Bowdun Offshore Wind Farm, Derogation Case

Compensation Roadmap

TWP-BOW-RPS-ENV-RPT-00042 | April 2026

Contents

List of Tables

Glossary

Defined Term	Definition
Applicant (the)	Bowdun Offshore Wind Farm Limited (BOWFL).
Appropriate Assessment (AA)	An assessment to determine the implications of a plan or project for a European site in view of that site's conservation objectives. An Appropriate Assessment forms part of the Habitats Regulations Appraisal (HRA) and is required when a plan or project (either alone or in combination with other plans or projects) is likely to have a significant adverse effect on a European site.
Array Area	The Array Area is the area in which the Offshore Generation Assets will be located.
Barrier Effects	The effect by which an animal or bird has to make longer transits between a breeding or roosting location to an area of foraging. An Offshore Wind Farm (OWF) could act as a barrier in which a species has to fly around to reach the other side, some species are unlikely to travel through or over.
Bowdun Offshore Wind Farm Limited (BOWFL)	A Special-Purpose Vehicle (SPV) (legal entity) for the purpose of developing the Project. BOWFL are the Applicant for the Offshore Application.
Collision (Ornithology and Bat)	The effect by which a bird, or bat, may be impacted by direct collision. Birds passing through an OWF are at risk of colliding with the Wind Turbines (moving and stationary parts).
Commercial Fishing	Any form of fishing activity legally undertaken where the catch is sold for taxable profit.
Compensation/ Compensatory Measures	If an Adverse Effect on Site Integrity (AEoSI) on a designated site is concluded or cannot be ruled out during the Appropriate Assessment, there are no alternative solutions, and the project must be carried out for imperative reasons of overriding public interest, compensatory measures for the affected Qualifying Features of the site will be required, as necessary to ensure the overall coherence of the National Site Network is protected. The term 'compensatory measures' is not defined in the Habitats Regulations. Compensatory measures are independent from mitigation measures embedded in the design of the project or proposed to reduce or offset the adverse effects of the project under the EIA.
Competent Authority	The term derives from the Habitats Regulations and relates to the duties that the Regulations impose on public bodies and individuals. Regulation 6(1) defines Competent Authorities as 'any Minister, government department, public or statutory undertaker, public body of any description or person holding a public office'. In the case of the Proposed Development, the Competent Authority is Marine Directorate-Licensing Operations Team (MD-LOT) acting on behalf of the Scottish Ministers.
Displacement	An impact that occurs when an animal is forced away from an area of habitual usage. This can be temporary (i.e. a ship moving) or permanent (i.e. the placement of offshore infrastructure).
Effect	Term used to express the consequence of an impact (i.e. the result of change or changes on specific environmental resources or receptors). The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity of the receptor or resource in accordance with defined significance criteria.

Defined Term	Definition
Environmental Impact Assessment (EIA)	Process for the assessment of likely significant environmental effects of a project on the physical, biological and human environment during construction, Operation and Maintenance (O&M) and decommissioning.
European Sites	This term recognises SACs, candidate SACs (cSACs), Sites of Community Importance (SCIs), Special Protection Areas (SPAs), possible SACs (pSACs), potential SPAs (pSPAs) and Ramsar sites (where also designated as another European Site), which protect species and habitats shared across Europe and were originally designated under European legislation.
Export Cable Corridor	The area seaward of Mean High Water Springs (MHWS), which connects the Array Area with the Landfall within which the Offshore Export Cables will be installed.
Habitats Regulations	A term that refers to the collective legislation that translates the Habitats Directive into specific legal obligations in Scotland, namely: The Conservation (Natural Habitats, &c.) Regulations 1994; The Conservation of Habitats and Species Regulations 2017; and The Conservation of Offshore Marine Habitats and Species Regulations 2017 (in each case as amended).
Habitats Regulations Appraisal (HRA)	An assessment carried out under the Habitats Regulations to determine if a plan or project could adversely affect the integrity of a European Site.
Impact	A change caused by an action that occurs during a project's lifetime.
Inter-Array Cables (IAC)	Cables which link the Wind Turbines to each other and with the Offshore Substation Platforms (OSPs).
Interconnector Cables	Cables which will connect individual OSPs to each other to provide redundancy against cable failure elsewhere.
Landfall	The area in which the Offshore Export Cables make landfall and is also the transitional area between the Offshore Transmission Assets and the Onshore Transmission Assets. Located in the Intertidal Area at Benholm.
Likely Significant Effect (LSE)	A significant effect on a designated site that has the potential to occur as a result of the Proposed Development (as determined by the LSE Screening Report). Where a LSE cannot be ruled out, further assessment is needed as part of the AA.
Marine Directorate (MD)	The Marine Directorate of the Scottish Government, formerly known as Marine Scotland. The planning and licensing authority for Scotland's seas and custodian of Scotland's National Marine Plan (NMP). The Marine Directorate - Licensing Operations Team (MD-LOT) are specifically responsible for managing Section 36 Consent and Marine Licence Applications seaward of MHWS.
Marine Licence	A Marine Licence permits the undertaking of different activities in the marine environment, including construction, the deposition or removal of substances or objects, and dredging. The Marine (Scotland) Act 2010 requires Marine Licences to be obtained for licensable activities taking place within Scottish Territorial Seas (MHWS to 12 nm). The Marine and Coastal Access Act (MCAA) 2009 requires a Marine Licence to be obtained for licensable marine activities within the Scottish offshore region (12 nm – 200 nm).

Defined Term	Definition
Marine Protected Areas (MPAs)	MPAs are designated under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act (MCAA) 2009. The MPA network protects nationally and internationally important marine wildlife, habitats, geology, and underwater landforms. Scotland's MPAs are significantly important for European, North-East Atlantic, and global MPA networks.
Mean High Water Springs (MHWS)	The average tidal height throughout the year of two successive high waters during those periods of 24-hours when the range of the tide is at its greatest.
Mitigation	Measures to avoid, prevent, reduce or control effects on the environment. See also definitions for Embedded Mitigation and Additional Mitigation.
Offshore Application	Term used to refer to the applications associated with the Proposed Development. The Applicant will apply for: • A Section 36 Consent under the Electricity Act 1989; and • Marine Licence(s) under Marine Scotland Act 2010 and Marine and Coastal Access Act 2009.
Offshore Export Cables	Subsea cables used to transmit electricity generated offshore by the Wind Turbines from the OSPs to shore. The Transition Joint Bay (TJB) is the location where the Offshore Export Cables terminate, and the onshore cabling begins.
Offshore Infrastructure	All of the Offshore Infrastructure associated with the Proposed Development that is located seaward of MHWS, comprising the Offshore Generation Assets and the Offshore Transmission Assets.
Offshore Substation Platform(s) (OSPs)	OSPs comprise the support structure, topside and electrical components used for collecting and/or converting electricity generated by the Wind Turbines for transmission by the Offshore Export Cables.
Offshore Transmission Assets	The infrastructure of the Proposed Development required to transmit the generated electricity comprising of the OSPs, Offshore Export Cables and associated infrastructure up to MHWS.
Operation and Maintenance (O&M)	The phase of the Proposed Development following completion of construction. This phase of development includes routine inspections, repairs and replacement of infrastructure and equipment (including Interconnector Cables and IACs), Scour Protection replenishment or replacement, major component replacement, painting and/or other coating works, removal of marine growth, and replacement of access ladders.
Option to Lease Agreement (OLA)	An agreement between CES and a developer, permitting the future development of offshore wind within an agreed area.
Plan Option Area (POA)	A location identified in the Sectoral Marine Plan (SMP) as a preferred area for commercial scale offshore wind development.
Project (the)	An overarching term for the Bowdun Offshore Wind Farm (Bowdun OWF) comprising the offshore and onshore infrastructure required to generate and transmit electricity from the Array Area to the onshore Grid Connection Point (GCP). The Project includes the Offshore Generation Assets, the Offshore Transmission Assets and the Onshore Transmission Assets.

Defined Term	Definition
Proposed Development	Term used to define the Offshore Infrastructure associated with the Project seaward of MHWS for which consent is being sought. Further details of the parameters are included in RIAA Part 1: Introduction.
Qualifying Features	The features for which a European site has been officially designated to protect.
Ramsar Site	Wetlands of international importance, designated under the Ramsar Convention on Wetlands of International Importance 1971.
Report to Inform Appropriate Assessment (RIAA)	The RIAA provides detailed information to support the process of Appropriate Assessment (undertaken by the competent authority) as part of the HRA, which evaluates the potential impacts of a project or plan on European Sites.
Scottish Marine Area	The area of sea within the seaward limits of the territorial sea of the United Kingdom adjacent to Scotland as defined by the Marine (Scotland) Act 2010.
Scottish Ministers (the)	The decision makers with regard to Marine Licence(s) and Section 36 Consent applications in Scottish Offshore Waters and Scottish Marine Area.
Scottish Territorial Waters	The territorial waters of Scotland that extend out from MHWS to 12 nm.
Scour Protection	Protective materials installed to avoid sediment being eroded away from the base of the foundations and/or buried subsea cable due to the flow of water.
Section 36 Consent	Scottish Ministers' consent under Section 36 of the Electricity Act 1989 required to permit the generation and operation of an energy generation station.
Sectoral Marine Plan (SMP)	A plan developed by the Scottish Government which provide the strategically planned spatial footprint for offshore wind development in Scotland.
Significance	Effect factor that is determined by the magnitude of impact along with the sensitivity of the receptor.
Special Areas of Conservation (SACs)	SACs are areas designated for the conservation of certain plant and animal species listed in the Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.
Special Protection Areas (SPAs)	SPAs are sites that are designated to protect rare or vulnerable birds (as listed on Annex I of the Directive 2009/147/EC on the conservation of wild birds), as well as regularly occurring migratory species.
Thistle Wind Partners (TWP)	Company established for the development of the Project.
Wind Turbines	Structures comprising of a tubular tower, rotor blades, and a nacelle which houses the Wind Turbine generator.

Acronyms

Acronym	Definition
AA	Appropriate Assessment
ACAP	Agreement on the Conservation of Albatrosses and Petrels
AEoSI	Adverse Effect on Site Integrity
AOB	Apparently Occupied Burrows
CIMP	Compensation Implementation and Monitoring Plan
DEFRA	Department for Environment Food and Rural Affairs
DNA	Deoxyribonucleic Acid
EC	European Commission
EIA	Environmental Impact Assessment
HRA	Habitats Regulations Appraisal
IAC	Inter-Array Cable
ICES	International Council for the Exploration of the Seas
IND	Individuals
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MCAA	Marine and Coastal Access Act
MD-LOT	Marine Directorate - Licensing Operations Team
NBN	National Biodiversity Network
NEEOG	North-Eastern and Eastern Ornithological Group
NSN	National Site Network
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
POA	Plan Option Area
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SMP	Sectoral Marine Plan
SMRF	Scottish Marine Recovery Fund
SPA	Special Protection Area
TWP	Thistle Wind Partners Limited
UK	United Kingdom

Table of Units

Units	Definition
%	Percent
km	Kilometre
km²	Square kilometre
m	Metre
nm	Nautical mile

1 Introduction

1.1.1 The Proposed Development covers the Option to Lease Agreement (OLA) located in the E3 Plan Option Area (POA), detailed in the Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020), and the Offshore Export Cable Corridor. The Array Area is located 38 km off the Scottish coast, at the closest point to land, and has an area of 187 km^2. The Array Area contains the Wind Turbines (fixed foundation), Inter-Array Cables (IACs), Offshore Substation Platforms (OSPs), Interconnector Cables and any necessary scour/cable protection. The Export Cable Corridor consists of up to three Offshore Export Cables which make Landfall at Benholm, Aberdeenshire.

1.1.1 At the time of writing, there have been no requests for a Derogation Case for the Proposed Development as part of the Section 36 Application. The Applicant has provided a Report to Inform Appropriate Assessment (RIAA) (Part 3: Special Protection Areas and Ramsar Sites (TWP-BOW-RPS-ENV-RPT-00015) as part of the Section 36 Application for the Proposed Development. This is to support Scottish Ministers with producing an Appropriate Assessment (AA).

1.1.2 The assessment presented within the RIAA concluded that the Proposed Development could potentially have an Adverse Effects on Site Integrity (AEoSI) for the qualifying seabird species of several Special Protection Areas (SPAs) when considered in combination with other plans or projects.

1.1.3 This Compensation Roadmap therefore relates specifically to the potential impacts associated with the species listed and associated with the SPAs listed in Table 1.1.

