.

Transport Impact:
The Cockburnspath and Cove Community Council area lies less than a mile from the eastern edge of this development. From the details presented in the Transport plans attached to this Application it would appear that the delivery route for Substation 3 would be our main concern.

It is not clear from the Abnormal Route Assessment d document whether the loads will be transported along the A1 from the southerly or northerly direction. If from the north it would appear that the expectation here is that the loads would have to turn across the north-bound A1 traffic onto the road for Bilsdean. This will cause significant inconvenience and potential for road traffic accidents on what is an already difficult junction.

If the abnormal loads are to come from the southerly direction then this will impact the residents of Cockburnspath and Cove by potential delay to northbound traffic as it approaches and traverses the roundabout, with further issues created as the traffic attempts to then make the difficult turn onto the Bilsdean road. This has the potential to be even more dangerous than making the turn across the flow of A1 traffic if coming from the northerly direction.

The Transport impact also speaks to the lack of joined up planning between this proposed development and other proposals that have been before East Lothian Council. It is our understanding that the planning requirements for the Branxton Substation included a direction that traffic coming from the northerly direction would be directed on to the Cockburnspath and Cove roundabout and then back along the A1 to the Bilsdean junction where a new slip road would have to be constructed in the field in order to avoid the dangerous turning of large HGV's and Abnormal Loads. For no such assumption to have been included in the Abnormal Load Plan suggests that our concerns regarding cumulative effect and lack of consultation are valid.

Royal Society for the Protection of Birds Scotland

Licensing Operations Team
Marine Directorate
By email: MS.MarineRenewables@gov.scot

RSPB SCOTLAND

27th October 2023

Dear Becca

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 (AS AMENDED), MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE BERWICK BANK OFFSHORE WINDFARM, OFF THE COAST OF EAST LOTHIAN AND THE SCOTTISH BORDERS

Thank you for consulting RSPB Scotland on the additional information provided by the Applicant in relation to the above offshore windfarm proposal comprising up to 307 wind turbines (with maximum tip height 355m), maximum capacity of 4.1 GW and proposed 35-year operational lifetime.

We previously objected to the proposed development as we do not believe this is the right location for a windfarm. The proposed development overlaps with the Forth Banks MPA complex, an identified area of critical sandeel habitat and important to foraging seabirds. The impacts from the proposed development are large and significant. Potential for Adverse Effect on Site Integrity (AEoSI) cannot be excluded for kittiwake, gannet, razorbill, guillemot, and puffin at four Special Protected Areas (SPAs). In combination with other North Sea windfarms, potential for AEoSI cannot be excluded for twelve SPAs.

Having reviewed the additional information, **RSPB Scotland maintains our objection to the proposed development.** Ultimately the site is inappropriate for the proposed development. An offshore windfarm in this location would cause serious and irreparable harm to biodiversity. The application does not constitute sustainable development and so is contrary to the National Marine Plan, the foundation upon which decisions for development in the marine environment should be made. It is also our view that the requirements of the Habitats Regulations have not been met. We acknowledge and appreciate the Applicant has undertaken a large amount of data collection and analysis, invested much resource and has sought to engage with stakeholders throughout the process and we thank them for this. Regrettably this does not change the acceptability of the development.

Should Ministers be minded to grant approval for the proposed development despite our objection, we recommend they first consider whether it would benefit from the enhanced scrutiny and evidence that calling a public local inquiry to determine the application would provide. We also request that consideration

Chair of Council: Kevin Cox **President:** Miranda Krestovnikoff **Chair, Committee for Scotland:** Dr Vicki Nash **Director, RSPB Scotland:** Anne McCall
The Royal Society for the Protection of Birds (RSPB) is a registered charity: England and Wales no. 207076,
Scotland no. SC037654 Registered address: The Lodge, Potton Road, Sandy, Bedfordshire, SG19 2DL

is given to whether the proposed development would complicate Scotland achieving its greenhouse gas reduction and climate change targets in accordance with the Government published strategies.

Our detailed comments are enclosed. Should you require any further information or clarification, please do not hesitate to get in contact.

Yours sincerely,

[Redacted]

Senior Marine Conservation Planner
RSPB Scotland

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The RSPB is part of Birdlife International, a Partnership of conservation organisations working to give nature a home around the world.

Chair of Council: Kevin Cox **President:** Miranda Krestovnikoff **Chair, Committee for Scotland:** Dr Vicki Nash **Director, RSPB Scotland:** Anne McCall
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Berwick Bank Offshore Wind Farm Application
Additional Information Response by RSPB Scotland

1. Introduction

1.1. This additional information consultation response for Berwick Bank Offshore Windfarm should be read in conjunction with the information submitted by RSPB Scotland in response to the original consultation in March 2023.

1.2. Our comments here focus on the additional information provided by the Applicant and sent for consultation by MD-Lot in August 2023.

2. Consideration of Precaution

2.1 The Applicant has submitted an additional chapter on the consideration of precaution. In particular they suggest that excessive application of the precautionary principle will distort robust decision making by presenting assessments which are unrealistic compared to the risk to the environment. They also suggest that there is no evidence in support of the assertion that predicted impacts are due to extremely high densities of birds present in the vicinity of the Proposed Development and highlight three areas where they consider advice in the scoping opinion has led to an overestimation of predicted impacts by applying an excessive level of precaution. This amounts to a "pick and choose" assessment of precaution and the Applicant has ignored situations where other statutory agency would take a more precautionary approach, such as in choice of parameters for the displacement matrix and where more precaution should arguably be applied, such as the inclusion of availability bias in the density estimates for gannet displacement analysis.

2.2 The precautionary principle requires demonstration with scientific certainty that something would not be harmful, and where scientific uncertainty exists, as suitable degree of precaution must be applied to the environmental assessment. As such the degree of precaution applied to an assessment should be directly proportionate to the amount of scientific uncertainty within the assessment. The 'scoping' and 'developer' approaches utilise different approaches and model parameters, and the developer approach has a lower level of precaution applied. The underlying bird density data that goes into the models is the same. It is collected through digital aerial survey whereby regularly spaced transits are flown over the application site and a buffer area (to cover around 10 to 15% of the site) to collect photographs or videos which are then analysed. For sensible health and safety reasons, the timings of the surveys are limited to hours in the middle of the day which has implications for species likely to be foraging or commuting at dusk. Weather permitting, these surveys are flown once per month for two years. Already there is an assumption that the number of birds identified in a percentage of the site as surveyed at one point in time on one day is broadly representative of the whole month and that a second survey in the same month in a different year will capture the inherent variability in weather, sea state, tidal state, and other environmental covariates that will influence bird spatial distribution. This is a pragmatic position to only collect data for this time but highlights how inherent uncertainty is built into the assessment from the start.

2.3 Despite this uncertainty, and the consequent need for precaution, the Applicant suggests there are three key reasons why the scoping advice and subsequent assessment is overly precautionary. These are:

2.3.1 It is not consistent with new guidance published since the Section 36 Application was submitted;

2.3.2 It does not use the best available scientific methods available for the impact assessment; and

2.3.3 It does not provide sufficient evidence to justify a change from precedent advice for previous Scottish offshore wind farm assessments.

It is not entirely clear how Reasons 1 and 3 can both be included since it appears the Applicant criticises NatureScot both for not taking into account new guidance and for not taking account of advice for previous development. . The science examining the potential ornithological impacts of offshore wind is a fast moving field and consequently the SNCB advice, underpinned by this science, has to be dynamic. At the same time the nature of planning deadlines mean that there has to be a point where final guidance is given.

2.4 As the Applicant has highlighted, it is not ideal that they are presenting information using out-dated parameters. The scoping process for Berwick Bank offshore windfarm took place in October 2021. Part of the scoping process is to accept that science moves on and agree the best available at the time. Since the scoping opinion was issued, NatureScot has indeed published a series of guidance notes to aid developers with offshore wind applications. This guidance is based on workshops with industry, reflections on previous information contained in applications, post consent monitoring results, and review of research project outputs. It is evidence led. Furthermore, as offshore wind is a relatively new field with much research taking place NatureScot have committed to reviewing and updating the guidance notes as the knowledge and evidence base continues to grow.

2.5 It is unfortunate that timings meant the NatureScot guidance was not available at scoping. If the Applicant is aggrieved by some of the parameters in the guidance being “less precautionary” than those specified in the scoping opinion, RSPB Scotland would be content for the Applicant to provide updated information based on the NatureScot guidance to support this application. We do not however consider there should be a mixing and matching to suit the needs to the project – they should either use that agreed at the time of the scoping or the latest and best available at this point in time as contained within the guidance.

