Appendix 2: Compensation Plan

Derogation Case

2024

Revision	Comments	Author	Checker	Approver
Final	FINAL	NIRAS	NIRAS/RPS	NIRAS/RPS

Approval for Issue		
For and on behalf of Ossian OWFL	Rich Morris	28 June 2024

Prepared by:	**NIRAS**
Prepared for:	**Ossian Offshore Wind Farm Limited (OWFL)**
Checked by:	**Davy Still**
Accepted by:	**Fraser Malcolm**
Approved by:	**Rich Morris**

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1. INTRODUCTION

1.1. BACKGROUND

1. This document provides information on how each of the compensation measures proposed by Ossian Offshore Wind Farm Limited (Ossian OWFL) (hereafter referred to as "the Applicant") can be implemented and monitored if they are required by Scottish Ministers further to a derogation for the Array under the Habitats Regulations. This Compensation Plan relates specifically to the following qualifying species and potential impacts at the Special Protection Areas (SPAs) shown in Table 1.1.

Table 1.1: Summary of Species Covered in this Compensation Plan Plus Associated SPAs Where Adverse Effect Cannot be Excluded

Species	Relevant SPAs
Razorbill *Alca torda*	Fowlsheugh SPA
Black-legged kittiwake *Rissa tridactyla* (hereafter kittiwake)	Buchan Ness to Collieston Coast SPA, East Caithness Cliffs SPA, Flamborough and Filey Coast SPA, Forth Islands SPA, Fowlsheugh SPA, North Caithness Cliffs SPA, Troup, Pennan and Lion's Head SPA
Northern gannet *Morus bassanus* (hereafter gannet)	Flamborough and Filey Coast SPA, Forth Islands SPA

2. Scottish Ministers are responsible for granting consents and licenses required for the construction and operation of an offshore wind farm in Scottish waters, including Scottish territorial waters (0 nm to 12 nm) and the Scottish offshore region (12 nm to 200 nm). To ensure that offshore wind farm proposals are properly considered, developers must provide information that demonstrates compliance with relevant legislation and allows adequate understanding of the material considerations.

3. Consent is required for the construction and operation of an offshore wind farm project in the Scottish Offshore Region. This includes obtaining Marine Licences under the Marine and Coastal Access Act 2009. A Habitats Regulations Appraisal (HRA) is also a requirement under the Conservation of Offshore Marine Habitats and Species Regulations 2017, referred to as the "Habitats Regulations". If an offshore energy project, such as an offshore wind farm, requires Section 36 Consent and a Marine Licence, the Marine Directorate Licensing Operations Team (MD-LOT), on behalf of the Scottish Ministers, can process both consent applications jointly. The Applicant has provided information to support a HRA of the Array, specifically to support an Appropriate Assessment (AA) decision as documented in the Report to Inform an Appropriate Assessment (RIAA, Ossian OWFL, 2024).

4. The Report to Inform Appropriate Assessment (RIAA) provides information that enables an assessment of each Special Protected Area screened in for likely significant effects. The evidence presented within the RIAA concluded that the Array could have an Adverse Effect on Integrity (AEOI) for the qualifying seabird species of seven SPAs in combination with other plans or projects (as summarised within Table 1.1; Ossian OWFL, 2024). Therefore, the Applicant has provided a robust derogation case as part of the application for the Array. This document supports the compensation aspect of that derogation case, identifying the compensatory measures which could be delivered to secure the overall coherence of the National Site Network.

5. The proposed compensation measures for species listed within Table 1.1 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 identified to be adversely affected in the RIAA. The measures also have the flexibility to be scaled up (or down) to meet the specific compensation requirements determined by Scottish Ministers.

6. It is the Applicant's view that the information presented within this document provides Scottish Ministers with sufficient information to give Scottish Ministers adequate confidence in the measures proposed to allow for the approval of this Plan. The Applicant will also provide a refinement of the proposed compensation measures within the detailed Compensation Implementation and Monitoring Plan (CIMP), post consent. This document will present further detail on the delivery methodology for the compensation measures, including their flexibility and scale, which will be submitted to the Scottish Ministers to be approved in consultation with relevant key stakeholders. An outline of the CIMP (which details its proposed content in summary form) is presented in the appendix 3.

1.2. PREDICTED EFFECTS

7. This document relates to the potential collision and displacement mortality effect from the Array. The predicted AEOI of the Array on the relevant bird features of the SPAs (cited in full detail within the RIAA (Ossian OWFL, 2024)) is presented below with the recommended NatureScot ranges of low and high precaution included.

Table 1.2: Species, SPAs and Relevant Impacts from the Applicant's RIAA Where Adverse Effects on Site Integrity Cannot Be Ruled Out Based on the Lower and Higher Precautionary Assessment Rates

Species	SPA	Adult Annual Mortality (Low) (Number of Animals)	Adult Annual Mortality (High) (Number of Animals)
Razorbill	Fowlsheugh SPA	**4.8**	**28.4**
Black-legged kittiwake	Buchan Ness to Collieston Coast SPA	1.6	6.6
	East Caithness Cliffs SPA	1.0	4.2
	Flamborough and Filey Coast SPA	1.6	6.7
	Forth Islands SPA	0.5	2.0
	Fowlsheugh SPA	2.3	9.8
	North Caithness Cliffs SPA	0.1	0.4
	Troup, Pennan and Lion's Heads SPA	0.8	3.3
	Total	**7.9**	**33.0**
Northern gannet	Flamborough and Filey Coast SPA	2.0	4.4
	Forth Islands SPA	26.8	58.0
	Total	**28.8**	**62.4**

2. GUIDANCE

8. This document takes into consideration information from the following guidance:

- 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).

9. The EC (2018) guidance identifies that the following criteria should be considered when developing compensatory measures. These have been addressed through the subsequent sub-headings in this document:

- coordination and cooperation between Natura 2000 authorities, assessment authorities and the proponent of the plan or project;
- clear objectives and target values according to the site's conservation objectives;
- description of the compensatory measures, accompanied by a scientifically robust explanation of how they will effectively compensate for adverse effects and how they will ensure the overall coherence of Natura 2000 is protected;
- demonstration of the technical feasibility of the measures in relation to their objectives;
- demonstration of the legal and/or financial feasibility of the measures according to the timing required;
- analysis of suitable locations and acquisition of the rights to the land to be used;
- timeframe in which the compensation measures are expected to achieve their objectives;
- timetable for implementation of compensation and co-ordination with the schedule for the project implementation;
- public information and/or consultation stages;
- specific monitoring and reporting schedules; and
- financing programme.