Table 1.1: Summary of Species Covered in this Compensation Roadmap Plus Associated SPAs Where Adverse Effects Cannot be Ruled Out (from the Proposed Development Alone and/or In Combination)

Species	SPA
Black-legged kittiwake *Rissa tridactyla* (hereafter 'kittiwake')	• Buchan Ness to Collieston Coast SPA • East Caithness Cliffs SPA • Farne Islands SPA • Flamborough and Filey Coast SPA • Forth Islands SPA • Fowlsheugh SPA • North Caithness Cliffs SPA • St Abb's Head to Fast Castle SPA • Troup, Pennan and Lion's Head SPA • West Westray SPA
Common guillemot *Uria aalge* (hereafter 'guillemot')	• Buchan Ness to Collieston Coast SPA • Fowlsheugh SPA
Atlantic puffin *Fratercula arctica* (hereafter 'puffin')	• Forth Islands SPA
Razorbill *Alca torda*	• East Caithness Cliffs SPA • Flamborough and Filey Coast SPA • Fowlsheugh SPA

Species	SPA
	• St Abb's Head to Fast Castle SPA
Northern gannet *Morus bassanus* (hereafter 'gannet')	• Flamborough and Filey Coast SPA • Forth Islands SPA
Herring gull *Larus argentatus*	• Fowlsheugh SPA

1.2 Background

1.2.1 Scottish Ministers grant consents and licences for Offshore Wind Farms (OWFs) in Scottish waters, including Scottish Territorial Waters (0 nm to 12 nm) and Scottish Offshore Waters (12 nm to 200 nm). Developers must demonstrate compliance with legislation and provide detailed information for thorough assessment of their proposals.

1.2.2 Section 36 Consent is needed for constructing and operating an OWF in the Scottish Marine Area, as well as Marine Licences under the Marine and Coastal Access Act 2009 and Marine (Scotland) Act 2010. A Habitats Regulations Appraisal (HRA) is required under The Conservation of Offshore Marine Habitats and Species Regulations 2017 and The Conservation of Habitats and Species Regulations 2017. As the Proposed Development requires Section 36 Consent and Marine Licences, the Marine Directorate Licensing Operations Team (MD-LOT) can process all applications at the same time.

1.2.3 The RIAA (Part 3: Special Protection Areas and Ramsar Sites (TWP-BOW-RPS-ENV-RPT-00015)) provides information that enables an assessment of the AEoSI on each SPA for which Likely Significant Effect (LSE) could not be ruled out. The evidence presented within the RIAA concluded that the Proposed Development could have an AEoSI for some of the qualifying seabird features of several SPAs in combination with other plans or projects. Consequently, the Applicant has provided a Derogation Case as part of the application for the Proposed Development. This document supports the compensation aspects of that Derogation Case, identifying the compensatory measures which could be delivered to maintain the overall coherence of the United Kingdom (UK) National Site Network (NSN).

1.2.4 The Applicant has developed, in support of the Proposed Development, the compensatory measures for Qualifying Features of SPAs for which AEoSI cannot be ruled out (see Table 1.1). All measures have the potential to be delivered either individually or as a suite of measures that provide benefits for a range of different seabird species, including all those where AEoSI has been identified in the RIAA (Part 3: Special Protection Areas and Ramsar Sites (TWP-BOW-RPS-ENV-RPT-00015)).

1.2.5 The Applicant intends to provide further detail of the proposed compensatory measures within a detailed Ecological Evidence Report, Compensation Plan and Outline Compensation Implementation and Monitoring Plan (CIMP) post-Application. These three reports will present further detail on the ecological evidence behind each measure proposed, potential sites at which compensatory measures would be implemented, approach to securing measures, details of how measures would be implemented and monitored including flexibility to the Project compensation need and scale, and the organisations and partners which will help to deliver measures. These reports will be supported by an Environmental Impact Assessment (EIA) and HRA of the compensatory measures, which will be submitted post-Application and pre-determination. These reports will be submitted to the Scottish Ministers in support of the Proposed Development's Derogation Case.

1.3 Predicted Effects

1.3.1 This document relates to the predicted AEoSI as a result of collision mortality and mortality associated with distributional responses, i.e. displacement and barrier effects from Offshore Infrastructure of the Proposed Development (cited in full detail within the RIAA, Part 3: Special Protection Areas and Ramsar Sites (TWP-BOW-RPS-ENV-RPT-00015)), with a summary provided below in Table 1.2.

Table 1.2: Species, SPAs and Relevant Impacts from the Applicant's RIAA Where AEoSI Cannot be Ruled Out Based on the NatureScot Lower and Higher Precautionary Assessment Rates

Species	Relevant SPAs	Adult Annual Mortality (Low) (Number of Birds)	Adult Annual Mortality (High) (Number of Birds)
Kittiwake	Buchan Ness to Collieston Coast	8.14	10.24
	East Caithness Cliffs	2.07	2.60
	Farne Islands	0.56	0.70
	Flamborough and Filey Coast	1.83	2.30
	Forth Islands	0.94	1.19
	Fowlsheugh	12.68	15.96
	North Caithness Cliffs	0.40	0.50
	St Abb's Head to Fast Castle	0.89	1.11
	Troup, Pennan and Lion's Heads	2.25	2.83
	West Westray	0.21	0.26
	Total	**29.95**	**37.70**
Guillemot	Buchan Ness to Collieston Coast	39.83	83.82
	Fowlsheugh	143.59	302.18
	Total	**183.42**	**386.00**

Species	Relevant SPAs	Adult Annual Mortality (Low) (Number of Birds)	Adult Annual Mortality (High) (Number of Birds)
Razorbill	East Caithness Cliffs	0.13	0.42
	Flamborough and Filey Coast	0.10	0.33
	Fowlsheugh	12.18	20.36
	St Abb's Head to Fast Castle	0.51	0.87
	Total	**12.92**	**21.98**
Puffin	Forth Islands	1.58	2.48
	Total	**1.58**	**2.48**
Gannet	Flamborough and Filey Coast	0.78	1.05
	Forth Islands	19.92	26.48
	Total	**22.28**	**30.01**
Herring gull	Fowlsheugh	NA	2.29
	Total	**NA**	**2.29**

1.3.2 Scottish Ministers findings on the seabird mortalities that require compensating may be different to those identified in the Proposed Development's RIAA. Scottish Ministers' conclusion on AEoSI will not be known until the AA is published. This Compensation Roadmap presents sufficient compensation to fully offset predicted mortalities for Qualifying Features and sites for which the RIAA concludes an AEoSI. However, the suite of compensatory measures has additional capacity, enabling mortality at any other SPAs and Qualifying Features for which Scottish Ministers conclude an AEoSI, to be fully compensated.

2 Guidance

2.1.1 Guidance for a Scottish offshore wind project on developing a compensation plan under current legislation and policies is limited. Scottish Government's consultation document on Strategic Compensation Policy for Offshore Wind (Scottish Government, 2025a) notes that under the current regime, compensatory measures must be secured to ensure that the overall coherence of the UK protected site network is protected. This is known as 'like for like' (i.e. compensatory measures are targeted at the impacted species and, where possible, at the impacted site).

2.1.2 Securing sufficient like for like compensation is challenging for offshore wind projects in Scotland. Partly this is a consequence of the high predicted impacts that current impact assessment processes generate, meaning that a large quantum of compensation will be required to offset predicted impacts. Also, there are many OWFs in the Scottish planning system that need compensation, creating high demand and competition for available compensatory measures. This is further exacerbated by the limited number of opportunities available to offshore wind projects for them to secure compensation.

2.1.3 To assist with the challenges of securing sufficient compensation, the UK and Scottish governments are in the process of implementing reforms to the Habitats Regulations' requirement for compensatory measures in relation to offshore wind. These reforms are being taken forward under powers in the Energy Act 2023 (Energy Act, 2023). The policy that informs the reforms aims to create a more flexible and pragmatic approach to compensation requirements under the Habitats Regulations. Recently, the UK Government (Department for Environment Food and Rural Affairs (Defra)) and Scottish Government both consulted on legislative reforms which will facilitate projects using strategic compensatory measures to offset their predicted impacts (Scottish Government, 2025a; Defra, 2025).

2.1.4 At the time of writing this report (April 2026) the details of the changes to policy, legislation and guidance in Scotland are not clear but some changes that are understood to likely occur are:

- opportunities for non-like for like compensation by broadening the interpretation of the need to maintain the ecological coherence of the UK NSN. This would enable non-like for like compensatory measures to be used, e.g. compensatory measures targeted at species which are not at risk of AEoSI by the Proposed Development;
- development of a suite of 'wider measures' which would include benefits to the wider marine ecosystem, such as seagrass restoration or oyster reef restoration. These measures, whilst not directly benefiting seabirds, would provide indirect benefits (e.g. increased prey populations); and
- creation of a Scottish Marine Recovery Fund (SMRF).

2.1.5 This Compensation Roadmap takes information from the following guidance into consideration:

- Scottish specific guidance on the development of compensation measures (see Table 2.1 below);
- Department for Environment, Food and Rural Affairs (Defra) "Best Practice Guidance for developing compensatory measures in relation to Marine Protected Areas" 2021 (Draft) (Defra, 2021) and Consultation on policies to inform updated guidance for Marine Protected Area (MPA) assessments (Defra, 2024);
- European Commission (EC) 2018 "Managing Natura 2000 Sites" (European Commission, 2018); and
- The Planning Inspectorate's Advice Note Ten (National Infrastructure Planning, 2022).

2.1.6 The guidance from the EC (2018) identifies that the following criteria, addressed through the subsequent subheadings in this Compensation Roadmap (and which will be further addressed within the post-Application Compensation Plan) should be considered in the process of developing compensation measures:

- Cooperation and coordination between the relevant Natura 2000 authority, assessment authority, and proponent of the plan/project;
- Clear target values and objectives in accordance with the conservation objectives of the site;
- Description of compensation measures, including a scientifically robust explanation of how they will compensate for adverse effects and ensure a coherent Natura 2000 network (in a UK context, the NSN);
- Demonstration of the technical feasibility of the measures in relation to their objectives;
- Demonstration of legal and financial feasibility of the measures according to the timing required;
- Analysis of suitable locations and acquisition of the rights for land use;
- Timeframe in which the compensation measures are expected to achieve their objectives;
- Timetable for implementation of compensation and coordination with the schedule for project implementation;
- Public information and/or consultation stages;
- Specific monitoring and reporting schedules; and
- Programme of financing.

2.1.7 Particularly of relevance to seabird compensation in Scotland is the Scottish Government's "Framework to Evaluate Ornithological Compensatory Measures for Offshore Wind – Process Guidance Note for Developers" (Scottish Government, 2023), summarised in Table 2.1, and "Strategic Compensation Policy for Offshore Wind" (Scottish Government, 2025a).

Table 2.1: An Overview of the Guidance Documents Associated with Scottish Government (2023)

Document Title	Description
Framework To Evaluate Ornithological Compensatory Measures For Offshore Wind - Process Guidance Note For Developers	Guidance note is aimed at offshore wind developers and parties acting on their behalf. It provides a process to be followed when considering the design and delivery of ornithological compensation measures at the individual project level in accordance with "the Habitats Regulations".
Scottish Guidance On The Principles Underpinning The Assessment Of Compensatory Measures In Relation To Ecology, Monitoring And Socio-Economics	This document provides a summary of the ecological, statistical and socio-economic principles considered to be of central importance in applying the framework for evaluating compensation measures for seabirds affected by offshore renewable development. It is aimed at Statutory Nature Conservation Bodies (SNCBs) and others responsible for provision of advice in respect of the delivery of compensation measures but will also be helpful to the competent authority and developers.
Compensatory Measure Advice Note	The purpose of this document is to help developers consider necessary components in the development of any compensation measure package to assist the SNCBs and regulators in appraising the evidence supporting a Derogation application.

2.1.8 The guidance listed above is useful when informing the approach taken by the Proposed Development with respect to compensation and has been referred to frequently while compiling the information within this Compensation Roadmap. However, the 'Compensatory Measures Advice Note' has been specifically used to ensure that the necessary components of the package for the Proposed Development have been provided. These include:

- Description of measures in view of the conservation objectives;
- Coherence of the network;
- Approaches for best practice with examples;
- Summary of available evidence;
- Technical feasibility;
- Delivery/implementation of measure;
- Potential key issues; and
- Ecological monitoring.

3 Collaborative, Regional and Strategic Compensatory Measures

3.1.1 The compensation measures being proposed for and pursued by the Applicant can be delivered at individual project level, collaboratively between projects, or potentially strategically (e.g. via a SMRF). The Applicant is actively collaborating with various parties to seek to the most appropriate of these potential delivery routes for each of the compensation measures under development.

3.2 Collaborative Regional Compensatory Measures

3.2.1 The Applicant has been an active participant in the North-East and Eastern Ornithology Group (NEEOG), a collaboration of 12 developers who have worked together to develop collaborative compensatory measures, as well as other ornithological work. Part of the work to develop collaborative measures resulted in a report, Development of Ornithology Regional Compensation Measures: Ornithology compensation measures, by Pizzolla *et al.* (2024). Following an extensive review, Pizzolla *et al.* (2024) considered the potential suitability of nine measures that would be suitable for delivering at a regional scale, to compensate for adverse impacts from multiple offshore wind projects in the east and north-east regions. These were:

- establish new colonies at natural sites;
- develop artificial nest sites;
- undertake seagrass restoration;
- undertake oyster reef restoration;
- undertake extension of kelp beds;
- mammalian predator management and eradication and biosecurity;
- avian predator control;
- management of supporting habitats; and
- removal/prevention of marine littering.

3.2.2 Currently, there is no mechanism by which NEEOG developers can use these proposed regional scale collaborative measures as part of their derogation package. Consequently, no collaborative regional scale measures are currently proposed by the Applicant as part of the suite of compensatory measures.