2.6 The Applicant disputes NatureScot advice which correctly that the predicted impacts of the Berwick Bank development are so large because of the exceptionally high number of birds using the site. The Applicant does this by comparing densities across the other Forth and Tay developments. This approach is incorrect for two reasons. The first is that it is the absolute numbers that are high and so are the consequent impacts, and this is in part because of the sheer scale of the development. The second is that the other Forth and Tay developments also had high predicted impacts, and the RSPB objected to them, so to say that they had similar or larger densities does not minimise the scale of impacts.

2.7 The RSPB agrees that new avoidance rates have been published since the assessment has been completed, with the key result being a rate given suitable for the stochastic CRM. The Applicant has not rerun the assessment with the sCRM but does present results for the deterministic CRM with revised avoidance rates. These still show very high levels of predicted mortality, such that would have significant impacts on a number of SPAs. The RSPB notes that our concerns with gannet breeding season avoidance rates have not been addressed by the new guidance, largely through the acknowledged paucity of data. Our rationale for this has been presented in our original response. As such, it may be for gannet in the breeding season, the predicted mortalities are an underestimate.

2.8 The Applicant further cites the study carry out at the European Offshore Wind Deployment Centre at Aberdeen Bay. The RSPB were involved in the expert steering group for this study and as such were instrumental in its study design and outputs. It was not designed as a collision monitoring study, rather a study of bird behaviour in an operational wind farm. This is entirely clear within the report. As such, the number of collisions it reports cannot be considered representative of the potential impacts arising from other windfarm, particularly those of a much larger scale, nearer large breeding colonies and further offshore such as the proposed Berwick Bank development.

2.9 The Applicant highlights the correction for macro-avoidance that has been recommended for English offshore wind farm assessments. The current evidence of a strong macro avoidance of wind farms by gannets, established from observed behaviour, is derived from non-breeding birds. The evidence for macro avoidance during the breeding season is limited with the exception of a study of gannets breeding on Helgoland (Peschko *et al*. 2021[1]). However, it is unclear from this study what the breeding status of the tracked birds was or how their behaviour differed from what would have been expected pre-construction as two of the three wind farms were already operational during the first year of tracking. Digital aerial surveys pre- and post-construction at Beatrice offshore wind farm in the Moray Firth, Scotland show a decrease in gannet abundance post construction but the provenance, breeding status or age of the displaced birds is unclear as is any seasonal change in displacement (MacArthur Green 2019[2]) and the results are only for a single breeding season. Despite this evidence of macro- avoidance recent work in Belgian offshore windfarms has shown that potentially habituation to the presence of turbines can result in lower macro avoidance (Vanerman *et al*., 2021[3])

2.10 There is evidence that the foraging movements and behaviour of gannets will vary in relation to stage of the breeding season in response to changes in the distribution and abundance of prey and changing constraints as they progress from pre-laying to chick-rearing (Lane *et al*. 2020[4]). GPS tracking of gannets breeding on the Bass Rock between 2010 and 2021 has shown variation in the two-dimensional foraging behaviour of birds across the breeding season (prior to chick rearing and

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1 Peschko, V., Mende,l B., Müller, S., Markones, N., Mercker, M. and Garthe, S. *Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season*. Marine Environmental Research 162

2 MacArthur Green 2019 Beatrice Offshore Wind Farm Year 1 Post-construction Ornithological Monitoring Report.

3 Nicolas Vanermen, N., Courtens, W., Van de walle, M. Verstraete, H. and Stienen, E.W.M 2021 *Seabird monitoring at offshore wind farms in the Belgian part of the North Sea: Updated results for the Bligh Bank & first results for the Thorntonbank.* Instituut voor Natuur- en Bosonderzoek

4 Lane, J.V., Jeavons, R., Deakin, Z., Sherley, R.B., Pollock, C.J., Wanless, R.J., Hamer, K. C., 2020. *Vulnerability of northern gannets to offshore wind farms; seasonal and sex specific collision risk and demographic consequences*. Marine Environmental Research. 162.

chick-rearing), between sexes, and between years (Cleasby *et al*. 2015[5], Lane *et al*. 2020, Lane and Hamer 2021[6]). Three-dimensional tracking of gannets during chick-rearing has also revealed that flight height and flight speed both vary according to behaviour, sex and wind conditions (Cleasby *et al*. 2015, Lane *et al*. 2019[7], Lane *et al*. 2020) and similar patterns have been recorded in other seabirds (Masden *et al*. 2021[8]). Because any error in the use of flight height and flight speed as input parameters in the sCRM should be corrected for in the use of Avoidance Rate, any seasonal variation in these parameters should also be reflected in variation in the Avoidance Rate, in the absence of any actual evidence from the breeding season.

2.11 The Applicant argues that it is not appropriate to use the SeabORD model outputs to inform the mortality rates used within the Displacement Matrix. Most of their conclusion are based on a consultant's report to the Applicant that has not subject to peer review (Vallejo *et al*., 2022[9]). Contrary to the Applicants points, the SeabORD model, unlike the matrix approach, is based on data derived from scientific studies largely carried out in the Forth and Tay region. The authors include many of the world's leading seabird scientists. It takes a far more biologically meaningful approach to modelling the consequences of distributional change, such as displacement, than the matrix approach, for example by including the more likely impacts, such as on productivity, rather than a simplistic direct mortality approach. It also allows for a measure of uncertainty to be incorporated. This biological reality that underpins it makes it a far better assessment method than the overly simplistic matrix approach.

2.12 The RSPB notes that the SNCB guidance on the use of the matrix approach includes the following: "The selected mortality levels should be appropriately precautionary, given it is currently intended to (qualitatively) address the potential population level impacts of displacement on both mortality and productivity combined." The Applicant has not included the impacts on productivity at all in their discussion of mortality rates.

3. Feasible Alternatives

3.1 RSPB Scotland are disappointed the Applicant has not fully considered whether there are feasible alternative solutions to the proposed development. We have advanced reasonable theoretical scenarios to highlight that the proposed development is not the only solution. To dismiss these alternative options as "speculative assertions and hypothetical scenarios [put forward] in an effort to create doubt" whilst describing their own application "as detailed and robust" dismisses the inherent uncertainty involved in modelling offshore windfarm impact predictions and undermines

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[5] Cleasby, I.R., Wakefield, E.D., Bodey, T.W., Davies, R.D., Patrick, S.C., Newton, J., Votier, S.C., Bearhop, S., Hamer, K.C. 2015. *Sexual segregation in a wide-ranging marine predator is a consequence of habitat selection. Marine Ecology Progress Series*, 518, 1-12

[6] Lane, J.V. and Hamer, K.C. 2021. *Annual adult survival and foraging of gannets at Bass Rock, Scotland: Report to the Ornithology subgroup of the Forth and Tay Regional Advisory Group (FTRAG-O*) – October 2021

[7] Lane, J.V., Spracklen, D.V., Hamer, K.C., 2019. *Effects of windscape on three-dimensional foraging behaviour in a wideranging marine predator, the northern gannet.* Marine Ecology Progress Series, 628, 183–1

[8] Masden, E.A., Cook, A.S.C.P., McCluskie, A., Bouten, W., Burton, N.H.K, Thaxter, C. 2021. *When speed matters: the importance of flight speed in an avian collision risk model.* Environmental Impact Assessment Review, 90

[9] Vallejo, G., Robbins, J., Hickey, J., Moullier, A., Slater, S., Dinwoodie, I., Cook, g. & Pendlebury, C. 2022 *Sensitivity analysis of parameters and assumptions in the SeabORD model*. Report to SSE Renewables

the matter at stake – whether the proposed Berwick Bank Offshore Windfarm should be consented.

3.2 The Applicant has been clear in that the project would result in AEoSI and we agree with this overall conclusion albeit with a different opinion on the magnitude of those AEoSI and the numbers of sites and species impacted. As the Applicant has recognised, for the project to be permitted it must be demonstrated there are no alternative solution, the project is required for imperative reasons of overriding public interest and necessary compensatory measures are secured to ensure the overall coherence of the International Sites Network is protected.

3.3 As set out in our previous response, RSPB Scotland recommend Scottish Ministers consider the alternative solutions against the following objective:

> *To aid Scotland in achieving its greenhouse gas reduction and climate change targets in accordance with the Government published strategies through the development of commercial scale offshore wind.*

3.4 Through Scotland's Offshore Wind Policy Statement (2020), Scottish Government has set an ambition for 8-11 GW offshore wind capacity in Scotland by 2030. Based on the existing amount of offshore wind construction and consented in Scotland[10], a further 2.1 to 5.1 GW is required to meet this target. We agree there is no upper limit and that decarbonising our electricity supply is an important step in meeting carbon reduction targets. Yet this does not negate the fact that other pipeline offshore wind projects in Scotland could meet the target. Mindful of the pressures on the national grid, we consider it unrealistic to suggest that unutilised grid capacity would not be re-allocated (and also note National Grid recently ran a consultation on connection reforms). In the search for alternatives, no weight should be given to having a grid connection. This accords with the position for terrestrial energy development as set out in NPF4 policy 11 which states that gird capacity should not constrain development.