10. Of particular note and relevance to seabird compensation specifically in Scotland is the Scottish Government's "Framework to Evaluate Ornithological Compensatory Measures for Offshore Wind – Process Guidance Note for Developers" (Scottish Government, 2023a) which is summarised within Table 2.1.

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

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 compensatory measures at the individual project level in accordance with the "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 compensatory 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 compensatory 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 compensatory measure package to assist the SNCBs and regulators in appraising the evidence supporting a derogation application.

11. While all of the guidance listed above is useful in informing compensation approach and has been referred to frequently while compiling the information within this document, the 'Compensatory Measures Advice Note' has been used as a guide in for this Compensation Plan to ensure the necessary components of the compensation package for the Array have been provided (Scottish Government, 2023a). These include:

- description of measure in view of conservation objectives;
- coherence of the network;
- best practice approaches and examples;
- summary of available evidence;
- technical feasibility;
- delivery/implementation of measure;
- key potential issues; and
- ecological monitoring.

2.1. CONSERVATION OBJECTIVES

12. The following Conservation Objectives (COs) apply to the SPAs and the individual species and/or assemblage of species for which each SPA has been classified. The objectives ensure that, subject to natural change, the integrity of the site is maintained or restored and that the site contributes to achieving the aims of the Birds Directive (as the Directive has been given effect in domestic legislation). An AEOI may affect one or more CO for a certain species and site. Here we identify the COs in order to ensure that the compensation measures address the specific impact on the site. Conservation Objectives for the relevant SPAs are presented in Table 2.2.

Table 2.2: Conservation Objectives

SPAs	Conservation Objectives
Buchan Ness to Collieston Coast SPA East Caithness Cliffs SPA Forth Islands SPA Fowlsheugh SPA North Caithness Cliffs SPA Troup, Pennan and Lion's Heads SPA	• to avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and • to ensure for the qualifying species that the following are maintained in the long term: • population of the species as a viable component of the site; • distribution of the species within [the] site; • distribution and extent of habitats supporting the species; • structure, function and supporting processes of habitats supporting the species; and • no significant disturbance of the species.
Flamborough and Filey Coast SPA	• ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring: – the extent and distribution of the habitats of the qualifying features; – the structure and function of the habitats of the qualifying features; – the supporting processes on which the habitats of the qualifying features rely; – the populations of each of the qualifying features; and – the distribution of qualifying features within the site.

13. It is important to note that all conservation objectives are 'subject to natural change', which 'recognises that there are European sites and their wildlife which will be influenced and modified by unforeseen or unpredictable natural forces, events or processes which cannot be effectively prevented, avoided or managed at an individual site-level' (Natural England, 2014). Natural change includes natural physical change, effects of climate change, changes in economic factors and changes in social factors (Natural England, 2014). Additionally, this also includes interactions between habitats and species and their responses to these changes. The compensatory measures proposed should also be understood in this context.

3. COMPENSATION MEASURES

3.1. PROPOSED COMPENSATION

14. The proposed Applicant led compensation measures for the species and SPAs listed within Table 1.1 are outlined in Table 3.1 and are presented in detail in sections 5 to 6. Note that razorbill will be compensated for through both of the proposed measures.

15. The Applicant has confidence that each of the measures on their own is robust and deliverable. The final package of measures will depend on the outcomes of the Scottish Ministers' Appropriate Assessment and will be defined in full within the detailed outline CIMP (appendix 3) in consultation with a post consent steering group which will be initiated by the Applicant and include key and relevant stakeholders relevant to each measure. Strategic or collaborative approaches to compensation are discussed in section 4.

Table 3.1: Summary of Proposed Project Led Compensation Measures for the Array

Compensation Measure	Description	Species of Relevance	Relevant Section of this Report
Mink Control in Scotland	Control of American mink *Neovision vision* (hereafter referred to as mink) at key locations in Scotland to reduce detrimental impacts associated with mink presence at seabird colonies including reduced productivity and adult survival. This measure would be led by the Applicant and delivered in conjunction with relevant organisations and partners.	Razorbill and kittiwake	Section 5
Seabird Bycatch Reduction in Portugal	Application of bycatch reduction techniques to reduce the level of gannet bycatch in relevant fisheries through the species foraging and/ or migratory range. Relevance to razorbill is being explored by supporting organisations. This measure would be led by the Applicant and delivered in conjunction with relevant organisations and partners.	Gannet and razorbill	Section 6

3.2. COMPENSATION MEASURES IDENTIFICATION

16. The identification of suitable compensation measures followed a stepwise process which utilised a range of sources to initially present a longlist of potential options before being refined into a shortlist of compensation measures. Measures on the shortlist were investigated thoroughly and discussed with stakeholders to determine their suitability within a suite of measures for relevant species, as required.

17. The longlist (which was shared with stakeholders during stakeholder meetings) draws on expert knowledge and experience held by NIRAS and existing information on compensation measures such as options from previous project proposals, published in grey literature and relevant guidance on compensation options. An overview of the sources used is presented within Table 3.2.

Table 3.2: Summary of Information Sources Used During the Longlisting Process

Source	Description
Published literature – Including but not limited to Furness et al. (2013), Furness (2021), JNCC (2020), Rouxel et al. (2021), Stanbury et al. (2017), etc.	Key information presented on drivers of population change and potential conservation actions which may be delivered as compensation.
Previous and current offshore wind farm proposals (including but not limited to: Berwick Bank, West of Orkney, Hornsea Four, Hornsea Three, Sheringham and Dudgeon Extensions, East Anglia projects, Norfolk Vanguard and Boreas)	A substantial amount of work has already been undertaken within the industry to try and identify suitable compensation measure for seabirds. These projects have been reviewed, with suitable measures added to the Array application longlist.
Seabird blogs (e.g. Royal Society for the Protection of Birds (RSPB) and newsletters (e.g. the Seabird Group)	Blog posts and newsletters share information from those on the front line of seabird conservation and can present opportunities for compensation (for example, delivering artificial nesting boxes for certain species).
Designated site information (primarily through the NatureScot and Natural England websites)	Review of known pressures, condition, management and site based literature for seabird SPAs.

Source	Description
Expert judgement	Knowledge from NIRAS' experienced ornithologists who have a history of developing and implementing compensation cases for offshore wind at both a project and strategic level.

18. The longlist provides a robust and thorough foundation from which to develop compensation measure options as part of the Applicant's compensation strategy. Once measures were identified on the longlist they were investigated to understand their suitability and alignment with relevant compensation guidance (Defra, 2021) and scored against compensation criteria i.e. preference hierarchy, location, technically feasible, timing, additionality and scale (Table 3.3). Those measures scoring above a score of 16 (based on expert judgement) formed the shortlist for more detailed discussion with stakeholders and investigation by the Applicant.