3.3 Strategic Compensatory Measures

3.3.1 At the time of writing this report (April 2026) the Scottish Government has commissioned work to progress strategic compensatory measures under five separate lots. These lots cover the following:

- predator control and biosecurity;
- habitat management, restoration and reduction of colony disturbance;
- fisheries management including bycatch, fisheries closures and entanglement;

- supporting prey habitats (e.g. kelp forest and seagrass restoration); and
- marine litter removal.

3.3.2 Scottish Government is developing these strategic measures both as part of a derogation package for the SMP and for the SMRF. At present, the legislation, policy and guidance are not yet in place to enable developers to use the SMRF to discharge their compensation requirements. The Applicant will remain alert to opportunities to use the SMRF, as they arise. However, the Applicant has developed, and presented in this report, a robust suite of project-led compensatory measures that enables the Proposed Development's predicted adverse effects to be fully offset through measures secured by the Applicant alone.

4 Compensatory Measures

4.1 Proposed Compensation

4.1.1 The Applicant-led compensatory measures for the species and SPAs listed within Section 1.3 are outlined in Table 4.1, and presented in further detail in Sections 6 and 7.

4.1.2 Further details relating to each measure will be available within the Compensation Plan, post-Application. The final set of measures will be determined based on the outcomes of the Scottish Ministers' AA and will be fully detailed in the CIMP, post-determination. Potential linkages with strategic and collaborative compensation approaches are addressed in Section 3.

Table 4.1: Summary of Proposed Compensatory Measures for the Proposed Development

Compensation Measure	Description	Species of Relevance	Relevant Section of this Report
Predator control/eradication	Implementation of a predator control/eradication project and subsequent biosecurity to support the recovery of vulnerable seabird species.	Guillemot, puffin, razorbill, herring gull and kittiwake	Section 6
Bycatch reduction	Implementation of measures to reduce the bycatch of gannet in a commercial fishery, reducing mortality.	Gannet	Section 7

4.2 Compensatory Measures Identification

4.2.1 The short-listed measures listed in Table 4.1 were identified from a long list of potential measures developed using published reviews of possible compensatory measures (Furness, 2021; Furness *et al.*, 2013; Tapia-Harris & Evans, 2024), from previous and current OWF proposals, and from the experience and knowledge of NIRAS and SLR Consulting who developed the measures.

4.2.2 The long-list served as a comprehensive foundation from which the Applicant developed potential compensation measures. Each option was subsequently examined in greater depth to assess how well it aligned with the relevant compensation guidance, including Defra (2021) and Scottish frameworks. Measures were then evaluated against a range of criteria, including the compensation hierarchy, location, technical viability, timing, additionality and scale. Those scoring above a threshold determined through expert judgement were progressed to a shortlist for further scrutiny and stakeholder engagement.

4.2.3 A range of short-listed measures were discussed with stakeholders to seek advice on the suitability of the proposed measures. An overview of the ecological evidence which supports each type of measure was undertaken to provide stakeholders and Scottish Ministers with confidence in the ability of the short-listed measures to deliver the necessary compensation. The Applicant will continue to develop short-listed measures (including identification of new/additional measures) post submission.

4.2.4 It is for Scottish Ministers to conclude on the Qualifying Features and the SPAs for which AEoSI cannot be ruled out due to predicted impacts from the Proposed Development alone and/or in combination. Consequently, the seabird mortality requiring compensation will only be known for certain once the AA is published. At this point, the compensatory measures will be adapted to fully compensate for all predicted mortalities to Qualifying Features and sites with potential for an AEoSI. The measures presented below have capacity to accommodate additional compensation requirements that may arise from the AA.

4.2.5 Proposed implementation and monitoring of the compensatory measures described below will be detailed in the CIMP, which will be fully developed post-determination, in consultation with a steering group comprising key stakeholders.

5 Stakeholder Engagement

5.1.1 The Applicant undertook extensive consultation with relevant stakeholders, including MD-LOT and NatureScot. The Royal Society for the Protection of Birds (RSPB) were invited to the stakeholder workshops and slides with information on the Proposed Development's compensation plan have been provided to the RSPB. However, although the RSPB were unable to attend the stakeholder workshops due to resource constraints, all workshop materials and information were provided to them upon request to ensure they remained fully informed. Table 5.1 outlines compensation consultation workshops with key stakeholders, to date. Detailed minutes were drafted for each workshop and were shared with stakeholders for comment. Following requested amendments, the agreed minutes were issued to the stakeholders as final.

5.1.2 Stakeholder engagement is foreseen to continue during determination and post-Consent, as the Applicant continues to develop the Proposed Development's compensation plan and implementation and monitoring plan.

Table 5.1: Stakeholder Consultation

Date and Method of Consultation	Agenda Topics	Attendees
Email from the Applicant, 08/05/2025	Report on short-list of compensatory measures shared with NatureScot, RSPB and MD-LOT.	NatureScot MD-LOT RSPB SLR Tetra Tech RPS Energy (TTRPSE) TWP
Email from the Applicant, 18/06/2025	Sharing slide pack and questions prior to Compensation workshop on 02/07/2025.	MD-LOT RSPB NatureScot SLR TWP TTRPSE
Bowdun HRA Compensation Stakeholder Workshop 1 **Teams, 02/07/2025**	Outline of 5 species that may require compensation and 3 proposed project-specific compensatory measures; Questions to NatureScot, RSPB and MD-LOT.	MD-LOT NatureScot SLR TWP TTRPSE (RSPB invited but did not attend)
Email from the Applicant, 24/07/2025	Sharing slide pack and questions prior to Compensation workshop 2 on 08/10/2025.	MD-LOT RSPB NatureScot SLR TWP TTRPSE
Email from NatureScot, 25/08/2025	Points to consider around additionality of a compensatory measure being implemented, in response to an action raised in the HRA Compensation Workshop 1.	NatureScot TTRPSE SLR

Date and Method of Consultation	Agenda Topics	Attendees
Email from the Applicant, 24/09/2025	Sharing draft minutes from Compensation Workshop 1.	MD-LOT RSPB NatureScot SLR TWP TTRPSE
Bowdun HRA Compensation Stakeholder Workshop 2 **Teams, 08/10/2025**	• Recap on Bowdun's proposed compensation plan; • Results of surveys in summer 2025; • Discussion around 2 OWF applicants proposing to provide compensation at the same location; • Questions to NatureScot, RSPB and MD-LOT, including use of non-like for like compensation.	MD-LOT NatureScot SLR TWP TTRPSE (RSPB invited but did not attend)
Email from the Applicant, 04/12/2025	• Sharing draft minutes from Compensation Workshop 2; • Noting that contrary to an action agreed during the meeting, the Applicant will not be providing MD-LOT with an email with a review of Bowdun's compensation measures compared with another project's measures.	MD-LOT RSPB NatureScot SLR TWP TTRPSE
Email from MD-LOT, 05/12/2025	• Confirmation that MD-LOT have no comments on the minutes from the Compensation Workshop 2; • Question about when email from SLR to MD-LOT will be sent regarding 2 projects seeking to use the same location for compensation.	MD-LOT SLR TWP TTRPSE
Email from the Applicant, 26/02/2026	Confirming that a third workshop will not take place and that a Roadmap approach will be taken for submission.	MD-LOT NatureScot TWP TTRPSE

6 Predator Control/Eradication

6.1 Introduction

6.1.1 In order to compensate for adverse effects on kittiwake, herring gull, guillemot, puffin, and razorbill associated with the Proposed Development, the Applicant is developing compensation measures focused on the eradication and/or control of invasive non-native mammalian predators, such as rats (*Rattus* sp.) and American mink *Neogale vison* (hereafter 'mink'). The Applicant is undertaking work to identify appropriate mainland and island sites, including early feasibility checks and engagement with landowners and managers, to support the development of deliverable predator control or eradication measure(s).

6.1.2 The following sections provide the Competent Authority with an outline of the evidence and potential approaches for the proposed predator control measures. The specific details, including further information on the scale, location, and design of the measures, will be provided within a detailed Compensation Plan post-Application.

6.2 Summary of Evidence

6.2.1 Detailed evidence supporting proposed predator control/eradication compensation measures will be presented within an Ecological Evidence Report provided post-Application (alongside the Compensation Plan). A summary of key evidence behind the development of the measures is provided below.

6.2.2 Seabirds face threats from a variety of predators, both native species and Invasive Non-Native Species (INNS). In the UK, the main native predators are gulls Laridae sp., raptors Accipitridae sp., Eurasian otters *Lutra lutra*, and red fox *Vulpes vulpes*. These native predators naturally prey on seabird eggs, chicks, and sometimes adults. Seabirds have adapted to these native predators through avoidance strategies when nesting that reduce predation risk and minimise impact at a population level. However, INNS, introduced by human activities, can sometimes access these nesting areas, and pose a significant threat to seabird species that have not evolved alongside them. Introduced species including rats and mice *Rodentia sp.*, stoats *Mustela erminea*, feral cats *Felis catus*, and mink can have devastating impacts on seabird breeding success due to their unfamiliar and often more aggressive predation, leading to severe declines in seabird populations (Thomas *et al.*, 2017a; Dias *et al.*, 2019). Conservation efforts are crucial to manage invasive predators and to protect vulnerable seabird species.

6.2.3 Invasive rats, for example, are one of the leading contributors to seabird decline and extinction globally and within the UK (Jones *et al.*, 2008; Thomas *et al.*, 2017a; Dias *et al.*, 2019). The auk family, of which guillemot, puffin, and razorbill are all members, have been found to be strongly impacted by rat predation. A meta-analysis of 115 independent rat–seabird interactions, covering 61 islands/island chains globally, found that rats on average inflicted an impact of 83% decline across studied auk populations (Jones *et al.*, 2008). This is in part due to the nesting behaviour of auks, which often exhibit burrowing or crevice-

nesting, a trait that increases their susceptibility to rats that forage and cache food in these habitats (Calhoun, 1963; Jones *et al.*, 2008). Rats are known to kill and eat adults of small seabird species, but in most cases, predation by rats tends to be focused on eggs and chicks when available (Atkinson, 1985). For auks, who lay only a single egg each breeding season, the widespread or annual loss of eggs and chicks can have detrimental impacts on the overall population (Hamer *et al.*, 2001).

6.2.4 There are a number of examples from the UK of negative population level effects of invasive rats on auks, followed by increases in breeding auk populations upon eradication and subsequent biosecurity. On Lundy, black and brown rats were responsible for the decline in puffin from 3,500 pairs in 1939 to just 13 individuals by 2000 (Appleton *et al.*, 2004; Thomas *et al.*, 2017a). Following the eradication of black and brown rats from Lundy, guillemot populations increased by 322% (2,348 to 9,912 individuals), puffin by 10,169% (13 to 1,335 individuals), and razorbill by 298% (950 to 3,785 individuals) between 2000 and 2023 (Joint Nature Conservation Committee (JNCC) *et al.*, 2025). Guillemot, razorbill, and puffin were also observed nesting higher up on the cliff, where the clifftop meets the steep grassy slopes. These changes in breeding population and distribution support the conclusion that rats were responsible for the long-term seabird declines on Lundy (Booker *et al.*, 2018). On Canna, caches of depredated guillemot eggs demonstrated that rats were responsible for low guillemot productivity, declining population trends, and a redistribution of guillemot away from their traditional boulder nesting grounds (Swann *et al.*, 2016). Rats were also recorded caching depredated razorbill eggs and were responsible for razorbill abandoning two previously occupied colonies (Swann *et al.*, 2016). After rats were eradicated in 2006, researchers noted that 'a decline in rat numbers appeared to result in a large increase in the number of razorbill chicks observed', and the island's guillemot, razorbill, and puffin colonies all started to expand (Swann *et al.*, 2016).

6.2.5 Mink are another INNS for which control is considered a primary conservation priority for seabirds; for example, mink control is included in the Scottish Biodiversity Strategy Route Map (Scottish Government, 2015) and the Scottish Seabird Conservation Action Plan (Scottish Government, 2025b). Mink are adaptable generalists and highly opportunistic predators, and are well-suited to aquatic, riparian habitats, exhibiting substantial ecological and phenotypic flexibility. The species is generally considered to be one of the most widely distributed and destructive invasive species in the world (Bonesi and Palazon, 2007; Fasola *et al.*, 2011). In the UK and Ireland, invasive mink do not have any specific predators to control populations, and the species has undertaken a rapid and highly successful colonisation of its new environment.

6.2.6 Mink are considered to be a serious threat to seabird colonies across the entirety of their invasive range (Bonesi and Palazon, 2007; Hipfner *et al.*, 2010; Spatz *et al.*, 2022; López *et al.*, 2023). The widespread presence of mink, especially along Scottish coasts, has led to the complete or near-complete extirpation of breeding seabirds from some of Scotland's archipelagos, sea lochs, firths, and sounds (Craik, 1997; Fraser *et al.*, 2015). Across the UK and Ireland, mink predation has substantially contributed to the extinction of at

least 34 entire colonies of seabirds, including terns, gulls, storm petrels, Manx shearwater, and puffin (Mitchell and Daunt, 2010).