3.5 It must also be recognised a project gaining consent does not guarantee it will be delivered. The Norfolk Boreas offshore windfarm project for example has ceased development due to rising costs despite securing financing through the Contract for Difference (CfD) scheme. To date, very few projects have become operational without this type of finance. In the most recent CfD round however no consented offshore wind developments sought financing, reportedly due to the maximum strike price available being too low in the current market. Gaining this financing or operating without it is not something that can be controlled by condition. In summary, having consent is vital to being operational by 2030 but it is not the only factor. Only limited weight can be given the argument that this project (or indeed any other) will be operational by 2030.

3.6 In regard to the identification of the proposed development site, we are not able to find evidence that suitable prey habitat and substantial use of an area by seabird were viewed as environmental constraints in 2010 when the lease exclusivity was agreed. The Strategic Environment Assessment carried out by The Crown Estate for the Round 3 lease sites predominantly delegated matters to the project level. We do know that the Forth Banks Complex MPA was not designated until 2014

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[10] The Crown Estate (June 2023) Project Listings https://www.thecrownestate.co.uk/media/3954/offshore-wind-project-listing.pdf

and that seabird (and other environmental) surveys were not (and continue not to) be carried out before seabed options or exclusivity agreements are granted.

3.7 As in our previous response, since the site exclusivity agreement more information has become available, and awareness of offshore wind impacts have increased. Sediments and other environmental aspects that make an area of sea a good nursery and spawning area for fish and foraging area for seabirds cannot be relocated. It is therefore imperative that they are considered hard constraints and excluded from development proposals. We recognise the Applicant undertook a detailed mapping of environmental and technical constraints between 2010 and 2012 as part of a zone appraisal and they further revised the application site boundary prior to submission of their application when more detailed information was available. Nevertheless, the best area within the Applicant's exclusivity agreement is unfortunately not synonymous with the least environmental damaging location for an offshore wind development.

3.8 Fundamentally alternative solutions as a requirement for Habitats Regulations assessments are crucial to ensuring the least damaging location in the marine environment is built upon to meet the public need of renewable electricity. This has not been demonstrated. As noted by the Applicant, the Scotwind projects are likely to have some ornithological impact. Indeed some plan options are located in areas classified as 'subject to higher ornithological constraint' where further research is taking place and others are subject to ongoing regional survey effort. But the impacts of this proposed development are vast. AEoSI cannot be excluded for four SPA species and, in combination with other North Sea developments, AEoSI cannot be excluded for up to twelve SPAs. That it is the least damaging location to meet the public need for renewable electricity has not been demonstrated. Furthermore, for there to be overriding public interest, the interest served by the project must outweigh the harm to the integrity of the sites as assessed in light of the weight to be given to the protection of such sites. This has not been demonstrated.

3.9 **We therefore again request that Scottish Ministers seek NatureScot's advice as to whether, with the information currently available, it is possible to conclude that development of one or more Scotwind sites would meet the objective as outlined above and be likely to result in less potential for harm to protected sites and species compared to this proposed development.**

3.10 The Applicant has noted their support for position of the UK Government for Offshore Wind Projects in the draft National Policy Statement for Energy – 3. The RSPB responded to the revised draft National Policy Statements consultation in May 2023. As set out in that response we do not agree with the proposal to restrict alternative solutions as it effectively undermines the intention of and need for the alternative solutions test. Although principles in the draft National Policy Statement are capable of being material considerations in Scottish Ministers' decisions, the National Policy Statement is not yet adopted and as currently drafted, conflicts with existing guidance on alternative solutions. For these reasons we consider Scottish Government should give minimal weight only to the UK Government's draft National Policy Statement for Energy.

3.11 In summary RSPB Scotland do not consider that an absence of alternative solutions has been identified. As set out in the Habitats Regulations where a plan or project would result in Adverse Effect on Site Integrity, only if the competent authority is satisfied there are no alternative solutions, and it must be carried out for imperative reasons of overriding public interest and

compensation has been secured, may they agree to it. The proposed development does not pass these tests (as discussed further below) and therefore must be refused.

4. Compensation

4.1 As in our previous response, compensation measures required due to the Habitats Regulations are independent of the project and are aimed to offset the residual negative effects of that project in order to maintain the overall coherence of the International Site Network. They must provide continuity in the ecological processes essential to maintain the structure and functions that contribute to the International Sites Network coherence.

4.2 Compensatory measures should be additional to actions considered as normal requirements under the Habitats Regulations and should go beyond those standard measures required for the designation, protection, restoration if required and management of the protected sites.

4.3 It is vital that details and evidence are provided to enable ecological, financial, and legal confidence in the compensation proposals. Information to do this must be available for review by all interested and involved parties. As highlighted by Hornsea Three Offshore Wind Farm, a failure to ensure all these are in place leads to delays post consent.

4.4 As with the design of compensation measures, their implementation timescale must follow basic seabird ecology. Kittiwakes for example do not breed until they are over four years old. RSPB Scotland consider the following factors must all be considered when developing the implementation timescale:

4.5 The breeding ecology of the impacted species and timescales likely to be required for the agreed compensation measure to be ecologically effective.

4.6 The point at which adverse effects are predicted to occur, which will depend on the nature of the impact- i.e.:

4.6.1. For collision: it would be at the point the wind farm becomes operational;
4.6.2. For displacement: it would be at an agreed point relating to when the physical presence of the wind farm infrastructure (operational or not) is deemed to be giving rise to displacement that is impacting on the relevant seabird species' population.
4.6.3. For foraging (direct and indirect): the implications at different life stages for both seabirds and their prey and potential consequences on the age structure of the respective populations must be considered.

4.7 In terms of the duration of compensation, measures will need to be introduced before and maintained beyond the operational lifetime of the development, though the exact duration of the compensation measure will depend on what it is, and ongoing monitoring of the effected population is vital.

Sandeel fishing compensation measures

4.8 RSPB Scotland has reviewed the information submitted by the Applicant with regard to sandeels. It is important to note that sandeel are Priority Marine Features (PMFs) in their own right and are a

focus for conservation in Scottish seas. Policy GEN9 of the National Marine Plan requires that development and use of the marine environment must not result in significant impacts on the national status of Priority Marine Features.

4.9 To aid understanding around the complexities of the sandeels and seabirds, there are several important elements to consider:

4.9.1. Sandeel biomass/abundance (i.e. how many sand eels there are);
4.9.2. Sandeel availability (i.e. are they within foraging range/depth for the relevant predator and around at the relevant time, such as chick rearing); and
4.9.3. Nutritional quality (i.e. how much energy is available from the sandeel)

4.10 In the simplest format, the success of seabirds which forage on sandeels will depend on the abundance of sandeels, the nutritional value of those sandeels and the availability of those sandeels. If a species feeds almost exclusively on sandeel at certain times of year, such as kittiwake during the breeding season, that species will be more vulnerable to changes in the prey stock than those that have more diverse feeding habits. To be of most benefit to seabirds during the breeding season, the peak abundance of highly nutritional sandeels needs to coincide with the chick rearing phase of the seabird breeding season.

4.11 The availability of sandeel is linked to the lifecycle stage of the sandeel (for example whether it is buried in sediment over the winter or swimming in the water column) as well as the foraging behaviour of the seabird species. Kittiwake for example are surface feeders while gannets can dive to depths of twenty meters and puffin typically catch shoaling fish by underwater pursuit. Non-breeding season seabird diets are not well studied due to the challenges of carrying out such research but taking the above elements together it is unlikely that kittiwake feed upon sandeels when they are buried in the sand over the winter. Nevertheless is likely that sandeel are an important prey source throughout the non-breeding period for some species. In addition, environmental factors such as ocean temperature and oxygen levels are also known to impact sandeel biomass and nutritional quality. Water temperature changes for example can lead to a mismatch between sandeel hatching and the availability of their copepod prey with consequences for sandeel survival and secondary impacts to predators as the nutritional quality of the sandeel may be lowered.

4.12 We agree with the Applicant that there is a correlation between more sandeels and more sandeel eating seabirds historically but highlight the mismatch in timings associated with present and future climate changes. This leads to uncertainty and, as set out in scientific evidence reviewed by Scottish Government[11] in support of a sandeel closure the benefit is expected but cannot be guaranteed or quantified.

4.13 The windfarm itself is likely to impact sandeels. Firstly, the proposed array area is on top of a seabed identified as critical sandeel habitat. Sandeel demonstrate high habitat specificity and are highly reliant upon the availability of sandy substrates. Disturbances to the seabed (from piling, cable laying and scour protection) could alter the available of sandy substrates thereby impacting

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[11] *Review of Scientific Evidence on the Potential Effects of Sandeel Fisheries Management on the Marine Environment (www.gov.scot)

sandeel abundance. Secondly, the presence of the turbines has implications for water stratification. Changes in the vertical distribution of sandeels caused either by climate change or the presence of turbines, will change their availability to foraging seabirds. This will be of particular importance to kittiwake as they are restricted to surface feeding and are more reliant of sandeels than other seabirds Impacts around this are unknown and are the subject of the PELAgio research project[12] (part of the Ecological Consequences of Offshore Wind (ECOWind) Programme). Thirdly, the presence of the offshore windfarm itself would causes distribution changes such as reducing foraging within the turbine array area which would limit the availability of sandeels. These impacts of the proposed development must be considered.