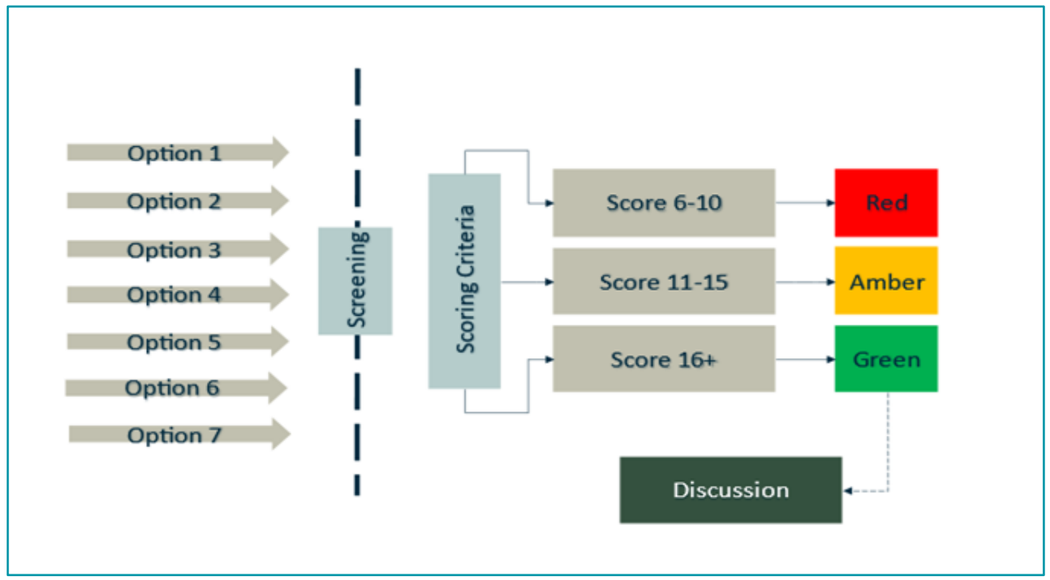

Figure 3.1: Screening Process for Compensation Measures

19. The longlist and approach were first presented during a compensation stakeholder derogation workshop held in August 2023. Feedback from NatureScot was considered, including an aspect on considering whether the measures can be monitored to determine success of the compensation and inform adaptive management.

20. The process applied by the Applicant has been adapted from the Defra guidance and has been applied on previous compensation projects in a United Kingdom (UK) context (Defra, 2021). Furthermore, the approach broadly aligns with the guidance on compensation provided by the Marine Directorate (Scottish Government, 2023a). This process has scored measures on current knowledge and available evidence.

21. The measures presented here aim to compensate like for like (i.e. where the compensatory measure is very similar in character and scale to the feature being compensated), as there is more certainty in the measures' delivery and effectiveness. The scoring criteria applied for like for like measures are presented in Table 3.3 with respect to species.

Table 3.3: Scoring Criteria Applied for Like for Like Longlist Compensation Measures

Criterion	Description	Score
Preference	Defra preference hierarchy	4 = Address the specific impact in the same location
		3 = Provide the same ecological function as the impacted feature; if necessary, in a different location
		2 = Comparable ecological function in the same location
		1 = Comparable ecological function in a different location
Location	Measures should be in a location where they will be most effective at maintaining the overall coherence of the National Site Network. Delivering compensation at the affected SPA, or other protected site, should be considered the most effective and will score higher.	4 = Option can be utilised by species from the protected site
		3 = Species within a protected site can be affected by the option
		2 = Species can be affected by option and species is within the UK portion of the biogeographic region
		1 = Option can be reached by species and is located within the wider biogeographic region
Technical Feasibility	Compensation options must be technically feasible to allow implementation. This criterion will be decided based on evidence of challenges to implementation, with options supported by evidence and with limited barriers to delivery gaining a higher score.	5 = Technical delivery of option is well evidenced, achievable without any substantial challenges and there is certainty in the outcomes
		4 = Technical delivery is evidenced but some challenges with delivery and some uncertainty in the outcomes
		3 = There is some evidence of delivery and some uncertainty regarding outcomes
		2 = Little to no evidence of delivery and considerable uncertainty in outcomes
		1 = No evidence of delivery and considerable uncertainty in outcomes
Timing	Compensation should be secured before the species is impacted. High scoring compensation options in this category will be those which can be in place, functioning and contributing to the coherence of the	4 = High degree of certainty compensation will be in place, functioning and contributing to the coherence of the National Site Network before impact

Criterion	Description	Score
	National Site Network before any impact occurs. Higher scores are also awarded to those with higher certainty associated with their timelines.	3 = Some certainty compensation will be in place, functioning and contributing to the coherence of the National Site Network before impact occurs
		2 = Low certainty compensation will be in place, functioning and contributing to the coherence of the National Site Network before impact occurs
		1 = Compensation will not be in place, functioning and contributing to the coherence of the National Site Network before impact occurs
Additionality	Compensation must be additional to the normal practices required for the protection and management of the Protected Site. Any measures that will already be undertaken by Government bodies to ensure that sites or species are in favourable condition should not be considered.	2 = Confidence that measure will exceed what is considered 'normal' site management
		1 = Unlikely that measure will exceed what is considered 'normal' site management
Scale	Compensatory measures should address the impact of the activity at a scale sufficient to deliver the required ratio of compensation	3 = Potential for high numbers of birds, eggs or nest sites to be provided per year (100s) from option
		2 = Potential for moderate numbers of birds, eggs or nest sites to be provided per year (10s) from option
		1 = Potential for low numbers of birds, eggs or nest sites to be provided per year (<10) from option

3.2.1. SHORTLISTED MEASURES

22. Table 3.4 presents a summary of the shortlisted project-level compensation measures that were not taken forward as final measures (presented within Table 3.1). These shortlisted measures were deemed, based on professional judgment and experience, to be not as feasible or effective as the final measures presented in this document. Although these measures are not being progressed by the Applicant as final measures at this stage, these shortlisted measures have been progressed to a point and are able to be drawn upon if requested by Scottish Ministers to form part of the compensation package if deemed necessary. At this time the most promising of those listed is Bycatch Reduction in Scotland because it has been developed to an advanced stage by the Applicant (see section 6.10). However, more time is required to establish and build productive relationships with the stakeholders required for its implementation. On this basis Applicant is reserving this measure as a priority adaptive management option (see section 6.10).