6.2.7 Mink are agile, single-prey loading, central place foragers, meaning they collect individual prey items during each foraging bout and store them in a cache, especially when prey is abundant (Houston and McNamara, 1985). This behaviour often leads to high levels of predation once a prey source is established, and has led to significant population impacts for multiple seabird species (Craik, 1997; Mitchell *et al.*, 2004; Furness *et al.*, 2013). Mink are excellent swimmers and climbers (Skírnisson and Petersson, 1980; Björnsson and Hersteinsson, 1991; Skírnisson *et al.*, 2004), enabling them to disperse between mainland and islands and access remote seabird nesting sites such as nesting locations along sheer cliffs, making them a substantial threat to nesting seabirds (Mitchell *et al.*, 2004).

6.2.8 There are a number of documented examples of high levels of mink predation at seabird colonies. In an Icelandic study, 200 guillemot chicks were found in a single mink den (T. Bjornsson *pers. comm.* in Clode and Macdonald, 2002), and elsewhere in Iceland a professional mink bounty hunter recorded 300 dead puffin strewn across the beach of an island that had been predated by mink (Dicke, 2018). In Norway, during an annual seabird census on Gjesværstappan near Hjelmsøya, Norway, one mink predated virtually all 102 puffin chicks in the burrows studied and was seen killing an adult on the monitoring plot during the census. This caused adult birds to abandon the colony and resulted in a 23% decline in colony size during the count the following year (Anker-Nilssen *et al.*, 2006). Furness *et al.* (2013) noted that at St. Abb's Head, Scotland, the chicks of 56 breeding kittiwake pairs were lost at the Horsecastle subcolony in one breeding season, accounting for half of the subcolony. This was thought to be due to a single mink.

6.2.9 National Biodiversity Network (NBN) Atlas records of confirmed mink records show that many SPAs within Scotland are located within or close to the recorded and predicted range of mink in Scotland (Fraser *et al.*, 2015; NBN Atlas, 2025). Given the innate dispersal ability of mink across novel landscapes, their phenotypic and ecological flexibility in terms of feeding behaviour, and their apparent preference for coastal habitats, it is highly probable that cliff-nesting seabird colonies within SPAs are vulnerable to mink predation following invasion.

6.2.10 Despite the ubiquity of invasive mink, which are currently distributed across 28 European countries, several localised control efforts have been effective in greatly reducing and mitigating the effects of invasive populations and safeguarding vulnerable native biodiversity (Bonesi and Palazon, 2007). For example, recent trapping efforts in East Anglia with a 70 km buffer zone have led to the complete removal of mink in East Anglia since trapping efforts started in 2020 (Garget, 2024).

6.2.11 In Scotland, mink control projects have seen success in greatly reducing mink populations, with key initiatives including the Hebridean Mink Project (2001 to 2013) which aimed to eliminate mink from North Uist, Benbecula, and South Uist while also reducing mink density in South Harris to prevent potential recolonisation of the Uists (NatureScot, 2024). Over four years, 100,824 trap nights and 500 handler-days dedicated to den searches resulted in the capture of 228 mink, with the last capture reported in 2005 (Roy *et al.*, 2015). Post-project monitoring has shown that mink populations in the Outer Hebrides have greatly declined, with only seven mink captured in Lewis and Harris in 2016, and no juveniles since 2015. A surveillance network comprising kill traps is now used to identify and eliminate the remaining mink (NatureScot, 2024). During and following the project, many species have benefitted from mink removal. Seabird colonies have rebounded to levels that have exceeded expectations, and anecdotal evidence suggests that other bird species, including divers, ducks, and waders, have also increased in number throughout the project area (Scottish Natural Heritage, 2018).

6.3 Sufficiency, Scale and Site Selection

6.3.1 The scale of compensation will be determined by the Competent Authority's AA. Full details about the process of calculating the scale of the implementation of predator control/eradication measures, including details of the locations of implementation and site-specific considerations, will be provided within the detailed Compensation Plan post-Application.

Example Approach for Rat Eradication and Biosecurity

6.3.2 When considering rat eradication and biosecurity, the scale of compensation will relate to the additional nest sites available to breeding auks following the removal of rats from breeding areas, thereby increasing the number of offspring able to be produced by a seabird colony per year. The number of additional offspring produced would offset the impact of the Proposed Development by providing birds back to the UK NSN and colonies supporting it. Rat eradication is not proposed at this stage as a measure for kittiwake or herring gull.

6.3.3 The calculation of the number of auk nest sites necessary to produce the required number of adult birds will use species-specific demographic rates, as established by Horswill and Robinson (2015).

6.3.4 The first step in the compensation calculation is to work out the number of fledglings required to reach breeding adult age to offset the predicted impacts using the known juvenile and immature survival rates. This is achieved following the equation below and calculated for each species in their respective sections.

$$N_{Fledglings\ required} = \frac{N_{New\ breeding\ recruits\ required}}{\prod_{Age=0}^{Age=Age\ of\ recruitment} Survival_{Age}}$$

6.3.5 Once the number of fledglings required is known, the productivity rate is applied to calculate the number of breeding pairs required (number of additional nest spaces required) to produce the required number of fledglings to offset the predicted impacts. This is achieved by following the equation below and is calculated for each species in their respective sections. For all species, the national average productivity rate from Horswill and Robinson (2015) was used.

$$N_{Breeding\ pairs\ required} = \frac{N_{Fledgings\ required}}{Productivity}$$

6.3.6 The number of breeding pairs required can then be converted to the number of individuals or nests required.

Guillemot

6.3.7 The compensation requirement for the Proposed Development is 386.0 adult guillemots. Using juvenile and immature survival rates and age of recruitment published in Horswill & Robinson (2015), the number of additional guillemot fledglings per annum needed to produce 386.0 adults is estimated to be 1,146.4 fledglings (Table 6.1).

6.3.8 To produce an additional 1,146.4 fledglings per year, breeding abundance at the chosen location would need to increase by 1,706 pairs, assuming a breeding success of 0.672 chicks per pair (Horswill & Robinson, 2015). The count unit for guillemot is individual (IND), which is the number of individuals counted on ledges. This is typically converted into pairs on the assumption that one-third of birds are non-breeders and that only one adult of the pair is attending the egg or chick. Therefore, the IND count is multiplied by 0.67 to estimate the number of guillemot pairs. Consequently, the compensation requirement of 1,706 additional pairs equates to 2,546 IND (i.e. 1,706 divided by 0.67).

Table 6.1: Calculation of Number of Additional Fledglings Per Annum That Would be Needed to Produce 386.0 Adult Guillemots (Demographic Rates from Horswill & Robinson, 2015).

Demographic Parameter	Annual Survival Rate	Number of Guillemots
Compensation requirement		386.0 adults
Age of recruitment	6 years	
Number of fledglings needed		1,146.4
Number surviving to age 1	0.56	642.0
Number surviving to age 2	0.792	508.5
Number surviving to age 3	0.917	466.2
Number surviving to age 4	0.939	437.8
Number surviving to age 5	0.939	411.1
Number surviving to adulthood	0.939	386.0
National average productivity	0.672	1,706 pairs or 2546 IND*

* pairs are converted to IND by dividing by 0.67, on the assumption that one-third of birds are non-breeders and only one adult in a pair is attending the colony.

Razorbill

6.3.9 The compensation requirement for the Proposed Development is 22.0 adult razorbills. Using the demographic rates in Horswill & Robinson (2015), an additional 136 pairs or 202 IND razorbills would be needed to meet the Proposed Development's compensation requirement (Table 6.2).

Table 6.2: Calculation of Number of Additional Fledglings Per Annum That Would be Needed to Produce 22.0 Adult Razorbills (Demographic Rates from Horswill & Robinson, 2015)

Demographic Parameter	Annual Survival Rate	Number of Razorbills
Compensation requirement	-	22.0
Age of recruitment	5	-
Number of fledglings needed	-	77.3
Number surviving to age 1	0.630	48.7
Number surviving to age 2	0.630	30.7
Number surviving to age 3	0.895	27.5
Number surviving to age 4	0.895	24.6
Number surviving to adulthood	0.895	22.0
National average productivity	0.570	136 pairs or 202 IND

Puffin

6.3.10 The compensation requirement is 2.5 adult puffins. To meet the Proposed Development's compensation requirements, an additional 18.6 puffin Apparently Occupied Burrows (AOBs) would be needed (Table 6.3).

Table 6.3: Calculation of Number of Additional Fledglings and AOBs (Apparently Occupied Burrows) Per Annum That Would be Needed to Produce 2.5 Adult Puffins (Demographic Rates from Horswill & Robinson, 2015)

Demographic Parameter	Annual Survival Rate	Number of Puffins
Compensation requirement	-	2.5 adults
Age of recruitment	5 years	-
Number of fledglings needed	-	11.5
Number surviving to age 1	0.709	8.1
Number surviving to age 2	0.709	5.8
Number surviving to age 3	0.709	4.1
Number surviving to age 4	0.76	3.1
Number surviving to adulthood	0.805	2.5
National average productivity	0.617	18.6 AOB

6.3.11 Site selection for a rodent eradication measure is currently underway, with engagement and negotiations to secure agreements with the relevant landowners and leaseholders ongoing. The Compensation Plan, to be provided post-Application, pre-determination, will set out the preferred site(s) for implementation, along with appropriate evidence such as site visit data, calculations for capacity, and written agreements with necessary parties. It will be ensured that the sites chosen have capacity for at least the scale calculated above for each species.

Example Approach for Mink Control

6.3.12 A measure focused on mink control will be targeted at specific SPAs and associated non-SPA colonies supporting the target seabirds, with the final location or set of locations for delivery to depend on the final impact values and species determined by the Competent Authority's AA. Additional SPAs and non-SPA locations may be explored if necessary to achieve the required compensation. Full details about site selection will be provided in the detailed Compensation Plan post-Application, pre-determination.

6.3.13 With respect to mink control, scale relates to the quantity of birds estimated to be protected from mink predation, achieved by the prevention of mink predation via mink control. Alongside seabird mortality as a result of direct predation by mink, it is notable that impacts of mink presence include other associated negative effects such as colony abandonment and predation of seabirds outside SPAs but demographically linked to SPA colonies. This will in turn offset the impact of the Proposed Development to kittiwake, puffin, razorbill, guillemot and herring gull.

6.3.14 The calculation of scale of delivery of a mink control measure will be undertaken within a detailed Compensation Plan, submitted post-Application, and a CIMP, submitted post-determination. Scale calculations will take a precautionary but proportionate approach, drawing on the full range of evidence and expert advice available and acknowledging and discussing uncertainties and assumptions made throughout the calculation process.

6.4 Implementation

Approach to the Implementation of Rat Eradication and Control

6.4.1 Implementation of the rat control measure will follow established guidance and methodology, such as that of the Biosecurity for Life programme (Biosecurity for Life, 2017), Thomas *et al*. (2017b), and Thomas *et al*. (2017c). Detailed information will be provided within the Compensation Plan provided post-Application, pre-determination.

6.4.2 Before the implementation of a rat eradication measure, a comprehensive feasibility study must be conducted to confirm that eradication is feasible and sustainable at the chosen location. The Applicant intends to undertake a feasibility study at the chosen location for this measure post-Application, assessing the chosen location against the feasibility study criteria put forward by Thomas *et al*. (2017b). At this time, additional evidence may be gathered with respect to the rat population density and distribution, the potential impact on

the local seabird populations, the likely benefit to be experienced by the seabirds, and the feasibility of implementing a rat eradication control programme. The outcome of the feasibility study will be used to inform the strategy for compensation implementation outlined within the CIMP.

6.4.3 The implementation of rat eradication will follow standardised guidelines for rodent eradication methodology that have been developed over years of research, detailed in Thomas *et al*. (2017c). The recommended approach for a rodent eradication program is a systematic grid of rodenticide deployed via ground-based bait stations across the entire location. The grid density is based on the location and the species being targeted. For brown rats, a grid of 50 m x 50 m is typical, with denser grids up to 25 m x 25 m in their preferred habitat. Adjustments to the grid can be made based on habitat and human habitation. For example, buildings, caves, offshore stacks, or other locations with higher rat populations may require additional baiting. For offshore stacks and islands, the maximum known swimming distance of the target rat species should guide bait placement (brown rats: up to 4.0 km) to minimise incursion risk. Bait stations need to be checked for use and have bait replenished frequently, ideally every one to three days.

6.4.4 Baiting typically starts in late autumn and continues through winter into early spring. This coincides with the time period after seabirds have left their breeding colonies, when rats are least likely to breed, and when alternative food sources are scarcest for rats. The rodenticide phase of control will take at least six months, including location preparation, rodenticide implementation, targeting any rats that survived the initial baiting, and installing biosecurity measures. Bait stations should remain baited for at least one month after the last evidence of rat bait-take. In some cases, additional years of baiting is required to ensure that all of the rats have been eradicated, and any control schedule should accommodate for this potential scenario.

6.4.5 It is crucial that eradication programmes are implemented with adequate biosecurity measures in place to prevent re-invasion and provide rapid response strategies for addressing an incursion, should it occur (Stanbury *et al*., 2017; Thomas *et al*., 2017a). A robust biosecurity plan will therefore form a central part of this measure, with further details to be provided in the post-Application Compensation Plan and post-determination CIMP.