4.14 RSPB Scotland considers sandeel fisheries management is a key mechanism by which resilience in seabird populations might be achieved and is a required conservation measure on its own. We believe sandeel fisheries management is required to comply with existing national, regional, and international legal and policy obligations in light of the current evidence of existing pressures and seabird declines associated with prey availability. As noted by the Applicant, this means we do not consider that sandeels fisheries management measures would be additional to actions that should already be taking place already to meet those legal and policy obligations including achieving Good Environmental Status, Favourable Conservation Status, and implementing an ecosystem approach to fisheries management.

4.15 As above it is also important to flag the potential negative impacts of new activities such as marine renewable energy development including threating to further reduce the resilience of already diminished seabird and sandeel populations.

4.16 In July 2023, Scottish Government opened a consultation on proposals to close fishing for sandeel in Scottish waters[13]. The driving narrative of this fisheries management consultation is benefiting broader marine ecosystems in the context of existing national, regional, and international legal and policy obligations. This includes the UK Marine Strategy and the UK Fisheries Act as well as the approach not to allocate the UK proposition of sandeel total allowable catch (TAC) on eco-systems grounds . Clear links are made with Scotland's Fisheries Management Strategy and the overarching Scottish Government position not to support fishing for sandeel in Scottish waters. The proposal under consultation is unambiguously independent of offshore wind development proposals.

4.17 As outlined in the scientific evidence reviewed by Scottish Government [14],[15] associated with the consultation, a sandeel fisheries closure is expected to provide potential environmental benefits for sandeel stocks as well to the marine species that eat them, including seabirds. However, given the complexities in the relationship between sandeel and seabirds, we consider that attempts to quantify the benefits of closures on individual seabird species are highly speculative. The information provided by the Applicant appears to oversimplify a complex relationship. While a correlation between sandeels and fishing exists, it cannot be reduced to 'more sandeels left in the

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12 PELAgIO – The Environmental Research Institute (eri.ac.uk)

13 Sandeel fishing: consultation - gov.scot (www.gov.scot)

14 *Review of Scientific Evidence on the Potential Effects of Sandeel Fisheries Management on the Marine Environment (www.gov.scot)

15 Strategic Environmental Assessment of proposals to close fishing for sandeel in all Scottish waters: Environmental Report (www.gov.scot)

sea' guarantees 'x' more seabirds. In particular, closing the sandeel fishery would not change whether peak sandeel abundance occurs at the optimal time of year for seabirds or whether the sandeel were accessible to the seabirds. It is due to these uncertainties, that whilst RSPB Scotland firmly believes that sandeel fishing closure is a prerequisite to building resilience against existing threats and pressures, it cannot be clearly quantified as required for compensation measures. Our view of sandeel fishing as a resilience building measure is consistent with long-term narrative of Scottish Government, and we have a legitimate expectation that any proposals for sandeel fishing closures would be promoted on this basis.

4.18 The Applicant suggests that if sandeel fisheries management is not pursuant to the normal management of the International Sites Network and there is no requirement for the sandeel fisheries management under any relevant international site management plan, guidance supports the sandeel fisheries management as additional. RSPB Scotland strongly disagrees especially since the Applicant appears not to have taken into account of conservation objectives of European sites nor the International Sites Network management objectives which clearly require measures to conserve, restore if necessary and maintain European Sites and their species. Also as set out above in paragraph 4.16 and 4.17 the Scottish Government's consideration is due to multiple reasons.

4.19 In addition the Habitats Regulations require the exercise the functions to secure compliance with the requirements of the EU Birds and Habitats directives. EU Directive 92/43/EEC Article 6 states that member states shall establish necessary conservation measures. This includes appropriate management plans and appropriate statutory, administrative, or contractual measures which correspond to the ecological requirements of the natural habitat and species. The cessation of sandeel fishing has long been discussed and is an appropriate statutory measure with potential to build resilience in seabird populations, contribute to the ecological requirements of maintaining sufficient prey in the long term, the distribution and extent of habitats supporting the species and the population of the species as a viable component of the site.

4.20 For the avoidance of doubt, RSPB Scotland are not arguing that any possible action which could have ecological benefit should be automatically attributed to helping meet favourable conservation status or meet the obligation to achieve Good Environmental Status. Each action would need to be reviewed on its own merits and the primary purpose of the measure (e.g. resilience building or targeted offsetting for development impacts) considered.

4.21 Overall, **we maintain our position that the closure of sandeel fishing in Scottish waters does not constitute compensation under the Habitats Regulations.**

Gannet Compensation Proposals

4.22 RSPB Scotland understand that the gannet compensation proposals have been provided on a 'without prejudice' basis as the Applicant considers that compensation for gannet is not required as the proposed development would not result in Adverse Effect on Site Integrity (AEoSI) for gannet as qualifying SPA species. RSPB Scotland disagree with this conclusion.

4.23 The proposed development has potential for AEoSI with respect to gannet at the Forth Islands SPA (individual and in-combination with other North Sea windfarms) and at the Hermaness, Saxa Vord and Valla Field SPA (in-combination with other North Sea windfarms) from collision and

distributional change associated from Berwick Bank Offshore Windfarm. Using the methods advocated by NatureScot, Marine Scotland Science and the RSPB during scoping, after the 35-year lifetime, the gannet population size of the Forth Islands SPA is expected to be between 95.7 and 96.8% of what it would have been in the absence of the development alone. When considered with other North Sea development, it is expected to between 80.0 and 84.8% of what it would have been in the absence of the development. At the Hermaness, Saxa Vord and Valla Field SPA, in combination with other windfarms, after the 35-year lifetime, the gannet population size is expected to be between 92.0 and 94.1% and of what it would have been in the absence of the development.

4.24 Although the majority of gannet colonies in Scotland had seen an increase in population numbers, the recent highly-pathogenic avian influence outbreak (HPAI) was partially devastating for gannets. Bass Rock, part of the Forth Islands SPA and the world's largest northern gannet colony for example was badly impacted in 2022 with numerous dead adult birds, abandoned nests and empty spaces where the birds normally are found. The long-term impacts to the gannet colony are not know but exist in addition to the predicted impact of the windfarm. As above, these are substantial. The impact of HPAI in regard to the proposed compensation measure must be considered.

4.25 In regard to the proposed compensation measure, RSPB Scotland wish make clear that we are a nature conservation organisation. There are other highly competent organisations whose focus and expertise are animal welfare, such as the SSPCA and others who have expertise in cultural heritage, such as NTS. Our aim, on the other hand, is to protect and enhance populations of wild birds, their habitats and the wider living diversity that makes up our ecosystems. Whilst we are very aware of issues relating to cultural heritage and the welfare of individual animals and, naturally, do much to enhance these through our work on nature reserves and elsewhere, this is not our primary aim. We are neutral on legal hunting, so long as it does not have a negative impact on the conservation status of the species concerned.

4.26 Sula Sgeir is a small, uninhabited rocky islet located 18 km west of North Rona in Northwest Scotland. It is part of the North Rona and Sula Sgeir SPA and SSSI. The most recent (2010) SSSI site management statement[16] notes that the Gannet harvest is a "*traditional right that has been exercised by Ness people for at least several hundred years"*. It further states that *"The guga harvest on Sula Sgeir does not appear to be causing a decline in the number of gannets and is therefore considered to be compatible with maintaining the seabird populations in favourable condition. If the gannet population were to decline then the quota would have to be re-assessed"*

4.27 Although a number of gannet colonies are surveyed annually, the remote Sula Sgeir is not. To the best of RSPB Scotland's knowledge, historic counts (until 1994) at Sula Sgeir indicate an increase of apparently occupied nest sites . The gannet count in 2004 however suggested a decrease trend of around 1.2% per annum since 1994 contrary to the increasing trend at most (but not all) colonies in Scotland. As the decline could not conclusively be linked to the guga hunt, the taking of the young gannet from Sula Sgier for human consumption continued on the basis that it did not have

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[16] SNH 2010. North Rona and Sula Sgeir - site of special scientific interest - site management statement - site code: 1240. Available from: https://sitelink.nature.scot/site/1240

an adverse effect on the integrity of the North Rona and Sula Sgeir SPA. A more recent count in 2013[17] indicated a small increase of around 2.2% per annum since 2004. More recent (post 2013) information on the status of the Sula Sgeir gannet colony in comparison to other nearby colonies gannet colonies is not available and so it is unknown whether the situation remains as it did in 2013. On the basis of information available, RSPB Scotland do not consider there is a nature conservation reason to cease the guga hunt.