Table 3.4: Shortlisted Compensation Measure for Ornithological Features

Measure	Target Species	Summary
Rat eradication	Razorbill	The eradication of rats from island(s) in the UK to increase predator-free nesting locations and breeding productivity.
Colony invasive mammalian predator biosecurity	Razorbill	The implementation of biosecurity measures either to accompany successful eradications or at islands without a current invasive species population in order to reduce the likelihood of invasion by non-native predators.
SPA designation	Razorbill Kittiwake Gannet	The creation of a new SPA could compensate for impacts from the Array on a range of seabird species, by increasing the population(s) within the UK National Site Network, and by providing additional protective measures and conservation management for those populations.
Offshore artificial nesting structure (ANS)	Razorbill Kittiwake	The installation of an offshore structure suited to the nesting strategy of key seabird species. The structure aims to encourage seabird colonisation and high breeding productivity due to placement near food resources and away from mammalian predators.
Reduction in gannet harvest at Sula Sgeir	Gannet	The traditional licensed summer harvest of gannet at the Isle of Sula Sgeir in Scotland involves the removal of fully-grown gannet chicks known as "guga" for human consumption. This measure proposes pursuing a reduction in the gannet harvest quota.
Other disturbance reduction options	Razorbill Kittiwake Gannet	The reduction of human disturbance near breeding seabird populations can increase breeding success through decreased seabird stress, time away from the nest, and nest abandonment.
Bycatch reduction in Scotland	Razorbill Gannet	The reduction in seabird bycatch in Scottish waters. This measure has great potential but, at this stage it is being progressed as an adaptive management option to allow time to establish and build productive relationships with the stakeholders required for its implementation

3.3. STAKEHOLDER ENGAGEMENT

23. The Applicant has undertaken extensive consultation with relevant stakeholders (including MD-LOT, NatureScot and the RSPB) on the compensation measures for the Array. Table 3.5 outlines consultation calls, but further detail on this consultation is presented in the Compensation Stakeholder Consultation (appendix 2, annex A) which sets out how feedback was sought, provided and considered in the approach to compensation planning.

24. The Applicant has also worked in collaboration with the Portuguese Society for the Study of Birds (SPEA) and Scottish Invasive Species Initiative (SISI) to develop the measures below. Their support and endorsement of the compensation is highlighted throughout this document and via letter of intent or support provided by each group in Annex B and C.

25. Whilst this document provides information on the proposed approach to implementing and monitoring the compensation measures, further detailed plans specific to each compensatory measure will be produced

in the detailed CIMP in consultation with key stakeholders for approval by Scottish Ministers post consent. Further information regarding this is presented within the outline CIMP (appendix 3).

Table 3.5: Stakeholder Consultation Calls

Date	Agenda Topics	Attendees
10/08/2023	Derogation Workshop 1 • introductions; • Array project update; • key sites and species; • compensation approach for the Array; • discuss shortlisting process; • progress made by the Applicant to date; • planned deliverables; and • next steps.	• Ossian Consents Team; • RPS; • NIRAS; • MD-LOT; • NatureScot; and • RSPB.
28/09/2023	Derogation Workshop 2 • introductions; • aims of meeting; • progress to date; • suggested shortlisted measures and questions; and • next steps.	• Ossian Consents Team; • RPS; • NIRAS; • MD-LOT; • NatureScot; and • RSPB.
10/10/2023	• updates from NatureScot and regional call.	• Ossian Consents Team; and • NatureScot
14/12/2023	• introductions; • SISI project ambitions; • quantifying scale of impact; • timeline; and • securing.	• NIRAS; and • SISI.
15/12/2023	• introductions; • compensation overview; • SPEA bycatch trails; • funding; and • next steps.	• NIRAS; and • SPEA
07/02/2024	• introductions; • bycatch measure overview; • Portuguese government bycatch action; • SPEA presentation on bycatch work; and • key hotspots.	• Ossian Consents Team; • NIRAS; and • SPEA.
14/02/2024	• discussion around measure objectives; • quantifying scale of impact; • monitoring; and • securing.	• Ossian Consents Team; • NIRAS; and • SISI.
15/02/2024	• Derogation Workshop 3 • overview of compensation approaches, including predator control and eradication (Scottish mink control and rats), seabird bycatch, offshore artificial nesting structures (ANS), and habitat enhancement; • update on deliverables; and • compensation plan structure.	• Ossian Consents Team; • NatureScot; • MD-LOT; • RPS; and • NIRAS.
08/04/2024	• discussion on briefing note; • scale of impact; • monitoring and metrics; • costs; and • regional compensation.	• NIRAS; and • SISI.
18/04/2024	• Derogation Workshop 4 • introductions; • detailed descriptions of the two measures being taken forward (evidence, scale, location, monitoring, securing).	• Ossian Consents Team; • NatureScot; • MD-LOT; • RPS; and • NIRAS.
23/05/2024	• Derogation Workshop 5 • introductions; • feedback and questions on the Compensation Plan from MD-LOT and NatureScot; • update from NIRAS on Compensation Plan feedback and revisions; and • post-submission plan outlined.	• Ossian Consents Team; • NatureScot; • MD-LOT; • MD-SEDD; • RPS; and • NIRAS.

3.4. DETERMINING THE COMPENSATION POPULATION

26. The scale of each compensation measure relates to the required number of birds needed to offset the AEOI arising from the Array. Scale is therefore a vital aspect in the planning of compensation as it informs the design, cost, monitoring and adaptive management, and can determine site selection of compensatory measures.

27. Compensation in respect of the mortality risk to seabirds as a result of offshore wind farm impacts is still in its relative infancy when compared to port developments or other similar projects requiring derogation. The current lack of developed and functioning compensatory measures for seabirds, in particular razorbill, kittiwake and gannet (noting the implementation of a number of kittiwake artificial nesting towers for kittiwake in English waters during 2022), means that suitable compensation measures are still being

developed. This process includes determining the appropriate scale of compensation for a given measure. As more offshore wind projects and associated compensation proposals are consented, the amount of evidence to support decision making will increase via detailed monitoring procedures stipulated for each project within the Development Consent Orders (DCO) or consent under Section 36 Electricity Act 1989.

28. Despite the lack of tangible compensation projects to date, a wealth of relevant evidence is available and has been captured within recent offshore wind farm planning applications (with evidence highlighted within the Ecological Evidence Report (appendix 1) and in the following sections relevant to each specific compensation measure).

29. Determining the scale of compensation requires a stepwise approach, as outlined in Figure 3.2. Step 1 (calculate the project level impact) is presented within the RIAA (Ossian OWFL, 2024) and summarised within Table 1.2. Step 2 (determine the population which must be delivered to compensate the impact) is discussed within each individual compensation measure section, and Step 3 (application of compensation ratio) is discussed in section 3.5.