6.4.6 The aim of a biosecurity plan is to prevent rat incursions by placing barriers along incursion pathways to obstruct their movements to the location of the eradication. Measures include rodent-proof containers, inspecting goods for signs of rodent interference, and installing baited stations and traps at possible points of transit. Not all biosecurity measures are flawless, and a robust surveillance strategy is therefore essential to detect and respond to incursions before they become invasions. Surveillance techniques can include flavoured wax blocks, tracking tunnels, cameras, traps, hair traps, and the use of ultraviolet light. Biosecurity surveillance should be in place indefinitely following eradication and tailored to the specific characteristics of the eradicated location.

6.4.7 Biosecurity measures will include incursion response plans, required to quickly and efficiently respond to any rat incursions at the eradication location. Correct identification of rodent incursion signs is crucial for an effective response. Incursion response plans can involve interviewing witnesses, inspecting sites, and collecting and archiving evidence. A probable or confirmed sighting will trigger an incursion response. This involves setting up a baiting, monitoring, and trapping grid around the sighting area. Speed of response is critical, and well-stocked biosecurity and incursion response kits are essential for preparedness. If an incursion is not handled in a timely or sufficient manner, an invasion can occur. This is where invasive rats become re-established at the chosen location and an additional full eradication control program would be required. Deoxyribonucleic Acid (DNA) sampling can also provide a useful guide to where the incursion may have originated and how to adjust the biosecurity measures accordingly.

Approach to Implementation of Mink Control

6.4.8 The Applicant intends that a mink control measure will be delivered via the provision of funding and with delivery partners to enact mink control measures such that control programmes initiate mink control or continue to maintain mink control to reduce mink population across the control area(s). Implementation will therefore algin with the strategies of delivery partners.

6.4.9 As it is intended that the compensation measure will involve the initiation or continuation of mink control programmes in focal locations, the measure can be considered to be delivering compensation at the point of implementation because mink are known to predate directly on adult seabirds as well as eggs and chicks (although for the purposes of calculating the number of seabirds delivered it has been assumed that predation is purely on eggs and chicks as a precautionary value).

6.4.10 Examples of mink control processes that will form part of this measure include mink traps and monitoring rafts, placed strategically along and beside rivers and streams. Rafts are placed at the water's edge, enticing mink to explore wooden tunnels. Inside the tunnel, a clay pad captures mink paw prints, indicating mink presence. If mink are detected by a monitoring raft, the monitoring raft is replaced with a live capture trap, which must then be checked daily by volunteers. If a mink is caught, a local dispatcher is called to humanely dispatch the animal (Invasive Species Scotland, 2024). If rafts are placed in locations with reliable mobile phone signals, they can be equipped with electronic monitoring devices that trigger when the trap closes, which can reduce response times and prevents the need for daily trap checks, helping to increase animal welfare and decrease trapping fatigue and logistical issues (Martin, 2022).

6.4.11 Further details, including funding information, details specific to the location of implementation, and approaches developed with the delivery partners for this measure, will be presented within the detailed Compensation Plan provided post-Application.

6.5 Monitoring

6.5.1 Monitoring efforts for predator control measures aim to ensure continuing efficacy of eradication and control measures, and a lack of incursions or re-invasions by the focal predator. In both the case of rat eradication and mink control measures, the Applicant will design monitoring packages and methodologies with the delivery partner, and these will be described in detail within the CIMP post-determination. More detailed information will additionally be provided within the post-Application Compensation Plan.

6.5.2 In the case of rat eradication, monitoring must take place pre-eradication, during implementation, and for the entirety of post-eradication biosecurity (during the lifetime of the Proposed Development). Monitoring will serve differing purposes at each stage. During pre-eradication it can help establish rodent density, distribution, rodenticide resistance, and other characteristics relevant to implementation (Thomas *et al.*, 2017d). During implementation, monitoring of bait stations is intense and can be key in identifying locations where rat presence persists (Thomas *et al.*, 2017c). Post-eradication, monitoring focuses on the possible presence of rats post-eradication, using techniques such as non-toxic bait, tracking tunnels, and trail cameras, and is necessary for establishing the success of eradication and maintaining an adequate network of biosecurity (Thomas *et al.*, 2017c).

6.5.3 Following international best practice, monitoring will provide the evidence that allows the focal location to be declared rat-free, once the location has met two criteria:

- No rats have been detected in an established two year monitoring phase post-eradication (based on the life expectancy of a wild rat at c.18 months); and
- No rats are detected during an established intensive monitoring check following the two year monitoring phase. This phase involves putting a range of monitoring devices over the entire area and checking every two days for six weeks.

6.5.4 Whilst monitoring has different focuses throughout the process of an eradication, monitoring of a mink control measure focuses principally on monitoring for the presence of the invasive predator, ensuring there are no incursions or increases in mink population in controlled areas. Monitoring methods can rely on volunteers to carry out monitoring duties across focal areas. Volunteers are often geographically positioned in the most vulnerable locations, in order to maintain a high level of control in these areas.

6.5.5 Monitoring methods that can be used for mink include mink rafts and traps, with the potential for additional methods incorporating advances in technology, such as remote sensing techniques, camera traps, and artificial intelligence image analysis. The Applicant will support delivery partners in designing and utilising monitoring methods that are deemed to be most effective.

6.5.6 Additional location-specific monitoring information, including information about monitoring the response of seabird populations and the wider ecosystem at chosen locations, will be provided in the Compensation Plan delivered post-Application.

6.6 Summary

6.6.1 To compensate for adverse effects on guillemot, puffin, razorbill, kittiwake and herring gull associated with the Proposed Development, the Applicant proposes compensation measures focusing on the control of INNS.

6.6.2 The measures are continuing to be developed by the Applicant and full details concerning location, delivery partners, and mechanisms for delivery will be provided within a detailed Ecological Evidence Report and Compensation Plan provided post-Application and will be further developed within the CIMP post-determination.

7 Bycatch Reduction

7.1 Introduction

7.1.1 In order to compensate for adverse effects on gannet associated with the Proposed Development, the Applicant proposes the reduction of gannet bycatch in commercial fisheries as a compensation measure. As set out in Table 1.2, the total impact of the Proposed Development on gannet, and therefore potential scale for compensation will be between 21 and 28 IND per annum. The Competent Authority's AA will determine the exact requirement for compensation.

7.1.2 The Applicant is currently working to develop a measure that aims to reduce the bycatch of gannet in commercial fishing vessels, due to the substantial evidence base demonstrating the risk that bycatch poses to gannets and the range of evidenced bycatch reduction techniques that could potentially be implemented.

7.1.3 The following sections provide the Competent Authority with an outline of the evidence and potential approaches for the proposed measure. A detailed Ecological Evidence Report and Compensation Plan will be provided post-Application that will detail the specific design of the measure, including the target locations and fisheries and the specific mechanisms of delivery.

7.2 Summary of Evidence

7.2.1 Bycatch can be defined as the accidental capture of non-target species in fishing gear (Dias *et al.*, 2019; Marine Directorate, 2023). It affects many different taxa and is recognised as one of the predominant threats to seabirds around the world (Croxall *et al.*, 2012; Dias *et al.*, 2019). A recent European study estimated that around 195,000 seabirds (range 130,000 to 380,000) may be killed through bycatch in European waters each year (Ramírez *et al.*, 2024). Globally, it is estimated that up to 400,000 seabirds are killed annually in gillnets (Žydelis *et al.*, 2013), and 320,000 in longline fisheries (Anderson *et al.*, 2011). These numbers include a wide diversity of bird species, including auks, shearwaters, gulls, ducks and, notably for this compensation measure, gannet (Ramírez *et al.*, 2024).

7.2.2 Gannet are highly vulnerable to bycatch (Bradbury *et al.*, 2017; Pott and Wiedenfeld, 2017), with Ramírez *et al.* (2024) ranking them as the third most bycatch-affected seabird species in European waters. Despite not being a deep-diving species, gannet can be caught in a wide range of different fishing gear, including surface and shallow pelagic gear, longlines, trawls and deeper nets during deployment and hauling (Bradbury *et al.*, 2017; Pott and Weidenfeld, 2017; Wanless *et al.*, 2023). Recorded gannet bycatch is usually most prevalent in fixed gear and longline fisheries where the birds are caught while diving onto hooks or into netting (e.g. Northridge *et al.*, 2020; Oliveira *et al.*, 2020; Marine Directorate, 2023; Pereira *et al.*, 2025) but can also occur in trawl fisheries (e.g. Hornsea Project Four, 2021) where it is likely under-monitored and under-reported (Pott and Wiedenfeld, 2017).

7.2.3 Gannet bycatch has been recorded in UK waters, where estimates reach a few hundred birds bycaught per year (Northridge *et al.*, 2020; Marine Directorate, 2023) and in large numbers in waters along the gannets' migratory flyway along the coastlines of western Europe including the Bay of Biscay and Iberian coasts (Bonanomi *et al.*, 2019; Oliveira *et al.*, 2020). Migratory connectivity between gannets breeding within the UK NSN and areas with gannet bycatch in Europe, is evidenced by a number of tracking studies (e.g. Kubetzki *et al.*, 2009; Fort *et al.*, 2012; Grecian *et al.*, 2019; Deakin *et al.*, 2019; Lane *et al.*, 2021). Therefore, a bycatch reduction programme can be targeted to European bycatch hotspots and deliver benefits to UK gannets and therefore the UK NSN.

7.3 Bycatch Reduction Technique Selection

7.3.1 Selected bycatch reduction techniques will be tailored towards the location of delivery of the measure, and the gear types used in the target fishery. More details will be provided in the detailed Compensation Plan post-Application.

7.3.2 There are a range of existing bycatch reduction methods available for implementation on different fishing vessels, designed for fixed gear, longline, and trawl fisheries. Successful methods to reduce seabird bycatch generally share a number of characteristics. In a review of bycatch reduction methods, O'Keefe *et al.* (2012) defined a successful method as one that:

- reduces the identified bycatch;
- does not have an adverse effect on the catch rate of the fishery's target species;
- does not increase the bycatch rate of other vulnerable species;
- does not lead to the spatial or temporal Displacement of bycatch;
- does not have an adverse effect on the ecosystem as a whole; and
- is economically viable for the fishery involved.

7.3.3 A selection of the existing bycatch reduction methods for fixed gear and longline fisheries, in addition to details of their viability, are summarised in Table 7.1. There are a range of methods available, many of which are still in trial phase. Techniques can often be species and location-specific, therefore the method chosen for this compensation measure would follow the guidance of delivery partners and experts engaged with throughout the process of designing and implementing this compensation measure, as well as published guidance such as that from the Agreement on the Conservation of Albatrosses and Petrels (ACAP).

7.3.4 Techniques aimed at reducing seabird bycatch include modifying both vessels and gear, operational changes, bird deterrence, and methods to reduce attraction of birds to gear and the likelihood of birds being caught. Modifying fishing practices in relevant fisheries are also under review. This includes, for example, avoiding bycatch by using knowledge of bird behaviour to avoid bycatch hotspots during months when bycatch rates are reported to be highest.

Table 7.1: Examples of Existing Seabird Bycatch Reduction Techniques and Current Understanding of Their Viability. Based on Information from Parker (2017), Marine Directorate (2023), and Wiedenfeld (2016)

Method	Fishery types in which method is used/tested	Method details and viability
Bird-scaring lines (Tori lines)	Longline	Bright scaring lines are installed to hang above the area where hooks or gear are present to deter birds and prevent interactions with gear. They are in widespread use and applicable to most fisheries and gear types. Considered best practice when used in conjunction with other methods. Several studies show high effectiveness across a wide range of seabird species (see Parker, 2017; Jiménez *et al*., 2020).
Other visual and acoustic bird scarers	Longline, fixed gear, trawl	Acoustic deterrents have not been well-tested across fisheries, and there are issues around habituation by seabirds. Visual scarers have seen early success in trials (e.g. Almeida *et al*., 2023; Rouxel *et al*., 2022).
Offal and discard management	Longline, fixed gear	Involves better management of offal, often retention on-board. Sees widespread use and is recommended by the Agreement on the Conservation of Albatrosses and Petrels (ACAP, 2023), however there may be logistical and safety constraints associated with the storage of all offal on-board (Bull, 2007). Regarding gannet, Clark *et al*. (2020) found that gannets were significantly less attracted to fishing vessels in areas where a discard ban on commercial species was in place.
Night setting of gear	Longline, fixed gear	Widely used and is recommended as best practice by the ACAP when used alongside bird-scaring lines and line weighting (ACAP, 2023). However, effectiveness may vary across species and can even increase the bycatch of some species. It can, in principle, be expected to be effective for gannet given that gannet flight and diving activity is minimal at night (Furness *et al*., 2018).
Line weighting	Longline	Weighting lines increases their sink rate thus minimising the length of time in which baited hooks are within range of diving seabirds. Considered best practice by ACAP (2023) when used in conjunction with night setting and bird-scaring lines. Currently more widespread in bottom longlines than surface longlines and may require further refinement.
Hook adjustments (e.g. Hookpod)	Longline	Adjustments can help reduce the likelihood of birds becoming caught on longline hooks. Examples include swivel hooks and a device called the 'Hookpod'. Hookpods encase the baited hook to prevent birds becoming caught, only releasing the hooks when they have reached a prescribed depth of 20 m from the surface. They have seen success in trials (e.g. Sullivan *et al*., 2018). Hookpods would, in principle, be effective in relation to gannet given that only a very small proportion of gannet dives reach or exceed 20 m in depth (Garthe *et al*., 2000). Many of these hook adjustments are not in widespread use and more assessment is likely to be required.
Underwater setting	Longline	Underwater setting systems set the line at a depth out of range of surface-feeding seabirds. Not often highly effective when deployed alone, and the depth that would be required in order to avoid the foraging zone of diving gannets make this technique perhaps unlikely to be viable.