4.28 RSPB Scotland do have concerns as to the feasibility of the proposed measure. If the Men of Ness decide not to reduce the number of guga taken for food to compensate for collision impacts to gannet from the proposed development we are unclear whether, as the Applicant indicates, NatureScot can simply reduce the license numbers. The power to grant licenses under Section 16 of the Wildlife and Countryside Act does not extend to compensation for offshore windfarms. We would welcome clarification on this matter.

4.29 It is reasonable to assume that if the guga harvest reduced the population growth rate of the Sula Sgeir gannet colony and the neighbouring gannet colonies (such as St Kilda, Sule Stack and Flannan Isles) would accelerate until carrying capacity is reached. The impact at the UK scale is likely to be minimal due to the distance and small levels of population exchange between Sula Sgeir and more distant colonies. In order to quantify this, there would be considerable merit in utilising the metapopulation analysis proposed by Jeglinski *et al*., 2023[18])

4.30 Due to the challenges arising from researching large and remote gannet colonies, aerial surveys have emerged as the most common technique for censusing gannet. This method involves capturing high-resolution photographs from an aircraft and subsequently counting the Apparently Occupied Sites (AOS). The terrain and complex coastline of Sula Sgeir however proposes a challenge and counts from aerial surveys may not be sufficiently accurate to pick up small changes in gannet population. To gather more comprehensive data, such as quantifying the number of fledged chicks, juveniles, and immatures across the entire islet or in a representative sample, alternative methods like land, boat, and drone surveys (or a combination of the methods) could be more effective. These however also have disturbance potential and could negate any reduction in disturbance from reducing the guga hunt. Monitoring the success of the proposed compensation measures must be carefully considered and further information on this aspect would be required should the proposed compensation measure be taken forward.

4.31 Overall, we do not consider this measure is ready to be taken forward as a compensation proposal. As the application can only be permitted through the derogation process, securing compensation goes to the heart of the acceptability. Leaving this detail to pre-commencement condition risks undermining the derogation process and could result in an unimplementable development consent. This would be unhelpful to both the Applicant and other windfarm developers. It could

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[17] Wanless, S., Murray, S., Harris, M., 2015. *Aerial survey of northern gannet (Morus bassanus) colonies off NW Scotland* 2013. Scottish Natural Heritage Commissioned Report 696, 1-21

[18] Jeglinski, J.W.E., Wanless, S., Murray, S., Barrett, R.T., Gardarsson, A., Harris, M.P., Dierschke, J., Strøm, H., Lorentsen, S.H., Matthiopoulos, J., 2023. *Metapopulation regulation acts at multiple spatial scales: Insights from a century of seabird colony census data.* Ecological Monographs 93.

also complicate Scotland achieving its greenhouse gas reduction and climate change targets in accordance with the Government published strategies.

INNS eradication at Inchcolm and Handa

4.32 As part of the proposed package of compensation measures, the Applicant has proposed to eradicate Brown rat from Handa island (Northwest Scotland) to benefit the breeding success of kittiwake, guillemot, razorbill and puffin on the island. They have also proposed to eradicate Black rats from Incholme island (Firth of Forth) to benefit kittiwake, guillemot, razorbill and puffin. We understand that the Incholme INNS eradication remains a secondary colony measure and would be implemented as part of an adaptive management programme should eradication on Handa not delivered the required outcome.

4.33 We have reviewed the additional information provided by the Applicant, but a number of concerns remain. Several times the Applicant has used 'should' to reflect the best practice guidance. For example, the Applicant has stated that operators 'should' be made aware that rats may reject bait treated with a bittering agent, the baiting 'should' begin in November and that each bait station 'should' have a number and plotted using GPS. We welcome use of the best practice guidance to design the project but are concerned that 'should' is not a commitment and nor does it demonstrate that the Applicant has fully considered the practical aspects. A commitment that they 'will' carry out these recommendations would be more appropriate.

4.34 Of primary concern is technical feasibility. The information submitted indicates that both projects would initially use Romax Rat CP, the active ingredient of which is coumatetralyl. To the best of our knowledge authorisation for this as a rodenticide has expired, and it is not approved for UK use. As an aside, coumatetralyl has been used in very few successful eradications where the toxicant is stated and so its efficacy in eradication is unproven. Both projects also proposed to use Bromadiolone as a backup. This is problematic also. Second-Generation Anticoagulant Rodenticides (SGAR) such as Bromadiolone are not permitted for use in open areas (i.e. outside and away from buildings) after the end of 2024. The loss of SGAR from open area use is not unique to the proposed compensation measure but it does have technical feasibility repercussions for INNS eradication schemes. The 'green' RAG rating for technical feasibility is premature and should the measure be taken forward, further information on this aspect is required.

4.35 We remain unsure as to whether A24 multi-kill traps are proposed to be used on Handa. Table 4 of the feasibility study concludes they are impractical and experimental but within the 'Bait Station grid density' section it is suggested they will be used in high risk or difficult access sites such as cliffs, stacks, islets, and remote sites. Clarification is required.

4.36 For both projects, the feasibility studies indicate that the people carrying out the eradication work would not stay on the island whilst the work is being caried out. Clarification on whether this is the case is required. Traps should be checked regularly. Placing additional bait to counteract absences (such as not being able to access the island in bad weather) is inadvisable as increases the probability that the bait becomes mouldy. This in turn which makes it less appealing to the rats, hindering the eradication programme timescales and efficacy. Overall further information on how this risk would be managed is required. With the information available, the 'green' RAG rating is premature for the 'capacity' criteria.

4.37 Biosecurity is paramount to ensure the long-term success of any eradication project. For Handa in particular, we are concerned the reinvasion risk has been downplayed. The island is just 350 meters from the mainland and there are other islands just 100 meters offshore. Furthermore the island has been re-invaded by rats following a previous successful eradication. Both the Inchcolm and Handa studies appear to assume that the long-term biosecurity will be carried out by local operators. No confirmation of who this local operator would be or a commitment to pay for the on-going biosecurity has been provided. With the information currently available, the 'green' RAG rating for sustainability is again premature. Amber would be more appropriate. We recommend the submission of a detailed biosecurity plan and securing a commitment to funding ongoing biosecurity should the measure be taken forward.

4.38 Specially for Handa, we are concerned that the risks identified all relate to a one-off baiting operation on the island rather than a 35 year plus buffer control programme. It is not clearly stared how long the mainland buffer would be maintained for, but we assume as a minimum it will be for the length of the windfarm plus the time it takes for the impacted species to recover. This requires clarification. In addition, the impact of prolonged bait use on other fauna (e.g. small mammals and raptors) should be fully assessed. RSPB Scotland are wary of a proposal to use non target specific bait for a long duration over a sizable are in an attempt to protect an island from reinvasion. The social and political acceptability also requires further detail – it is unclear whether occupants of the buffer area would be asked to be involved, for example having bait in their homes/land. Without details confirming what has been discussed and agreed with the buffer zone landowners and residents, we feel an amber/red rating is more appropriate. It appears that greater assessment on social and political acceptability has been carried out at Inchcolm and with the information available, we agree with the amber 'RAG' ratings for these elements.

4.39 We remain concerned that rat eradication would not benefit cliff nesting species, including guillemot and kittiwake, both of which are target species for compensation measure. We also consider some of the projected population increases (e.g. guillemot on Inchcolm) and time to achieve them (e.g. for puffin) are overly optimistic given the time for seabird populations to recover and the species record regularly breeding on the island.

4.40 Overall, and notwithstanding the technical feasibility elements, RSPB Scotland consider the Inchcolm feasibility study to be more advanced than the Handa feasibility study. At Handa, we are concerned that the social and political acceptability aspects have been under investigated resulting in prematurely optimistic conclusion. The plan of works for the buffer zone requires a proper risk assessment and evidence of local engagement. For both INNS eradication programmes, greater commitment to the ongoing biosecurity is required. Further information is required before the INNS eradication proposal at Handa or at Inchcolm could take place.

4.41 As the application can only be permitted through the derogation process, securing compensation goes to the heart of the acceptability. Leaving this detail to pre-commencement condition risks undermining the derogation process and could result in an unimplementable development consent. This would be unhelpful to both the Applicant and other windfarm developers. It could also complicate Scotland achieving its greenhouse gas reduction and climate change targets in accordance with the Government published strategies.

Wardening at Dunbar

4.42 The updated information provided includes assessment of potential net-benefits to the Dunbar Kittiwake colony based upon the non-SPA apportioned impacts. These indicate a predicted mortality for adult kittiwake of between 0.7 and 1.1 per annum. As such, the proposed measure would need to deliver at least one more adult bird to account for this loss. The scale of benefit from the proposed measure however remains small in the context of total predicted kittiwake mortality from the development.