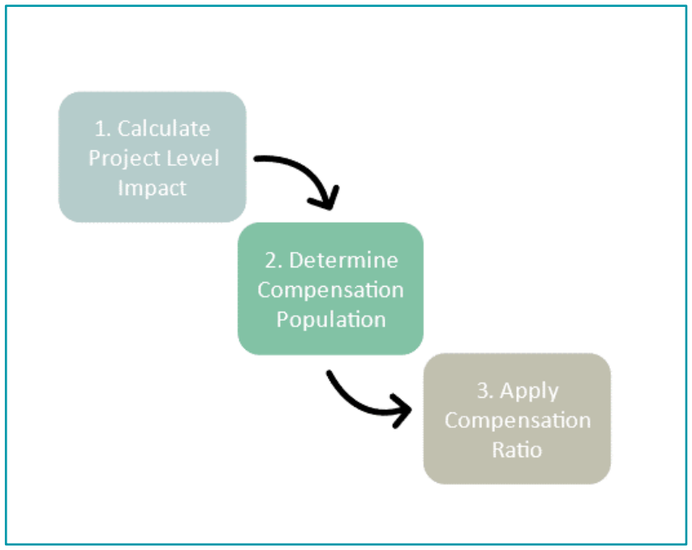

Figure 3.2: Simplified Schematic Showing the Stages of Determining the Scale of Compensation

3.5. COMPENSATION RATIO

30. A compensation ratio is typically applied to ensure that the compensatory measures fully offset the predicted impact on a site/feature. Ratios close to 1:1 are appropriate in circumstances where the compensatory measure is very similar in character and scale to the feature being compensated (i.e. it is 'like for like'). Where the measure is non 'like for like' and/or there is uncertainty about its delivery, then higher ratios may be applied. In determining an appropriate ratio it is also important to consider approaches found to be accepted in other similar cases, and it also needs to be proportionate to the effects predicted.

31. Furthermore it is important to consider how the precautionary approach to the RIAA (Ossian OWFL, 2024) already fosters a high level of precaution within its approach. Whilst the application of the precautionary principle is a requirement given the inherent uncertainties associated with impact predictions of offshore windfarms, it allows decision makers to make a reasonable assessment of risk while aligning with the best available evidence. If the precautionary principle is excessively applied to impact assessments there is a risk that what should be robust decision making could be distorted by assessment outputs which are unrealistic. This concept will be considered when determining appropriate ratios to apply to the compensation measures.

32. Based on the information provided in the following sections with regard to the potential implementation of compensation measures as part of a compensation package for the Array, a ratio above 1:1 is proposed for the purposes of informing planning at this stage. Following the refinement and agreement of final locations, and design and scale etc., of each measure, the ratio may be defined and agreed with the key stakeholders and outlined within the detailed CIMP. Where information is available to provide further context in relation to ratios, further detail will be provided in the relevant section.

4. REGIONAL AND STRATEGIC COMPENSATION MEASURES

33. There are a number of stakeholder groups operating in the UK that are currently working to deliver regional and strategic compensation measures and funding schemes for offshore wind farms (and other renewables) projects in the UK. This work has the potential to deliver greater ecological value than individual project-level compensation packages through the combined and targeted efforts of a large-scale programme.

34. The Applicant is collaborating in the ScotWind developer-led North-East and East Offshore Wind group which aims to identify compensatory measures for offshore windfarms developing in the East and North East ScotWind Plan Option Areas. A number of compensatory measures that could be delivered at a regional level have been identified and are detailed in a report that was published in May 2024 and circulated to Scottish Government and stakeholders (Royal Haskoning and HiDef, 2024). However, due to the timelines for the submission of the Array application, the Applicant is unable to rely on the regional compensation measures at this stage and has instead focused on developing project level compensation measures alongside participating in this regional work.

35. The Applicant also participates in a range of other forums that progress development of strategic compensatory measures and the mechanisms for their delivery (e.g. Marine Recovery Fund) at a national level. One route to strategic compensation that has enormous potential at a national level is the recent closures to sandeel fisheries in Scottish and English waters. As evidenced by the Berwick Bank application, there is strong evidence that the closures will bring significant ecological benefits to a broad range of seabird species (SSE Renewables, 2022a; SSE Renewables 2022b). The Applicant supports the position that the closures should be approved by the UK and Scottish Governments as a suitable strategic compensatory measure that offshore wind projects can secure and discharge as part of their consenting process.

36. The Applicant is committed to staying involved and abreast of both regional and strategic compensation development to understand potential delivery options, and whether they be used by projects alongside, alternatively or adaptively to project level compensation, including to the compensatory measures outlined in this report. This work will be presented in the detailed CIMP post consent in discussion with relevant stakeholders, if relevant and appropriate at the relevant time.

5. MINK CONTROL IN SCOTLAND

5.1. INTRODUCTION

37. Seabirds have a number of natural predators distributed across their range. Natural predators generally pose a low risk to breeding seabirds as they have co-evolved with predation pressure and have mechanisms or behaviours to withstand it. Seabirds primarily use avoidance to counter such predation. This is why they often select nesting areas like cliffs, offshore islands, or secluded boulder fields or beaches where the threat of predators is minimal or non-existent (Furness and Birkhead, 1984). When mammals, which would not typically be present without human intervention, are introduced into these habitats, the consequences for bird populations globally can be severe (e.g. Courchamp *et al.*, 2003; Jones *et al.*, 2008; Towns *et al.,* 2011).

38. Invasive mammalian species influence colonies by (depending on the species) predating eggs, chicks and adults, changing the distribution of breeding colonies and changing nesting habitat. There are many species that have been introduced into sensitive island and mainland ecosystems within the UK and the Channel Islands, with a number of offshore islands around the UK and the Channel Islands having established populations of invasive mammals, originating from mainland Britain (e.g., escapees from fur farms) or from further afield (e.g. through stowaways or shipwrecks) (Thomas *et al.,* 2017; Stanbury *et al.,* 2017).

39. The American mink *Neovison vison (*hereafter referred to as “mink”) is a non-native species established across much of the UK and Ireland. In the past century, the fur farming industry has caused mink to artificially spread from its native range in North America, across the globe. Mink are now prevalent in 28 countries across Europe, Asia, and South America, making them one of the most widely distributed and destructive invasive species in the world (Bonesi and Palazon, 2007; Fasola *et al.,* 2021).

40. As a result of the substantial impacts associated with the introduction of mink and native Scottish wildlife (summarised within section 5.2, and with further detail provided within the Ecological Evidence Report (appendix 1), mink have been controlled by various mechanisms in Scotland.