Method	Fishery types in which method is used/tested	Method details and viability
Brickle curtain	Longline, fixed gear	A frame with bird-scaring streamers surrounds the hauling area to exclude seabirds from the area. The technique has been tested comprehensively and is in widespread use around the world. Some issues reported with habituation and the curtain interfering with fishers during hauling.
Net visibility	Fixed gear	Examples of techniques to increase net visibility include visibility panels and brightly coloured meshes added to nets such as gillnets. Most of these methods are in early prototype stages and not in widespread use, and there is some evidence they may reduce catches of target fish (Montevecchi *et al.*, 2023).

7.3.5 An important consideration for the implementation of bycatch reduction methods is the reception of measures by fishers, on whose vessels the methods would be put into practice. In a number of cases, bycatch reduction measures have been received in a largely positive manner by the fishing industry. For example, in the UK, 80% of fishers surveyed for a pilot study for Hornsea Project Four (Hornsea Project Four, 2021) agreed to participate, and the fishers involved in the Marine Directorate (2023) study showed general willingness to assist in trials of bycatch reduction, and provided perspectives and suggestions for possible bycatch solutions.

7.3.6 The long-term success of a programme of bycatch reduction depends on the sustained involvement of fishers willing to take part in trials and adjust their fishing practices to integrate selected reduction techniques. The Applicant will collaborate closely with delivery partners to prioritise the relationship with fishers involved in the measure and ensure fishers are engaged throughout. Specific details about the mechanism of delivery and fisher engagement will be provided within the detailed Compensation Plan provided post-Application.

7.4 Sufficiency and Scale

7.4.1 The scale of compensation, if required, will be determined by the Competent Authority's AA. Full details about the process for calculating the scale of the implementation of this measure, specific to the location of implementation, will be provided in the detailed Compensation Plan post-Application.

7.4.2 In summary, the scale of this measure's implementation will be determined by the number of gannets estimated to be saved through the application of bycatch reduction techniques aboard fishing vessels. The number of birds saved will be calculated by applying efficacy rates established during bycatch reduction trials to baseline bycatch levels recorded prior to implementation. Efficacy rates of selected bycatch reduction techniques will be reached via a robust trial period, in which chosen methods will be tested on vessels following academic best practice approaches in the scientific literature, and in close collaboration with delivery partners. Efficacy rates will be tailored to reflect variations by location, fishing gear type, and the specific bycatch reduction technique used, and calculations will be scaled based on the number of vessels

adopting the mitigation measures. Baseline bycatch levels will be established from bycatch monitoring in the target fisheries, carried out in close collaboration with delivery partners and following established monitoring protocols (see further commentary on monitoring approaches in Section 7.5).

7.4.3 It is intended that the scale of delivery, in terms of the number of gannets saved from bycatch, will be additionally adjusted to account for the age structure of bycaught birds. Gannets only breed for the first time at age five (Horswill and Robinson, 2015), and this compensation measure aims to offset impacts to breeding bird populations (adult birds aged at least five years or older).

7.4.4 Age-specific survival rates for gannet are estimated to be 0.424 (0 to 1 year), 0.829 (1 to 2 years), 0.891 (2 to 3 years), 0.895 (3 to 4 years), and 0.919 (4 to 5 years and beyond) (Horswill and Robinson, 2015). These survival rates can be used to calculate the number of immature gannets required to recruit one adult breeding bird into the meta-population. For example, the number of juvenile (first-year) gannets required to recruit one breeding adult is: 1/(0.424 x 0.829 x 0.891 x 0.895 x 0.919) = 3.88 birds. Thus, one first-year gannet prevented from bycatch can be seen as equivalent to 0.26 (1/3.88) breeding birds. Noting that the compensation requirement for the Proposed Development is 30 adult gannets.

7.4.5 The exact ageing of gannets to their year of age may not always be possible during baseline monitoring. Ageing gannets can be complicated, and is unlikely to be accurately undertaken by fishers or through the assessment of on-board camera footage. It is however intended that the feasibility of achieving different levels of accuracy in determining the age of bycaught gannets will be tested. It is more feasible under these operational conditions that birds can be classed as juvenile/immature or adult/mature, in which case calculations can assume birds are the youngest possible age, so as to be precautionary. The same precautionary approach can be taken should there be no information available about the age of any birds.

7.4.6 Put together, the approach to calculating the scale of delivery of the measure is intended to proceed as follows:

- Step 1: Determine baseline counts of bycatch in a given bycatch hotspot. Establish separate counts for juveniles, immature birds, and adults where possible.
- Step 2: Test the chosen bycatch reduction method to establish its efficacy rate (e.g., an 80% reduction in bycatch when implementing bird-scaring lines).
- Step 3: Determine the scale of implementation based on the bycatch baselines and efficacy rates, by applying the percentage efficacy to the baseline bycatch counts and scaling according to the number of vessels with implemented bycatch reduction.
- Step 4: Adjust the scale by converting any juvenile/immature birds to their equivalent numbers of breeding adults, using age-specific survival rates discussed above.

7.4.7 Once the bycatch reduction technique is deployed, post-implementation sample monitoring will be carried out to determine adherence to the agreed implementation method and to obtain samples of post-implementation results. At this point, the metric of success will be the implementation of the bycatch reduction technique, and the number of birds determined to be protected from bycatch based on the approach to calculating scale summarised in this section, and elaborated upon in more detail in the post-Application Compensation Plan.

7.4.8 For bycatch reduction implemented outside of the UK NSN, an additional step would be included when calculating scale of delivery: further adjusting the scale according to the proportion of bycaught birds that can be apportioned back to the UK NSN. The analysis of bycaught birds, for example using genomics and/or stable isotopes, can provide information about their breeding colony of origin, and thus provide data for how many bycaught birds can be apportioned back to locations within the UK NSN.

7.5 Monitoring

7.5.1 Monitoring of bycatch will be important for both establishing the pre-implementation baseline levels of gannet bycatch in the chosen location, but also for ensuring continued adherence to and success of the measure post-implementation. The Applicant will work together with delivery partners to create and support a standardised monitoring protocol, following best practice guidance and established methodologies from the scientific literature.

7.5.2 Examples of methods for monitoring bycatch that could be employed as part of monitoring protocols for this measure are described in Table 7.2. In addition to these methods, both the potential for training fishers in effective bycatch reporting and camera monitoring systems will be explored as potential methods for bycatch monitoring, pending discussion with local delivery partners.

Table 7.2: Descriptions of Established Monitoring Methods to Collect Data on Seabird Bycatch

Monitoring method	Description
Questionnaires and interviews	Carrying out questionnaires and interviews with fishers collects information on fishing operations, target fish species, and observations of seabirds in fishing areas and their interactions with fishing activities and gears. Captains are requested to provide information on bycatch incidents, in terms of total numbers or monthly averages. Data includes details such as the number of interviews collected, the total numbers of reported seabird bycatch, average bycatch per trip, and the average number of trips carried out by each vessel (e.g. Oliveira *et al.*, 2015).
On-board observers	Observers placed on-board fishing vessels document any incidental bycatch of seabirds, as well as other interactions of seabirds with the vessel or fishing gear. Data also includes all details of the fishing methods employed, locations of all fishing trips and interactions, fishing effort, and the quantity of target species caught (ACAP, 2021).
Logbooks	Logbooks are kept voluntarily by vessel captains, and record the number of birds caught as bycatch and the species involved, as well as other details such as vessel speed, the gear used, and catches of target fish species (Lago *et al.*, 2023).

7.5.3 Post-implementation monitoring will follow a similar approach to pre-implementation efforts but in a more streamlined manner. It would seek to ensure adherence to the implementation of bycatch reduction methods, and obtain samples of the post-implementation results to monitor the measure's continuing efficacy. Further specifics will be provided in the detailed post-Application Compensation Plan and in the CIMP produced post-determination. The metric of success for the measure will be the implementation of the chosen bycatch reduction technique, with the benefit to breeding gannet populations determined based on the scale calculations procedure discussed in Section 7.4, and expanded upon in more location-specific detail in the post-Application Compensation Plan.

7.6 Example Timeline

7.6.1 The timeline for implementing this compensation measure will be established through continued discussion with the delivery partners. The bycatch reduction techniques can be deployed and effective before the operation of the Proposed Development, at which point the measure will immediately begin fulfilling its purpose by reducing adult gannet mortality. A detailed timeline containing all stages of implementation will be set out in the CIMP.

7.6.2 The Applicant currently proposes the following approximate example timeline for the implementation of this measure:

- 2026 to 2027: Establish bycatch baseline numbers and the locations of bycatch hotspots.
- 2027 to 2030: Trial bycatch reduction methods and obtain data on their effectiveness. These trials would begin to deliver compensation as vessels involved in trials begin to see reduced gannet bycatch, thus starting to deliver compensation prior to the operational target of the Proposed Development of 2035.
- 2030 onwards: Implementation of the chosen bycatch reduction method(s) and continued monitoring.

7.7 Summary

7.7.1 The Applicant proposes a compensation measure that aims to reduce the bycatch of gannet in commercial fisheries. The measure is continuing to be developed by the Applicant and full details concerning the measure's location, delivery partners, and mechanisms for delivery will be provided within a detailed Ecological Evidence Report and Compensation Plan provided post-Application.

8 Compensation Measures Delivery Package

8.1.1 The compensation measures proposed for the Proposed Development (if deemed necessary by Scottish Ministers) have been designed as a package, with each measure targeting specific species identified through the Applicant's RIAA process. The measures are intended to work either in parallel or separately to address adverse effects associated with the Proposed Development on the Qualifying Features of relevant SPAs and the wider UK NSN.

8.1.2 By way of a summary, the package of primary proposed measures includes:

- Predator control/eradication, which is focused on supporting the recovery of guillemot, puffin, razorbill, kittiwake and herring gull by controlling invasive mammalian predators at key breeding locations, thereby reducing predation pressure and increasing breeding success across the UK NSN; and
- Bycatch reduction, which is aimed at gannet, addressing mortality in commercial fisheries through the implementation of bycatch reduction techniques.

8.1.3 The compensation package is intentionally designed to be flexible and scalable. This allows for adaptation in response to the final outcomes of the Scottish Ministers' AA. The measures can be adjusted in scale, scope, or focus to ensure that the compensation delivered is proportionate to the impacts identified. Flexibility is embedded in the approach, enabling delivery via project level, collaborative or strategic approaches as available and appropriate, ensuring that the package remains robust under a range of possible scenarios.

8.1.4 The final measures will be further detailed post-Application, within the Compensation Plan. The final delivery package (including the precise combination, scale, and location of compensation measures) will be set out in the detailed CIMP following determination. Multiple options are available to compensate at scale for the impacts associated with the Proposed Development, providing increased confidence in the overall derogation proposals.

8.1.5 For further assurance, Section 9 (Adaptive Management) sets out the proposed approach at a high level that will be taken, if required, to account for unforeseen circumstances. Should any of the measures described above prove unsuccessful or require modification, adaptive management can be progressed, if required, to ensure that compensation objectives are still successfully met. This approach provides an additional layer of resilience, allowing for ongoing refinement and improvement of the compensation package in response to monitoring results and emerging evidence.

9 Adaptive Management

9.1.1 The European Commission (EC) (2018) Guidance recognises that the feasibility of the identified compensation measure must be based on the best scientific knowledge available. Developing compensation cases remains a novel and changeable process, increasing the importance of pre- and post-implementation monitoring.

9.1.2 Following determination, there will be a subsequent compensation measure development phase where further evidence will be gathered. This will be followed by monitoring which will continue throughout the operational life of the Proposed Development (up to 30 years).

9.1.3 Where required, monitoring and adaptive management will be utilised to ensure, in line with guidance, that the proposals are developed in the most appropriate manner to meet their objectives. They will be flexible to enable modifications to be made where evidence suggests it is merited in order to ensure the coherency of the UK NSN is maintained. It is important to recognise that the compensation measures proposed here are part of a package of measures which provide resilience across the compensation actions for the Qualifying Features.

9.1.4 The Applicant's compensation proposal will adopt a pragmatic approach, which will be used to inform whether adaptive management actions are necessary once the Proposed Development is operational. The Applicant will discuss any potential need for adaptive management, as well as potential 'trigger points' for adaptive management, with relevant stakeholders.

9.1.5 Adaptive management is an iterative process that combines management measures with ongoing monitoring to enhance the effectiveness of the measure, whilst also updating knowledge and improving decision-making over time. Adaptive management will play a crucial role in the context of the compensation measures, serving as a flexible tool to address unexpected issues or deviations from the anticipated outcomes of the compensation.

9.1.6 Due to the detailed approach to compensation, it is expected that the compensation proposals will not need any additional management actions beyond general maintenance during the lifetime of the Proposed Development.