4.43 Despite the Applicant's best effort searching, evidence on disturbance to kittiwake at Dunbar appears not to be readily available. This is a flaw in assessing the ecological effectiveness of the proposed measure. Disturbance may not be the reason for the decline in productivity at the colony.

5. Conclusion

5.1. Having reviewed the additional information, **RSPB Scotland maintains our objection to the proposed development.** Ultimately the site is inappropriate for the proposed development. An offshore windfarm in this location would cause serious and irreparable harm to biodiversity. The application does not constitute sustainable development and so is contrary to the National Marine Plan, the foundation upon which decisions for development in the marine environment should be made.

5.2. It is also our view that the requirements of the Habitats Regulations have also not been met in regard to demonstration of no alternatives. In addition, and as set out above, we do not consider the compensation measures as currently proposed are sufficient.

Royal Yachting
Association
Scotland

From: Pauline McGrow
To: MS Marine Renewables
Subject: RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - Response by 3 October 2023
Date: 05 September 2023 09:35:32
Attachments: image003.png
image005.png
image007.png

Hi Becca,

I write to inform you that RYA Scotland has no comment that they wish to make on this application.

Kind Regards

Pauline

Pauline McGrow
Senior Administrator
[Redacted] **Scotland**
T: 0131 317 7388
E: pauline.mcgrow@ryascotland.org.uk

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Scottish Seabird Centre

Scottish Seabird Centre
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North Berwick
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T: 01620 890 202
info@seabird.org

Via e-mail for the attention of: Rebecca.Ross@gov.scot
Cc: ms.marinerenewables@gov.scot
Rebecca.Bamlett@gov.scot
Emma.Lees@gov.scot

17 October 2023

Dear Rebecca,

Berwick Bank Offshore Wind Development [additional information]

This letter is in response to the additional information provided to Marine Directorate by SSE - Renewables to support their case for the proposed Berwick Bank Offshore development. Having carefully reviewed the additional information the Scottish Seabird Centre continues to **maintain its objection to the proposed development** at this site and at the scale proposed by the developer.

The reasons are largely as set out in our initial letter of the 31 March 2023 in that the measures in the derogation case are flawed and the level of uncertainty around both the impacts and the effectiveness of the derogation case are so great that the precautionary principle must be fully applied. Approval would:

- contravene Regulation 48 (5) of the Conservation of (Natural Habitats, &c.) Regulations 1994 as the proposed development is at a scale that will adversely affect the integrity of several Special Protection Areas (SPAs); and
- under Regulation 49 (1-2) we believe that insufficient evidence has been presented to demonstrate that there are no alternative solutions to the plan or project and therefore the overriding public interest tests cannot be applied.

In terms of some of the additional information supplied our position is as follows:

- **Constraining ScotWind potential**: The applicant has brushed aside the challenge to adequately demonstrate that other sites within the ScotWind leasing areas are unsuitable for developments which would achieve, directly or in combination, the same or more energy output but with less environmental harm. We believe that if this development is consented it will severely constrain the potential for development from other offshore sites which could be consented within timescales that would still allow the Scottish Government to meet its renewable commitments.
- **Sandeel fishery closures**: The Scottish Government's proposal to close sandeel fisheries is welcomed, however, we believe there is insufficient certainty around the relationship between the closure and benefits to different seabird species to use this as a strategic compensation measure for offshore wind developments. Marine Directorate's own report: 'Sandeel fishing consultation: review of scientific evidence' (2023) sets out these uncertainties well. It states

that "*Establishing a relationship between industrial sandeel fisheries and seabird demography is extremely challenging … confidence in results can be low.* And that *"due to differences in seabird life-history, ecology and diet, the dependency on and vulnerability to changes in sandeel biomass and availability varies among species."*

- **Highly Pathogenic Avian Influenza (HPAI):** The modelling around the development proposal fails to take account of the significant impact that highly pathogenic avian flu has had, and continues to have, on our seabird populations around the coast of Scotland and more widely. We have, in partnership with the University of Edinburgh's School of Geosciences and the UK Centre for Ecology & Hydrology, recently completed an assessment of the Bass Rock Northern gannet colony. This – in confidence until after 25/10/23 - reveals that the size of the Northern gannet population has decreased from 75,000 sites to around 55,000 sites (25-30% decline) following the 2022 HPAI outbreak. There remains a significant level of uncertainty around how the colony demographics have changed, the level of resistance which has been built up to HPAI and whether further waves of the disease may impact surviving birds in future years. This level of uncertainty has not been built into the developers modelling. Other species, such as black-legged kittiwakes, were also affected more in the latter part of 2023 and it is too early to predict the colony and/or population level impact of the disease on species such as these which are already listed by IUCN as being vulnerable.
- **Sula Sgeir gannet cull:** the applicant also proposes a, without prejudice, new compensation measure to reduce the gannet cull at Sula Sgeir. This appears to be based on limited tracking evidence of gannet movements between the East and West coast colonies. These connections are insufficient to use changes at Sula Sgeir as a basis for compensation for the Bass Rock Northern gannet colony (or other east coast sites) which would be directly impacted if the development goes ahead. We also question whether the licensing processes in place would be sufficient to bring about the change – through negotiation – or whether a change in the law would be required.

We fully recognise that Scotland's seas are a great source of renewable energy and that offshore developments are an important strand of the Scottish Government's commitment to meeting the legally binding target of 'net zero' by 2045. We maintain however, especially in the face of a nature crises, that the locations chosen for and the design and scale of offshore developments, must not significantly damage the marine environment and its wildlife. If Scottish Ministers are minded to consent this development we would request that this should only be after consideration of the issues through a Public Local Inquiry.

The applicant did not proactively share or discuss any of its additional information with us following our initial objection. We remain willing to have meaningful conversations with the developer, NatureScot and environmental NGOs, to see if there are ways of reducing the scale of impact of this proposal to a level that would cause less harm.

Your sincerely,
[Redacted]

Susan Davies,
CEO

Scottish Environment Protection Agency

From:	Planning South
To:	MS Marine Renewables
Cc:	Rebecca Bamlett; Emma Lees; Rebecca Ross
Subject:	RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - Response by 3 October 2023
Date:	07 September 2023 17:24:08
Attachments:	image001.png

OFFICIAL

Dear Rebecca Ross,

Thank you for the above consultation.

We have no comments to make as the additional documents provided are addressing issues raised by NatureScot and Torness Power station and are outwith SEPA's remit. We refer you to our Standing advice (see link below) for elements that may relevant as SEPA usually comments only in relation to on-shore aspects of the development. We believe we will be consulted separately on the landfall and other on-shore aspects.

SEPA standing advice for the Department for Business, Energy and Industrial Strategy and Marine Scotland on marine consultations.

If there is a significant site-specific issue, not addressed by our guidance or other information provided on our website, with which you would want our advice, then please reconsult us highlighting the issue in question and we will try our best to assist.

I trust these comments are of assistance - please do not hesitate to contact me if you require any further information.

Kind regards,
Silvia Cagnoni
Senior Planning Officer

Disclaimer: This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications, if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our website planning pages.

Scottish Fishermen's Federation

From:	Mohammad Fahim Hashimi
To:	MD Marine Renewables
Cc:	Rebecca Bamlett; Elspeth Macdonald
Subject:	RE: Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - Response by 3 October 2023
Date:	02 October 2023 17:15:22
Attachments:	image001.png

Dear Rebecca,

Thank you for sharing this consultation opportunity with SFF.

As the responses and additional information provided do not address any of the SFF's comments; therefore, SFF reconfirm its response that was filed on the initial Berwick Bank Wind Farm License Application consultation on 27th February 2023.

Best wishes

Fahim Mohammad Hashimi

Offshore Energy Policy Officer

Scottish Fishermen's Federation (SFF)

T: +44 (0) 1224 646944 | M: [Redacted]

Transport Scotland

From:	Iain Clement
To:	MS Marine Renewables
Cc:	llogan@systra.com; Gerard McPhillips; DEVENNY Alan; Andrew Erskine; Rebecca Ross
Subject:	Berwick Bank Offshore Wind Farm - Additional Information Application Consultation - Main Consultees - TS Comments - 27-Sep-23
Date:	27 September 2023 12:20:54
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png

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FAO Rebecca Ross

Afternoon Becca,

On behalf of my colleague, Gerard McPhillips, thank you for the opportunity for Transport Scotland to comment on the Additional Information (AI) submitted in support of the application for Berwick Bank offshore Wind Farm, located off the coast of East Lothian and the Scottish Borders.

Transport Scotland was consulted on the Environmental Impact Assessment Report for this application and provided comment in a letter dated 21st February 2023. In this, we noted that a separate application would be submitted for the onshore elements of the Project and that the topic of Traffic and Transport was scoped out of the assessment. Consequently, Transport Scotland had no comment to make on the Offshore EIAR itself, but requested that a Condition relating to the submission of a Construction Traffic Management Plan be included in any consent that may be granted.