41. The concept of this compensation measure is to continue, enhance and intensify the current Scottish Mink Control Project (MCP) in partnership with SISI which is managed by NatureScot. The MCP operates across large areas of Scotland, protecting native Scottish wildlife, including razorbill and kittiwake and other seabirds, from mink. The Applicant would provide funding to facilitate continuation of the MCP once current funding stops in 2026, which would maintain and enhance control of mink to prevent the recolonisation of mink at seabird breeding colonies (where predation is documented) in northeast Scotland. Furthermore, the Applicant also intends to provide resources to increase and intensify the coverage of the control project across other areas of Scotland not currently covered by the MCP, which are important for razorbill and kittiwake.

42. The following sections of this document detail how the measure would be implemented, along with information on scale, location, design, monitoring and adaptive management. NIRAS has worked in consultation with the SISI project and Professor Xavier Lambin who is a leading mink expert and the academic advisor to the project, and NatureScot, to develop this compensation measure for the Applicant. Furthermore, a letter of intent between the Applicant and SISI (which is project managed by NatureScot) is an annex to this report (annex B).

5.2. SUMMARY OF EVIDENCE

43. Detailed evidence in relation to this measure is presented within the Ecological Evidence Report (appendix 1). A summary of key evidence of mink impacts and successes from control projects are presented in sections 5.2.1 and 5.2.3.

5.2.1. IMPACT OF MINK

44. Mink have been documented as a serious threat to seabird colonies in every part of their invasive range (Spatz *et al.,* 2023; López *et al.*, 2023; Bonesi and Palazon, 2007; Hipfner *et al.,* 2010). The Scott Islands in British Colombia has historically supported the largest population of breeding seabirds in the eastern Pacific Ocean, south of Alaska (Hipfner *et al.,* 2010). Fur farmers introduced mink to the islands in the 1930’s, and they have since had unprecedented negative impacts on seabird populations. Mink removal has been considered a primary conservation priority (Hipfner *et al.,* 2010). Similarly, a study in the Cape Horn Biosphere Reserve in Chile showed seabirds’ susceptibility to mink predation, particularly on nests on shores with rocky outcroppings and on highly concealed nests (Schüttler *et al.,* 2009).

45. In Iceland, mink colonised islands over 10 km from the coast by ‘island hopping’, and have had an adverse impact on Icelandic seabird populations, particularly Atlantic puffin *Fratercula arctica* (hereafter puffin), black guillemot *Cepphus grille* and guillemot, with 200 guillemot chicks found in a single mink den in one example (T. Björnsson *pers. comm* in Clode and Macdonald, 2002). (Björnsson and Hernsteinsson, 1991; Johannesson and Gudjonsdotti, 2007; Stefansson *et al.,* 2016). Mink are also the reason for the decline of the only two remaining puffin colonies in France, at Ouessant and Baie de Morlaix (Harris and Wanless, 2011).

46. Mink have spread widely throughout Europe since their introduction in the 1920s (Macdonald and Harrington, 2003). Mink that escaped from fur farms began spreading through the Western Isles of Scotland in the 1950’s (Boyd and Boyd, 1990). The prevalence of mink across Scotland, particularly along the coasts, has been a reason behind a complete or near-complete loss of breeding seabirds from many Scottish archipelagos, sea lochs, firths and sounds (Craik, 1997; Fraser *et al.,* 2015). They have contributed to 34 whole colony extinctions of terns, gulls, storm petrels *Hydrobates* spp., Manx shearwater *Puffinus puffinus* and puffin (Mitchell and Daunt, 2010).

47. Mink distributions in the Western Isles of Scotland were highly correlated to that of seabird colonies, and in areas of high mink presence breeding success is lower or in many cases fails altogether (Clode and Macdonald, 2002; Craik, 1995). Between 1989 and 1995, they led to extensive breeding failures that eventually led to whole colony failures among black-headed gulls *Chroicocephalus ridibundus*, common gulls *Larus canus*, and common terns *Sterna hirundo* in colonies on small islands along a 1,000 km stretch of mainland coast in west Scotland (Craik, 1997).

48. Mink are agile, single-prey loading, central place foragers which means they collect single prey items during each foraging bout and carry them back to a cache to store resources, particularly while prey is abundant (Houston and McNamara, 1985). This often leads to high levels of predation once a prey source has been established and has been documented as a cause of considerable population impact on multiple seabird species (i.e. Mitchell *et al.*, 2004 and Craik, 1997). This is especially relevant to kittiwake, which are often able to avoid mammalian predation due to their nesting habits, but have been documented as being particularly vulnerable to mink predation on the Scottish east coast where both kittiwake and mink ranges overlap (Furness *et al.*, 2013). Mink are excellent swimmers and climbers, able to access nesting locations along sheer cliffs to access nesting seabirds (see Ecological Evidence Report (appendix 1) for examples and images). For example, Furness *et al.*, (2013) notes two counts of mink predation at British kittiwake colonies, one of which was at St. Abbs head where the individual mink predated half of the kittiwake colony during one breeding season. Additionally, fully grown kittiwake chicks at Troup Head in north-east Scotland (part of the Troup, Pennan and Lion’s Head SPA) were predated by mink, with a dozen partially eaten carcasses reported to be floating in the waters below the colony (X. Lambin, 2024 *pers. comm*).

49. Furthermore, the authors of the Seabird Populations of Britain and Ireland (JNCC) (Mitchell *et al.,* 2004) suggest it is likely to be more than just a coincidence that razorbill (and black guillemot *Cepphus grylle*) have undergone large scale population declines where their nesting habitat coincides with mink present along the north-west mainland coast of Scotland (from Lochaber to north Caithness) whereas during the same time period, guillemots (which nest in less accessible habitat and are therefore less vulnerable) have increased. Further examples are described in section 5.2.3 and within the Ecological Evidence Report

(appendix 1) providing clear evidence that when the breeding habitat of seabirds, and particularly razorbill or kittiwake, is within the territory of mink there is likely to be considerable population level impacts.