9.1.7 However, it is essential to remain alert to unforeseen events that may necessitate adaptive management. The Applicant's compensation aims, as much as practicable, to mitigate all foreseeable risks through design, implementation, and planned maintenance. Additionally, measures presented by the Applicant have been developed to be flexible and scalable and therefore can be increased as and if necessary to respond to feedback or requirements identified by the adaptive management process.

9.1.8 Any long-term challenges to the effectiveness of the compensation should be viewed in a regional/biogeographic context and in the context of natural variability, climate change, and other pressures.

9.1.9 An overview of the potential adaptive management actions are presented below, covering two tiers. This approach is non-hierarchical, but preference may be set by the Applicant at a later date. They include:

- Tier 1 – Adaptive management 'bolt on' options relative to the primary measures detailed in the sections above are presented in Table 9.1; and
- Tier 2 – Government-led strategic compensation measures, when available.

Table 9.1: Tier 1 Potential Adaptive Management Options Relevant to Each Compensation Measure

Compensation Measure	Potential Adaptive Management 'Bolt On' Options
Predator Control/Eradication	• Additional control implementation years; • Enhanced recruitment support – auk calls and decoys; • Disturbance reduction from recreational activities (both via land and sea); • Identification and removal of additional invasive alien species (including vegetation) present at nesting locations; • Management of avian predators (i.e. corvid species) if found to be negatively impacting the recovery of the populations across control locations; • New areas for control; • Provision of additional personnel to intensify efforts; and • Inclusion of predator proof fencing at readily accessible colonies.
Bycatch Reduction	• Expansion of bycatch reduction technology to additional vessels within the fishery; • Trial of other bycatch reduction techniques to test implementation capabilities; and • Exploration of the application of bycatch reduction technology at other locations/fisheries (expanded upon in Section 7.3).

10 Other Benefits of Compensation Measures

10.1.1 The suite of compensation measures that the Applicant is proposing to use to offset the Proposed Development's adverse impacts will evidently bring benefits to the impacted species. However, these measures will also bring a substantial number of other benefits.

10.1.2 Eradication of invasive non-native rodents will bring benefits to other seabird species breeding at the chosen locations. Additionally, the measure will benefit other bird species breeding, including passerines and waders. Invertebrates are also likely to be prey of brown rats and so eradicating these rodent species will benefit invertebrate communities. This, in turn, will also benefit birds that feed on invertebrates and flora which dependent on these invertebrates. The non-native rodents may also be feeding on particular plants and may be limiting their growth or reproduction (e.g. by rodents feeding on seeds). Removing these non-native rodents will benefit biodiversity in many ways.

10.1.3 Installing bycatch mitigation measures on the target fishing fleet will benefit other seabirds, besides gannets. Whilst gannets are the most frequently caught seabird species, International Council for the Exploration of the Sea (ICES) (2024) reported shag and cormorant also being bycaught by the target fishery. Measures that work for gannet, such as bird scarers, are likely to work for other seabird species too (Anderson *et al.,* 2022).

11 Compensation Implementation and Monitoring Plan

11.1.1 The Applicant will provide further information on proposed locations, implementation methods and compensation benefit in the Ecological Evidence Report and Compensation Plan to be submitted post-Application. Furthermore, the Applicant will provide refinement of the proposed compensatory measures within the detailed CIMP, post-determination. The CIMP will present further detail on the delivery methodology for the compensatory measures, including their flexibility to the project compensation need and scale, which will be submitted to the Scottish Ministers to be approved in consultation with relevant key stakeholders post-determination. An outline of the CIMP will be submitted post-Application and pre-determination.

References

ACAP (2021). *Data collection guidelines for observer programmes to improve knowledge of fishery impacts on ACAP-listed species*. Agreement on the Conservation of Albatrosses and Petrels. Available at: https://acap.aq/bycatch-mitigation/bycatch-monitoring/3971-acap-data-collection-guidelines-for-observer-programmes/file. Accessed on: 13 November 2025.

ACAP (2023). *Review of mitigation measures and Best Practice Advice for Reducing the Impact of Pelagic Longline Fisheries on Seabirds*. Agreement on the Conservation of Albatrosses and Petrels. Available at: https://www.acap.aq/resources/bycatch-mitigation/mitigation-advice/4548-acap-2023-pelagic-longlines-mitigation-review-and-bpa/file. Accessed on: 13 November 2025.

Almeida, A., Alonso, H., Oliveira, N., Silva, E., and, Andrade, J. (2023). Using a visual deterrent to reduce seabird interactions with gillnets. Biological Conservation 285, 110236.

Anderson, O., Small, C., Croxall, J., Dunn, E., Sullivan, B., Yates, O., and, Black, A. (2011). Global seabird bycatch in longline fisheries. Endangered Species Research 14(2), 91-106.

Anderson, O., Thompson, D. and Parsons, M. (2022). Seabird bycatch mitigation: evidence base for possible UK application and research. 10.13140/RG.2.2.36732.41604.

Anker-Nilssen, T., Barrett, R. T., Bustnes, J.O., Erikstad, K.E., Fauchald, P., Lorentsen, S.H., Steen, H., Strøm, H., Systad, G.H., and Tveraa, T. (2006). SEAPOP studies in the Lofoten and Barents Sea area in 2006. NINA Report 249.

Appleton, D., Booker, H., Bullock, D.J., Cordrey, L., and Sampson, B. (2004). Interim report on the Seabird Recovery Project: Lundy. Annual Report of the Lundy Field Society 2003, 53-57.

Atkinson, I.A.E. (1985) The spread of commensal species of Rattus to oceanic islands and their effects on island avifaunas. Conservation of Island Birds (ed. P.J. Moors), 35–81. ICBP Publication No. 3. ICBP, Cambridge, UK.

Biosecurity for Life. (2017). *UK Rodent Eradication Best Practice Toolkit*. Available at: https://biosecurityforlife.org.uk/resources/detail/uk-rodent-eradication-best-practice-toolkit. Accessed on: 13 November 2025.

Björnsson, T., and Hernsteinsson, P. (1991). Mink in southern Breidfjordur Bay. Wildlife Management News (Iceland), 7, 3–12 (in Icelandic).

Bonanomi, S., Clarke, M. W., Couperus, B., Dorrien, C. V., Evans, P., Fernandez, R., Hielscher, N., Kamińska, K., Kingston, A., Koschinski, S., Larsen, F., Marçalo, A., Peltier, H., Pinto, C., Plikshs, M., Sigurðsson, G. M., & Wozniczka, A. (2019). Working Group on Bycatch of Protected Species (WGBYC). International Council for the Exploration of the Sea (ICES). ICES Scientific Report Vol. 1 No. 51 https://doi.org/10.17895/ices.pub.5563

Bonesi, L., and Palazon, S. (2007). The American mink in Europe: status, impacts, and control. Biological conservation , 134(4), 470-483.

Booker, H., Slader, P., Price, D., Bellamy, A.J., and Frayling, T. (2018). Cliff nesting seabirds on Lundy: Population trends from 1981 to 2017. J Lundy Field Soc, 6, 65-76.

Bradbury, G., Shackshaft, M., Scott-Hayward, L., Rextad, E., Miller, D. and Edwards, D. (2017). Risk assessment of seabird bycatch in UK waters. Report to Defa. Defra Project: MB0126

Bull, L.S. (2007). Reducing seabird bycatch in longline, trawl and gillnet fisheries. Fish and Fisheries, 8(1), 31-56.

Calhoun, J.B. (1963). The ecology and sociology of the Norway rat (No. 1008). US Department of Health, Education, and Welfare, Public Health Service.

Clark, B.L., Vigfúsdóttir, F., Jessopp, M.J., Burgos, J.M., Bodey, T.W., and Votier, S.C. (2020). Gannets are not attracted to fishing vessels in Iceland—potential influence of a discard ban and food availability. ICES Journal of Marine Science 77(2), 692-700.

Clode, D., and Macdonald, D.W. (2002). Invasive predators and the conservation of island birds: the case of American Mink Mustela vison and terns Sterna spp. in the Western Isles, Scotland. Bird Study 49(2), 118-123.

Craik, J.C.A. (1997). Long-term effects of North American mink Mustela vison on seabirds in Western Scotland. Bird Study, 44, 303–309.

Croxall, J.P., Butchart, S.H.M., Lascelles, B., Stattersfield, A.J., Sullivan, B., Symes, A., and Taylor, P. (2012). Seabird conservation status, threats and priority actions: a global assessment. Bird Conservation International, 22, 1-34.

Deakin, Z., Hamer, K.C., Sherley, RB., Bearhop, S., Bodey, T.W., Clark, B.L., Grecian, W.J., Gummery, M., Lane, J., Morgan, G., Morgan, L, Phillips, R.A., Wakefield, E.D, and Votier, S.C. (2019). Sex differences in migration and demography of a wide-ranging seabird, the northern gannet. Marine Ecology Progress Series 622, 191-201.

Defra (2021). *Best practice guidance for developing compensatory measures in relation to Marine Protected Areas*. Department for Environment Food and Rural Affairs. Available at: https://consult.defra.gov.uk/marine-planning-licensing-team/mpa-compensation-guidance-consultation/supporting_documents/mpacompensatorymeasuresbestpracticeguidance.pdf Accessed on: 13 November 2025.

Defra (2024). *Consultation on policies to inform updated guidance for Marine Protected Area (MPA) assessments*. Department for Environment Food and Rural Affairs. Available at: https://consult.defra.gov.uk/offshore-wind-environmental-improvement-package/consultation-on-updated-guidance-for-environmental/supporting_documents/090224%20OWEIP%20Consultation%20on%20updated%20policies%20to%20inform%20guidance%20for%20MPA%20assessments_.pdf. Accessed on: 13 November 2025.

Defra (2025). Summary of responses and government response. Department for Environment Food and Rural Affairs. Available at: https://www.gov.uk/government/consultations/offshore-wind-environmental-compensation-reforms/outcome/summary-of-responses-and-government-response Accessed on: 05 January 2026.

Dias, M.P., Martin, R., Pearmain, E.J., Burfield, I.J., Small, C., Phillips, R.A., Yates, O., Lascelles, B., Borboglu, P.B, and Croxall, J.P. (2019). Threats to seabirds: a global assessment. Biological Conservation, 237, 525-537.

Dickie, G. (2018). *The Mysterious Decline of Iceland's American Invader. Hakai Magazine*. Available at: https://hakaimagazine.com/features/the-mysterious-decline-of-icelands-american-invader/. Accessed on: 18 November 2024.

Energy Act (2023). Available at: https://www.legislation.gov.uk/ukpga/2023/52/contents. Accessed on: 27 February 2026.

European Commission (2018). *Managing and protecting Natura 2000 sites*. Available at: https://environment.ec.europa.eu/topics/nature-and-biodiversity/natura-2000/managing-and-protecting-natura-2000-sites_en. Accessed on: 12 June 2025.

Fasola, L., Muzio, J., Chehébar, C., Cassini, M., and Macdonald, D.W. (2011). Range expansion and prey use of American mink in Argentinean Patagonia: dilemmas for conservation. European Journal of Wildlife Research 57(2), 283-294.

Fort, J., Pettex, E., Tremblay, Y., Lorentsen, S.H., Garthe, S., Votier, S., Pons, J.B., Siorat, F., Furness, R.W., Grecian, W.J., Bearhop, S., Montevecchi, W.A., and Grémillet, D. (2012). Meta-population evidence of oriented chain migration in northern gannets (Morus bassanus). Frontiers in Ecology and the Environment 10(5), 237-242.

Fraser, E.J., Lambin, X., Travis, J.M., Harrington, L.A., Palmer, S.C., Bocedi, G., and Macdonald, D.W. (2015). Range expansion of an invasive species through a heterogeneous landscape–the case of American mink in Scotland. Diversity and Distributions 21(8), 888-900.

Furness, R.W., MacArthur, D., Trinder, M., and Macarthur, K. (2013). Evidence review to support the identification of potential conservation measures for selected species of seabirds. Report to Defra.

Furness, R.W., Garthe, S., Trinder, M., Matthiopoulos, J., Wanless, S., and Jeglinski, J. (2018). Nocturnal flight activity of northern gannets Morus bassanus and implications for modelling collision risk at offshore wind farms. Environmental Impact Assessment Review 73, 1-6.

Furness, R.W. (2021) *Report to Crown Estate Scotland and SOWEC: HRA Derogation Scope B – Review of seabird strategic compensation options. MacArthur Green, Glasgow*. Available at: https://www.offshorewindscotland.org.uk/media/12970/hra-derogation-scope-b-report.pdf Accessed on: 13 November 2025.

Garget (2024). *Genes reveal how to save wildlife from invasive minks. East Anglia Bylines*. Available at: https://eastangliabylines.co.uk/environment/the-mink-must-go/. Accessed on: 13 November 2025.

Garthe, S., Benvenuti, S., and Montevecchi, W.A. (2000). Pursuit plunging by northern gannets (Sula bassana)" feeding on capelin (Mallotus villosus)". Proceedings of the Royal Society of London. Series B: Biological Sciences 267(1454), 1717-1722.

Grecian, W.J., Williams, H.J., Votier, S.C., Bearhop, S., Cleasby, I.R., Grémillet, D., and Bodey, T. W. (2019). Individual spatial consistency and dietary flexibility in the migratory behavior of northern gannets wintering in the northeast Atlantic.