Having reviewed the AI information, I can confirm that Transport Scotland is satisfied that this has no bearing on the trunk road and will have no impact on the conclusions of our previous response dated 21st February 2023. Consequently, the comments contained therein remain valid and we have no further comment to make at this time.

For ease of reference, I have included our requested Condition below:

- Condition 1: Prior to commencement of deliveries to site, a Construction Traffic Management Plan must be submitted to and approved by Transport Scotland to ensure that general construction traffic and abnormal loads can be transported along the trunk road network safely and efficiently.

  Reason: To minimise interference and maintain the safety and free flow of traffic on the Trunk Road as a result of the traffic moving to and from the development.

Kind regards,

Iain

Development Management
Network Operations
Roads Directorate
transport.gov.scot

Transport Scotland, 2nd Floor, George House, 36 North Hanover St, Glasgow, G1 2AD

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

Transport Scotland, the national transport agency
Còmhdhail Alba, buidheann nàiseanta na còmhdhail

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Gillian Martin MSP
Minister for Energy, Just Transition and Fair Work
Scottish Government
St Andrew's House
Regent Road
Edinburgh
EH1 3DG

2nd April 2024

Dear Minister,

I would like to register my objection to SSE Renewable's Berwick Bank Offshore Wind Project located in the Outer Firth of Forth. I **strongly** echo the sentiments expressed by National Trust for Scotland, National Trust, Scottish Wildlife Trust, RSPB & Scottish Seabird Centre. I believe the development should be refused development consent for the following reasons:

- Berwick Bank would negatively impact seabird colonies in SPAs. Development which undermines the conservation objectives of SPAs cannot be legally permitted unless the applicant meets the threshold for 'derogation'. This threshold consists of three tests relating to alternative sites, overriding public interest, and providing meaningful compensation measures. I disagree with SSE's stance that there no viable alternative sites. SSE-Renewables have several leases for other, less sensitive locations. The ScotWind & INTOG process has identified up to 30GW of offshore wind deployment with many in less sensitive locations. Consequently, the derogation test simply cannot be met and to approve the application would contravene environmental protection legislation Scottish Government has promised to uphold.

- The Development overlaps with the Firth of Forth Banks Complex MPA. We should be siting developments outwith protected areas that have the purpose of nature conservation/recovery.

- I agree with the concerns over the accuracy of the approach used in the Berwick Bank application to identify the impact on seabirds, and how robustly the seascape, visitor experience and special qualities at St Abb's Head National Nature Reserve have been assessed. Berwick Bank would be the largest windfarm in Scotland, consisting of over 300 turbines covering an area four times the size of Edinburgh. Each of the turbines would be the height of six Scott Monuments, which gives an indication of the scale and impact to the seascape and visitor experience at St Abb's Head National Nature Reserve and the wider coastline. Predicted seabird mortality is very high, especially when compared to other offshore windfarms (e.g. Kittiwake mortality is predicted to be seven times higher than predicted for the Hornsea Three windfarm). This mortality rate will have a particularly detrimental impact on seabirds such as Puffins, Kittiwakes, Gannets and Razorbills, which are already under huge pressure from climate change, prey availability and Avian Flu. RSPB very recently led the HPAI Seabird Survey Project, which found that Avian Flu has resulted in declines of over 10% in nine seabird populations. Of relevance to Berwick Bank, the counts found there has been 25% decline in breeding numbers of Gannets which has reversed a previously positive trend. It is critical to the recovery of seabirds that new pressures are not added to those they currently face. Steps, such as the Scottish Government's recent indication that they plan to close the

Scottish Sandeel fishery, are being taken to secure the long-term sustainability of Scotland's seabirds. Consenting this application would be inconsistent with such positive steps.

- Developer compensation measures are flawed and lacking in detail. The proposed measure to close SA4 to Sandeel fishing to benefit the Kittiwake population will have a limited effect on prey availability. Managing sustainable fisheries is good practice and should not be substituted as a compensation measure for the adverse impacts of the development. SSE-Renewables also proposes financing a warden role and adding artificial nests at Dunbar Castle. However, there is not a lack of nesting sites at Dunbar Castle, meaning this measure will not effectively add to the Kittiwake population. The associated impacts are within Kittiwake foraging areas where the development lies, not nesting opportunities. The third proposed compensation measure is to increase biosecurity on Handa. These measures are inadequate, given the high risk of rats re-invading the island, and ineffective, as Kittiwakes commonly nest on steep cliffs where it is difficult for rats to access.

The Firth of Forth is home to internationally important seabird populations and these are not worth damaging in the pursuit of net zero. We cannot move seabird colonies and should not be facilitating developments that contribute to the potential **extinction** of some of our most precious wildlife. We cannot tackle the dual challenges of climate change and biodiversity loss by pitting these issues against one another. I implore you to reject this development and work with the developer and NGOs to facilitate a better site. If consented, then there is no point in Scotland's nature recovery plans if you are actively going to contravene them.

Yours Sincerely,

Redacted

Redacted

From: Redacted <Redacted >
Sent: Saturday, April 20, 2024 10:50 PM
To: Minister for Energy, Just Transition and Fair Work <ministerejtfw@gov.scot>
Subject: Serious Concerns about Berwick Bank

Dear Minister,

I am writing to express my support for the letter regarding Berwick Bank which was recently sent to you by RSPB Scotland, the National Trust for Scotland, the Scottish Seabird Centre and the Scottish Wildlife Trust.

I strongly agree that the wind farm must be moved to another site which has less of an impact on seabird populations.

I was lucky enough to visit Bass Rock two years ago but even though so much time has passed, I still remember it vividly because it was such an awe-inspiring trip. The boat sped out over the sea and all around us there were gannets, flying level with the boat and then overtaking us, as they returned to their nests. I remember the inspiring sight of the parents battling the wind to return to their chicks, which were waiting longingly for their next meal. As we circled the island I spotted a gannet which seemed to be watching us with its piercing blue eyes. I remember thinking that it was the most beautiful bird I had ever seen, until we rounded the corner and we saw kittiwakes perched on the ledges, razorbills frowning down at us and guillemots whirring away over the water. I realised that they were all equally stunning, yet in unique ways. I felt like I was visiting a block of tenement flats, filled with different birds, all neighbouring one another and part of a wider community which spans the oceans and gives the seas their life, spirit and brightness.

I do not wish to repeat what has already been said in the letter I mentioned but only to tell you that I strongly believe that what the organisations have told you seems not only logical to me, but essential advice which should surely catalyse changes to the plans.

I also wish to emphasise just how important I believe renewable energy is for Scotland's future so that we can combat climate. However, we must not make wind farms at the expense of our seabirds' lives. If we add another threat to seabirds by creating harmful wind farms then the benefits which combatting climate change could have brought to our birds would only be counterbalanced and become meaningless.

If we lose anymore seabirds then one day people might not be able to go to Bass Rock, or other incredible sites such as St Abb's Head National Nature Reserve, and be able to experience the joy of a thriving seabird colony. If that happened, Scotland would lose not only part of its beauty, but also part of its culture.

Thank you for taking the time to read this and I urge you to ensure that Berwick Bank is moved to a less harmful location.

Yours sincerely,

Redacted

Emma Lees

From: Emma Lees
Sent: 10 April 2024 09:59
To: Emma Lees
Subject: Urgent - Berwick Bank objection - Off shore wind farm

Importance: High

-----Original Message-----
From: Redact <Redacted >
Sent: Thursday, March 14, 2024 11:45 AM
To: MD Marine Renewables <ms.marinerenewables@gov.scot>
Subject: Off shore wind farm

Dear sir or Madam
I am shocked to hear there is to be an another wind farm this close to our beautiful north east fife. Please please reconsider the development of Berwick bank wind farm.
The first of the fourth as an important breeding ground for many sea birds, including granites, puffin shag cut your works et cetera. During the breeding season bass rock has the largest colony of garnets in the world on the island of May island and is home to quarter of 1 million seabirds.

There is already an offshore windfarm being built off Fifeness near Crail why do we need another one it's not as if we in fife get any benefit from it or our electricity bills cut.
I feel this is a horrible sight we now have in our view evert time we drive along the east fife road to crail without creating another one another so close to our shores

We are just beginning to see a large number of dolphins, whales, proposes seals etc in our area and they two will be impacted. We have a number of ships bringing in lots of tourists to Edinburgh and surrounding areas this could also have a big impact on them.

Kind Regards
Redacted

Emma Lees

From: Redacted <Redacted >
Sent: 27 January 2024 16:37
To: MD Marine Renewables
Subject: Berwick Bank wind farm

Hi,

I'm writing to you as a resident of coastal East Lothian.