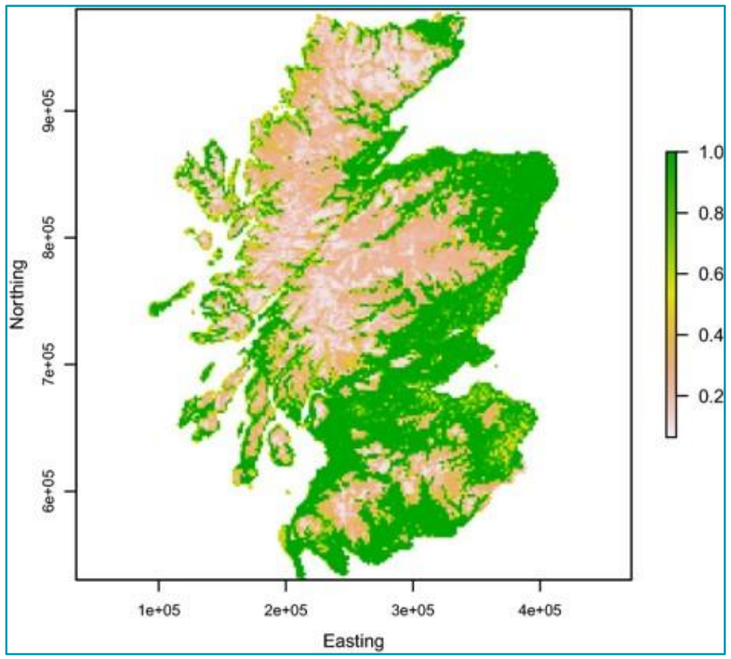

Figure 5.1: Model Predictions for Probability of Occurrence of Mink in Scotland. Green Cells Indicate a Very High Probability of Mink Occurrence, White Cells Indicate an Extremely Low Probability of Mink Occurrence. Figure Taken from Fraser et al. (2015)

5.2.2. MINK DISPERSAL AND COLONY ACCESS

50. Numerous studies observe a vastly greater-than-expected innate dispersal ability for mink when compared to similarly-sized carnivorous mammals (Melero *et al.*, 2018; Fraser *et al.*, 2015). In one study, 77% of mink dispersed and settled into non-natal patches, with 20% of mink dispersing > 80km from their natal patch (Melero *et al.*, 2018). Furthermore, landscape heterogeneity and a lack of traversable waterways is not a barrier to mink dispersal; in one study, 32% of recaptured mink were caught in different river catchments from their natal patch, implying overland dispersal independent of waterways (Oliver *et al.*, 2016). The highly mobile nature of mink and the predicted probability of mink occurrence in Scotland (Figure 5.1) based on habitat suitability modelling and innate dispersal ability therefore imply a substantial threat to seabird colonies outside of the range of current SISI coverage in the absence of programme continuation.

51. Notwithstanding the difficulty of predicting mink incursion due to the confounding influence of current control programmes (Lieury *et al.*, 2015; Oliver *et al.*, 2016), multiple studies using sophisticated population modelling note that the long-range dispersal ability of mink requires a large spatial scale for effective control and a buffer exclusion area of at least 30 km based on average dispersal distances (31 km for females and 38 km for males), which range from 4 to 100 km (Oliver *et al.*, 2016). Furthermore, even with such an exclusion area, study authors note that there would be a requirement for ongoing vigilance as a small proportion of mink disperse much further than these distances, and even low numbers of mink can cause substantial seabird mortality at seabird colonies (Oliver *et al.*, 2016).

52. In geographical terms, mink dispersal and subsequent incursion risk cannot reliably be predicted by habitat suitability or quality. This is evident particularly in coastal areas where incursion has not decelerated despite decreasing availability of suitable habitat (Fraser *et al.,* 2015). Available observation data for Scotland repeatedly reports a preference of mink for coastal habitats, independent of landscape heterogeneity and habitat quality (Fraser *et al.,* 2015). This suggests that mink will actively colonise areas of suboptimal habitat suitability where intraspecific competition is reduced. Again, this highlights a credible risk of mink incursion to seabird colonies where mink have not yet been reported.

53. There is evidence to suggest that mink originating from inland areas preferentially disperse to coastal habitats. Stable Isotope and scat analysis studies in Iceland (Magnusdottir *et al*., 2013), the Outer Hebrides (Helyar, 2005; Bodey *et al*., 2010), Argentinean Patagonia (Previtali *et al*., 1998) and Spain (Delibes *et al*., 2004) have demonstrated that the diet of coastal living mink is dominated by marine-based prey. In one Scottish study investigating how stable isotope signatures change at the population level of mink over time in response to an eradication programme, isotope profiles signifying marine prey became increasingly dominant as the programme progressed. This suggests that inland mink increased their reliance on marine food resources and focused their predatory activity on the coastline (Bodey *et al*., 2010). Furthermore, a radio-tracking study of mink in coastal habitat reported that mink occur at higher densities and occupy smaller territories in coastal areas compared to inland regions (Helyar, 2005). This is likely due to the increased abundance of food sources in coastal habitats, such as cliff-nesting seabird colonies (which are highly calorific), where species such as razorbill and kittiwake can nest in high densities.

54. Based on the innate dispersal ability of mink, the flexibility they exhibit in their feeding ecology with preference for coastal habitats and previous observations of mink predating kittiwake and other seabirds within Troup Head (X. Lambin, 2024 *pers. comm*), it is highly probable that all sections of cliff-nesting seabird colonies within SPAs are vulnerable to mink predation following incursion. Many of the sites within Fowlsheugh SPA and North Caithness Cliffs SPA (for example) that host cliff-nesting seabird colonies contain sections of down-sloping, grassy patches leading from cliff tops into lower sections of the cliff face Figure 5.2. These access points could feasibly permit incursion from land-based mink directly into seabird colonies.

Figure 5.2: Images of Cliff Tops Above Seabird Colonies at Fowlsheugh SPA and Duncansby Head at North Caithness Cliffs SPA. Top Left: Cliff Lop and Seabird Colony at Fowlsheugh SPA with Two People Standing Close to Seabirds at Cliff Edge (Expedia, n.d.). Top Right: Cliff Top at Fowlsheugh SPA Showing Down-Sloping Grassy Patches to Cliffs (Rachel M., 2024). Bottom Left: Seabird Colony at Duncansby Head with Clear Down-Sloping Grassy Sections into Colony in Top Right of Image (Lovick, 2024). Bottom Right: Seabirds at Fowlsheugh SPA Including Razorbills Nesting in Grassy Sections of Colony (Vergunst, 2022)

55. However, even under the scenario in which mink cannot access certain areas of a cliff-nesting seabird colony, there are likely to be indirect effects resulting from the areas that mink can access that negatively impact reproductive success of all species within the colony. A study investigating the response of shags to mink predation at nest sites demonstrated that individuals would change nesting locations to sites of lower quality to avoid predation at a cost to reproductive success (Barros *et al*., 2016). This shift in nest-site selection in response to mink predation has also been observed in razorbills (Nordström and Korpimäki, 2004). This may have population-level consequences that negatively impact colony size, as nest-sites at lower risk of mink predation can result in increased density-dependent competition for resources and greater risk from avian predators (Forero *et al*., 1986; Hunt *et al*., 1986).