Hamer, K.C., Schreiber, E.A., and Burger, J. (2001). Breeding biology, life histories, and life history-environment interactions in seabirds. Biology of marine birds, 45, 217-261.Frontiers in Ecology and Evolution 7, 214.

Hipfner, J.M., Lemon, M.J., and Rodway, M.S. (2010). Introduced mammals, vegetation changes and seabird conservation on the Scott Islands, British Columbia, Canada. Bird Conservation International, 20(3), 295-305.

Houston, A.I., and McNamara, J.M. (1985). A general theory of central place foraging for single-prey loaders. Theoretical Population Biology 28(3), 233-262.

Hornsea Project Four (2021). *Hornsea Project Four: Derogation Information: Volume B2, Annex 8.1: Compensation measures for FFC SPA: Bycatch Reduction: Ecological Evidence.* Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-000511-B2.8.1%20RP%20Volume%20B2%20Annex%208.1%20Compensation%20measures%20for%20FFC%20SPA%20Bycatch%20Reduction%20Ecological%20Evidence.pdf. Accessed on: 13 November 2025.

Horswill, C., and Robinson, R.A. (2015). Review of Seabird Demographic Rates and Density Dependence. JNCC Report no. 552. Joint Nature Conservation Committee, Peterborough.

ICES (2024). Working Group on Bycatch of Protected Species (WGBYC). ICES Scientific Reports. International Council for the Exploration of the Sea. Report. https://doi.org/10.17895/ices.pub.27762723.v6. Accessed on: 23 February 2026.

Invasive Species Scotland (2024). *Mink Control Project. Invasive Species Scotland*. Available at: https://www.invasivespecies.scot/mink-control-project. Accessed on: 13 November 2025.

Jiménez, S., Domingo, A., Winker, H., Parker, D., Gianuca, D., Neves, T., Coleho, R., and Kerwath, S. (2020). Towards mitigation of seabird bycatch: large-scale effectiveness of night setting and Tori lines across multiple pelagic longline fleets. Biological Conservation 247, 108642.

JNCC, BTO, RSPB, Natural England, Natural Resources Wales and NatureScot. (2025). *Seabird Monitoring Programme*. Available at: https://app.bto.org/seabirds/public/index.jsp. Accessed on: 30 January 2025.

Jones, H.P., Tershy, B.R., Zavaleta, E.S., Croll, D.A., Keitt, B.S., Finkelstein, M.E., and Howald, G.R. (2008). Severity of the effects of invasive rats on seabirds: a global review. Conservation Biology, 22(1), 16-26.

Kubetzki, U., Garthe, S., Fifield, D., Mendel, B., and Furness, R.W. (2009). Individual migratory schedules and wintering areas of northern gannets. Marine Ecology Progress Series 391, 257-265.

Lago, P., Cortés, V., Tobella, C., Soliño, L., Fargas, M., García, D., Josa, P., Mulet, T., Orts, A., Tarzia, M., Yates, O and Arcos, J. M. (2023). *Self-reporting logbooks to collect seabird bycatch data: case study in the western Mediterranean Sea.* Available at: https://www.bmis-bycatch.org/system/files/zotero_attachments/library_1/R5TJUZ6R%20-%20Lago%20et%20al.%20-%20Self-reporting%20logbooks%20to%20collect%20seabird%20bycatch.pdf. Accessed on: 13 November 2025.

Lane, J.V., Pollock, C.J., Jeavons, R., Sheddan, M., Furness, R.W., and Hamer, K.C. (2021). Post-fledging movements, mortality and migration of juvenile northern gannets. Marine Ecology Progress Series 671, 207-218.

López, R., Clapperton, B.K., and Medina-Voguel, G. (2023). A global review of the American mink (Neovison vison) removal techniques–Patagonia as a case study for their potential application. Gayana 87(1), 43-62.

Marine Directorate (2023*). Improving understanding of seabird bycatch in Scottish longline fisheries and exploring potential solutions*. Available at: https://www.gov.scot/publications/improving-understanding-seabird-bycatch-scottish-longline-fisheries-exploring-potential-solutions/pages/1/. Accessed on: 13 November 2025.

Martin, A.R. (2022). *Reliability and effective use of electronic trap monitoring systems based on cellular networks. Bol Invasions 24, 1247-1251 (2022)*. Available at: https://doi.org/10.1007/s10530-021-02713-2. Accessed on: 13 November 2025.

Mitchell, I., and Daunt, F. (2010). Seabirds in MCCIP Annual Report Card 2010-11, MCCIP Science Review, 12pp.

Mitchell, P.I., Newton, S., Ratcliff E.N., and Dunn, T.E. (eds.) (2004). Seabird Populations of Britain and Ireland: results of the Seabird 2000 census (1998–2002). London, UK: T and A.D. Poyser.

Montevecchi, W.A., Lamarre, J., Rouxel, Y., Montevecchi, M., Blackmore, R.J., Bourne, C., and Spiegel, C.B. (2023). Highcontrast banners designed to deter seabirds from gillnets reduce target fish catch. Marine Ornithology 51, 115-123.

National Infrastructure Planning (2022). *Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects*. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/. Accessed on: 13 November 2025.

NatureScot. (2024). *Hebridean Mink Project*. Available at: https://www.nature.scot/professional-advice/land-and-sea-management/managing-wildlife/hebridean-mink-project. Accessed on: 13 November 2025.

NBN Atlas (2025). *Neovison vison: American Mink*. Available at: https://species.nbnatlas.org/species/NHMSYS0020774297. Accessed on: 13 November 2025.

Northridge, S., Kingston, A., and Coram, A. (2020). Preliminary estimates of seabird bycatch by UK vessels in UK and adjacent waters'. Report prepared for the Department for Environment Food and Rural Affairs (Project Code ME6024).

O'Keefe, C.E., Cadrin, S.X., and Stokesbury, K.D. (2012). Evaluating success of bycatch mitigation measures. ICES CM 2012/C17.

Oliveira, N., Almeida, A., Alonso, H., Constantino, E., Ferreira, A., Gutiérrez, I., Santos, A., Silva, E., and Andrade, J. (2020). A contribution to reducing bycatch in a high priority area for seabird conservation in Portugal. Bird Conservation International 31(4), 553-572.

Oliveira, N., Henriques, A., Miodonski, J., Pereira, J., Marujo, D., Almeida, A., Barros, N., Andrade, J., Marcalo, A., Santos, J., Oliveira, I.B., Ferreira, M., Araujo, H., Monteiro, S., Vingada, J., and Ramírez, I. (2015). Seabird bycatch in Portuguese mainland coastal fisheries: An assessment through on-board observations and fishermen interviews. Global Ecology and Conservation 3, 51-61.

Parker, G.C. (2017). Stocktake of measures for mitigating the incidental capture of seabirds in New Zealand commercial fisheries. Report to Southern Seabird Solutions Trust by Parker Conservation, Dunedin.

Pereira, J.M., Ramos, J.A., Almeida, A., Marçalo, A., Carvalho, F., Fagundes, I., Goncalves, J.M.S., Frade, M., Oliveira, N., Nascimento, T., and Paiva, V.H. (2025). Seasonal variation in seabird abundance and bycatch at artisanal bottom-set net fisheries in the southern Iberian Atlantic coast. Ocean & Coastal Management 267, 107660.

Pizzolla, P., Tyler, G., Grant, M., Salmon, W., Harker, J. and Bower, R. (2024). Development of Ornithology Regional Compensation Measures. Report to the NE/E ScotWind Developers' Group.

Pott, C., and Wiedenfeld, D. (2017). Information gaps limit our understanding of seabird bycatch in global fisheries. Biological Conservation 210, 192-204.

Ramírez, I., Mitchell, D., Vulcano, A., Rouxel, Y., Marchowski, D., Almeida, A., Arcos, J.M., Cortes V., Lange, G., Morkunas, J., Oliveira, N., and Paiva, V.H. (2024). Seabird bycatch in European waters. Animal Conservation.

Rouxel, Y., Crawford, R., Buratti, J.P.F., and Cleasby, I.R. (2022). *Slow sink rate in floated-demersal longline and implications for seabird bycatch risk. PLoS ONE 17(4), e0267169.* Available at: https://doi.org/10.1371/journal.pone.0267169. Accessed on: 24 February 2026.

Roy, S.S., Chauvenet, A.L.M., and Robertson, P.A. (2015). Removal of American mink (Neovison vison) from the Uists, Outer Hebrides, Scotland. Biological Invasions 17, 2811-2820.

Scottish Government (2015). Scotland's biodiversity: a route map to 2020. Available at: https://www.gov.scot/publications/scotlands-biodiversity-route-map-2020/pages/4/. Accessed on: 23 February 2026.

Scottish Government (2020). *Sectoral marine plan for offshore wind energy. Marine Directorate*. Available at: https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy/. Accessed on: 13 November 2025.

Scottish Government (2023). Framework to Evaluate Ornithological Compensatory Measures for Offshore Wind – Process Guidance Note for Developers. *Reference provided at request from Scottish Government.*

Scottish Government (2025a). Strategic compensation policy for offshore wind. Consultation report. https://www.gov.scot/publications/policy-document-strategic-compensation-consultation/documents/. Accessed on: 23 February 2026.

Scottish Government (2025b). *Scottish seabird conservation action plan*. Available at: https://www.gov.scot/publications/scottish-seabird-conservation-action-plan-2/documents/. Accessed on: 13 November 2025.

Scottish Natural Heritage (2018). *Birds flock back to mink-free Hebrides*. Available at: https://presscentre.nature.scot/news/birds-flock-back-to-mink-free-hebrides. Accessed on: 13 November 2025.

Skírnisson, K., and Petersen, A. (1980). The mink in Iceland. Villt spendyr Rit Landverndar, 7, 80-94.

Skirnisson K., Stefansson R.A., von Schmalensee M. (2004). Minkur. In: Islensk spendyr P. Hersteinsson (ed.). Vaka[1]Helgafell, 88–97.

Spatz, D. R., Jones, H. P., Bonnaud, E., Kappes, P., Holmes, N. D. and Guzmán, Y. B. (2022). Invasive species. In: Young, L. and VanderWerf, E. A. (eds.). Conservation of Marine Birds. 1st ed. Elsevier.

Stanbury, A., Thomas, S., Aegerter, J., Brown, A., Bullock, D., Eaton, M., Lock, L., Luxmoore, R., Roy, S., Whitaker, S., and Oppel, S. (2017). Prioritising islands in the United Kingdom and crown dependencies for the eradication of invasive alien vertebrates and rodent biosecurity. European Journal of Wildlife Research, 63, 31.

Sullivan, B.J., Kibel, B., Kibel, P., Yates, O., Potts, J.M., Ingham, B., Domingo, A., Gianuca, D., Jimenez, S., Lebepe, B., Maree, B.A., Neves, T., Peppes, F., Rasehlomi, T., Silva-Costa, A., and Wanless, R.M. (2018). At-sea trialling of the Hookpod: a 'one-stop' mitigation solution for seabird bycatch in pelagic longline fisheries. Animal Conservation 21, 159-167.

Swann, R.L., Aiton, D.G., Call, A., Foster, S., Graham, A., Graham, K. & Young, A. (2016). Canna seabird studies 2012-2014. JNCC Report No. 474i-k. JNCC, Peterborough.

Tapia-Harris, C. and Evans, T. (2024). Feasibility of strategic ornithological compensatory measures in the Scottish context. RSPB Science report to Scottish Government.

Thomas, S., Varnham, K., Brown, A., Stanbury, A., Bullock, D., Lock, L., Luxmoore, R., and Roy, S. (2017a). 'Island restoration in the UK – past present and future'. British Wildlife 28,: 231–242.

Thomas, S., Varnham, K., and Havery, S. (2017b). Current Recommended Procedures for UK (bait station) rodent eradication projects. (Version 4.0) Royal Society for the Protection of Birds, Sandy, Bedfordshire.

Thomas, S., Varnham, K., and Havery, S. (2017c) Current Recommended Procedures for UK (bait station) rodent eradication projects: Annex 1: Eradication techniques in the UK: Planning and implementing a ground-based bait station operation (Version 4.0). Royal Society for the Protection of Birds, Sandy, Bedfordshire.

Thomas, S., Varnham, K., and Havery, S. (2017d). Current Recommended Procedures for UK (bait station) rodent eradication projects: Annex 2: Rodent Trapping and DNA Sampling. (Version 4.0). Royal Society for the Protection of Birds, Sandy, Bedfordshire.

Wanless, S., Harris, M.P., and Murray, S. (2023). Northern Gannet *Morus bassanus*. In: Burnell, D., Perkins, A.J., Newton S.F., Bolton, M., Tierney, T.D. and Dunn T.E. (2023) Seabirds Count: a

census of breeding seabirds in Britain and Ireland (2015-2021). Lynx Nature Books, Barcelona.

Wiedenfeld, D.A. (2016). Seabird bycatch solutions for fishery sustainability. American Bird Conservancy.

Žydelis, R., Small, C., and French, G. (2013). The incidental catch of seabirds in gillnet fisheries: A global review. Biological Conservation, 162, 76–8.