The proposed new wind farm at Berwick Bank has only recently come to my attention and I've become aware of the significant and well-researched objections to this particular site that Nature Scot, RSPB, National Trust for Scotland, Marine Conservation Society, Scottish Seabird Centre, Scottish Wildlife Trust and Whale and Dolphin Conservation have raised.

Whilst I'm strongly supportive of the development of offshore and onshore wind farms and other forms of renewable energy, there are sites that would be much less damaging to the environment and public enjoyment of nature than the Berwick Bank site. I understand that ScotWind leasing sites are available further out in the North Sea where the impact on seabirds, marine life and public utility would be much lower.

Please will you advise those who will make a final decision on this site (I understand that will be Neil Gray and Gillian Martin) to reject this proposal and require and support the developers to reconsider sites further out to sea?

Yours sincerely,

Redacted
Redacted

Emma Lees

From: Emma Lees
Sent: 10 April 2024 09:58
To: Emma Lees
Subject: FW: Urgent - Objection The Berwick Bank offshore Wind Farm Development
Attachments: Redacted

Importance: High

From: Redacted <Redacted >
Sent: Thursday, March 14, 2024 8:55 AM
To: MD Marine Renewables <ms.marinerenewables@gov.scot>
Subject: The Berwick Bank offshore Wind Farm Development

Dear Sir / Madam,

Please reconsider the development of Berwick Bank Wind Farm.

The Firth of Forth is an important breeding ground for many seabirds including gannets, puffins, shags, kittiwakes, fulmars, guillemots, cormorants, eider ducks and gulls. During the breeding season, Bass Rock has the largest colony of gannets in the world and The Isle of May is home to a quarter of a million seabirds.

These birds raise their young in the Firth of Firth and their feeding grounds are within these waters and beyond. Please see the attached analysis of gannets' feeding areas.

There is already an offshore windfarm being built off Fife Ness, near Crail. The seabirds will have to navigate around both this one to the north and the proposed Berwick one to the south east. This will come when the bird colonies are already struggling with the recent catastrophic outbreak of bird flu in this area.

There are dolphins, porpoises, whales, seals in this area and they too will be impacted.

Additionally, this windfarm will deter tourists who come to Fife for the beautiful landscape and to see the wildlife. Both will be negatively impacted by this windfarm, which will put off tourists from visiting and inevitably impact the economy of this area which heavily relies on it.

My voice is just one amongst many that I know who have raised concerns. Until it was on the local STV News this week, many people were not aware of the Berwick Bank Wind Farm. I hope this email is not 'too late', as it maybe for may poor seabirds, should the windfarm development go ahead.

Regards,
Redacted

Redacted

Cod	4	26.2	3.29	20	30
Unidentified gadoid	8	18.0	1.83	12	24
Flatfish	9	21.3	1.76	12	27
Grey gurnard	3	13.0	1.00	11	16
Salmon	2	26.0	0	26	26
Trout	1	34.0	–	–	–
Greater forkbeard	1	25.0	–	–	–

[a]Based on all otoliths extracted from samples

There was a highly significant relationship between maximum distance from the colony and trip duration (Fig. 4; $F_{1,67} = 988.7$, $p < 0.0001$, $R^2 = 0.94$), according to the following equation:

$$\text{Maximum distance (km)} = 7.05\ (\text{SE} \pm 0.22)\ \text{trip duration (h)} \quad (2)$$

Average speed over complete foraging trips was thus equal to 14.1 (SE ± 0.4) km h^{-1} (twice the slope of Eq. 2).

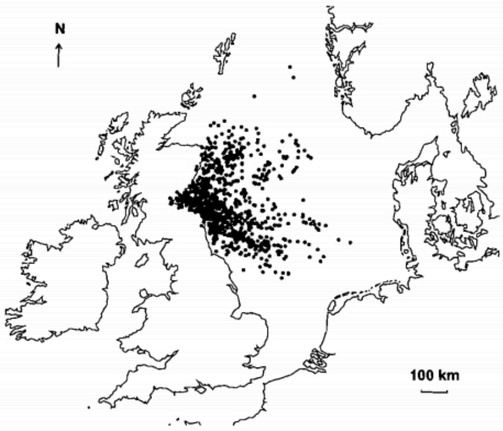


Fig. 1. *Morus bassanus*. Foraging range of gannets from Bass Rock, SE Scotland, based on 1327 locations (all recorded locations of Class A and above; see 'Materials and methods' for explanation) from 17 chick-rearing adults over period of 45 d

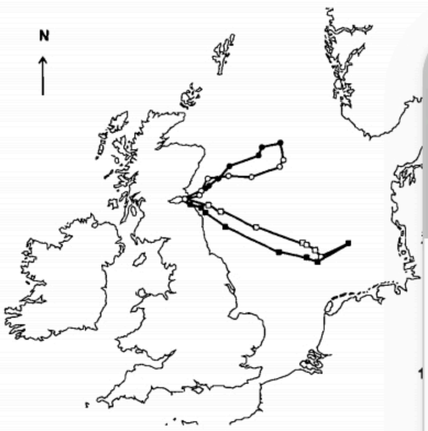


Fig. 2. *Morus bassanus*. Examples of typical routes t foraging trips by chick-rearing gannets from Bas (■) outward path; (□) return path

Speeds of travel over intervals within trips were calculated using consecutive pairs of locations at sea with >1 h between them (see 'Materials and methods – Satellite tracking of adults'). The mean of these values was 18.1 km h^{-1} (n = 797, SD ± 16.6), which was similar to the mean over entire trips. The mean speed during hours of darkness (23:00 to 4:00 h) was very low (1.6 km h^{-1}, n = 30, SD ± 1.9), indicating that birds did not fly at night; the mean speed during daylight was substantially higher (22.3 km h^{-1}, n = 767, SD ± 31.6; Mann-Whitney $Z = 5.82$, $p < 0.0001$). Speed of travel during hours of daylight was highly dependent on the interval between locations (linear regression; $F_{1,765} = 132.9$, $p < 0.0001$, $R^2 = 0.16$), according to the following equation:

$$\text{Travel speed (km h}^{-1}) = 28.4\ (\text{SE} \pm 0.9) - 1.9\ (\text{SE} \pm 0.1)\ \text{interval (h)} \quad (3)$$

The maximum ground speed recorded was 81 km h^{-1}, but only 1% of values were >68 km h^{-1} and only 5% were >56 km h^{-1} (Table 3).

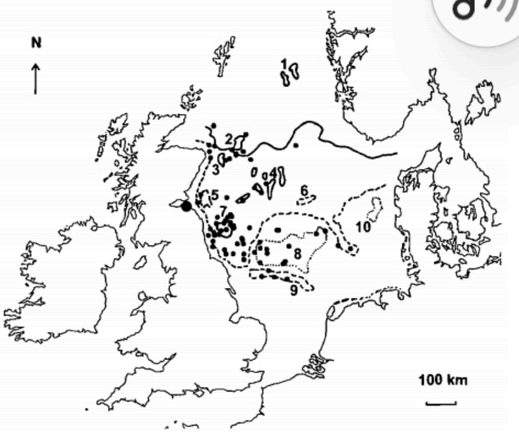
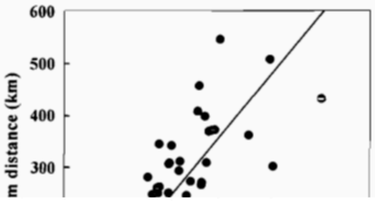


Fig. 3. *Morus bassanus*. Destinations of foraging trips by chick-rearing gannets at Bass Rock. Based on 72 trips from 17 adults with data received at average intervals of <3 h. Major bathymetric features of North Sea within foraging range of adults are also illustrated. Isobaths redrawn from UK Admiralty International Charts 2182B (Central North Sea) and 2182C (Northern North Sea). (———) 100 m, (---------) 50 m, (·····) 30 m. 1: Bergen/Viking Bank, 2: Halibut bank, 3: Buchan Deep, 4: Devil's Hole, 5: Wee Bankie/Marr Bank, 6: Fisher Bank, 7: Farne Deep, 8: Dogger Bank, 9: Outer Silver Pit, 10: Jutland Bank

Impacts of PTTs on adults

There was no difference in body mass between control birds (mean = 2.89 kg, n = 40, SD ± 0.23) and birds that had been carrying PTTs for up to 21 d (mean = 2.93 kg, n = 16, SD ± 0.24; Student's *t*-test using pooled variance estimate; $t_{54} = 0.6$, $p = 0.6$). There was an average of 0.87 changeovers per nest per day at control nests, giving a mean trip duration of 27 h. This was no



PTTs took only 5 min on average, and birds were handled only once prior to data collection. The lower proportion of high-quality (Class A and above) locations for the colony than for birds at sea in our study (see 'Results') probably resulted from poorer visibility of the tags to orbiting satellites when the birds were on land, rather than because tagged birds spent more time at sea than on land.