5.2.3. CONTROL SUCCESS

56. A global review of mink control strategies found 51 studies on mink control that have been carried out in 28 locations in Europe and South America since 1992 (López *et al.,* 2023). Trapping experiments in Patagonia have been effective in removing at least 70% of the mink population using the latest trapping techniques (Bonesi and Palazon, 2007). Additionally, a mink control programme in the Baltic Sea removed the species from several small islands and found significant increases in the breeding densities of seabirds. Razorbill and guillemot were both extinct from the islands, but recolonised following the mink eradication (Nordström *et al.,* 2003). Despite the presence of invasive mink in 28 European countries, several local control projects appear to be effective in reducing invasive populations and protecting native biodiversity (Bonesi and Palazon, 2007).

57. Control efforts in Scotland have been successful in reducing mink populations through successive joint projects despite short-term funding (Lambin *et al.*, 2019). A notable example is the 'Hebridean Mink Project'. Initiated in 2001, the project aimed to reduce the mortality rate of ground-nesting birds in the Outer Hebrides, which was considerably impacted by mink (NatureScot, 2023). Over the course of the Hebridean Mink Project, a total of 2,198 individual mink were successfully captured. Following the completion of the trapping campaign, monitoring efforts have continued. These efforts have recorded the presence of mink at substantially reduced levels, indicating the success and effectiveness of the control measures implemented. Other programmes include the Scottish Mink Initiative which focused on removing mink from north Scotland between 2011 and 2015 (MacLeod, 2023; McMullen, 2015). Currently, the control of mink in the north of Scotland is managed through NatureScot via SISI and the MCP.

58. The longest gap between control efforts in Scotland was the transition between the Scottish Mink Initiative and SISI MCP. During this period data showed a temporary recovery of mink populations (see section 5.3).

59. The SISI MCP has had considerable success in reducing the overlap in mink and breeding seabirds. In 2018, the MCP superseded the Mink control Initiative and initiated a strategic shift towards targeting bird cliffs from Aberdeen to Spey Bay, resulting in the capture of approximately 30 mink (X. Lambin, 2024 *pers. comm*).

60. The MCP run by SISI is the largest active project, and between 2018 and 2023 caught 673 mink in 305 different locations (Figure 5.3). The project found that just 78 trapping locations accounted for 75% of total captures between 2018 and 2021 (Invasive Species Scotland, 2024). Note that Figure 5.3 does not include any metric of mink control effort, which has been inconsistent due to control being done through a network of volunteers, recruited by a small number of staff to act locally. This highlights the benefit of long term support in preventing short term mink bounce back and recovery that could lead to catastrophic seabird predation and mortality, especially if a more substantial and targeted volunteer network were to be established.

61. The following sections provide detail on how a compensation measure can be implemented to support the success reported by mink control schemes in Scotland.

5.3. OBJECTIVES

62. Funding of the MCP is due to end in 2026 and no replacement funding has been secured. Additionally, the existing MCP is limited spatially due to the restrictions associated with funding. The Applicant would therefore secure long-term funding for the MCP as well as for increasing overall capacity of the project to allow the control of mink to be carried out to a greater intensity and extent. Delivery of mink control aims to limit mink dispersal as much as possible. The MCP works along a catchment basis to reduce the supply of propagules/dispersers by seeking to remove breeding females wherever they are known to have bred in the past (these are high quality territories that will be recurrently recolonised).

63. A letter of intent has been signed between the Applicant and the Head of Geodiversity and Biodiversity at NatureScot who is the Senior Responsible Owner for SISI, confirming the intention of the SISI project to work with the Applicant to deliver and extend mink control beyond 2026. The signed letter is annexed in (annex B). While mink control is the compensation measure proposed as compensation by the Applicant and addressed in the suite of Compensation documents, the Applicant has also agreed to support the SISI project in its entirety, which encompasses invasive plant control measures. This is presented within the letter of intent.

64. By working in partnership with the MCP, the Applicant not only ensures the future security of an established successful measure (and continued protection of key razorbill and kittiwake colonies from mink recolonisation and subsequent predation) without which the MCP would not have funding to continue, but also ensures intensity of the project so that other colonies within the UK National Site Network are safeguarded.

65. To ensure the compensation measure meets the requirements of compensation guidelines, an approach has been outlined with two core elements which form the overall strategy: secure, intensify, extend. This strategy will both reduce the risk of predation events in Scottish seabird colonies, and remove predation effects on razorbill and kittiwake at other colonies.

66. The key objectives are:

A. To fund the MCP once existing funding ends in order to ensure the continued existence of the existing SISI Mink Control Project, and to intensify the control within areas that are covered by the MCP at present (section 5.3.1); and
B. To increase the coverage of the SISI Mink Control Project to areas not covered by the MCP at present (see section 5.3.2).

67. Mink will be the target of the compensatory control programme and implementation will be undertaken in partnership with the SISI MCP to ensure continuation of the success achieved by that project to date. It is proposed that the Applicant will provide funding to achieve Objectives A and B at specified locations (section 5.4) and resources for the hiring of Mink Wardens to facilitate Objectives A and B. The complete eradication of mink from Scotland is not considered feasible at present by SISI and therefore control will be the focus of the measure (Martin and Lea, 2020).

68. Investment into the MCP would be expected to be supported by the volunteer model currently utilised. Funding can be used for equipment and Mink Wardens to oversee and direct the project in the current (Objective A) and new control areas (Objective B). The duties of the Mink Wardens will be discussed and agreed in partnership with the SISI MCP, to be approved by Scottish Ministers in consultation with key stakeholders, and will focus on those requirements which relate to meeting the relevant site conservation objectives and to maintaining the overall coherence of the national site network (see section 2.1).

69. Professor Xavier Lambin (who has worked with the Applicant's representative, NIRAS, to develop this compensation measure) has indicated a research project he is pursuing, through his position at the University of Aberdeen, that aims to determine the relationship between mink control effort and mink captures. The project uses data spanning the gradual expansion of mink control efforts (2006-2024), including funding gaps between projects when mink numbers rebounded. This research could provide further supporting evidence for what mink incursions would look like if the MCP were to finish at the conclusion of the current funding period in 2026. Additionally, this data could provide support to Objective B by illustrating changes in female mink captures on bird cliffs due to the expansion of the previous control programme, the Scottish Mink Initiative, to the current control programme, SISI's MCP. The Applicant intends to continue to refine its approach based on the findings of this research.

70. The Applicant will commit to fund SISI and the MCP for at least the lifetime of the Array (35 years), along with monitoring (section 5.7) and adaptive management considerations (section 7).

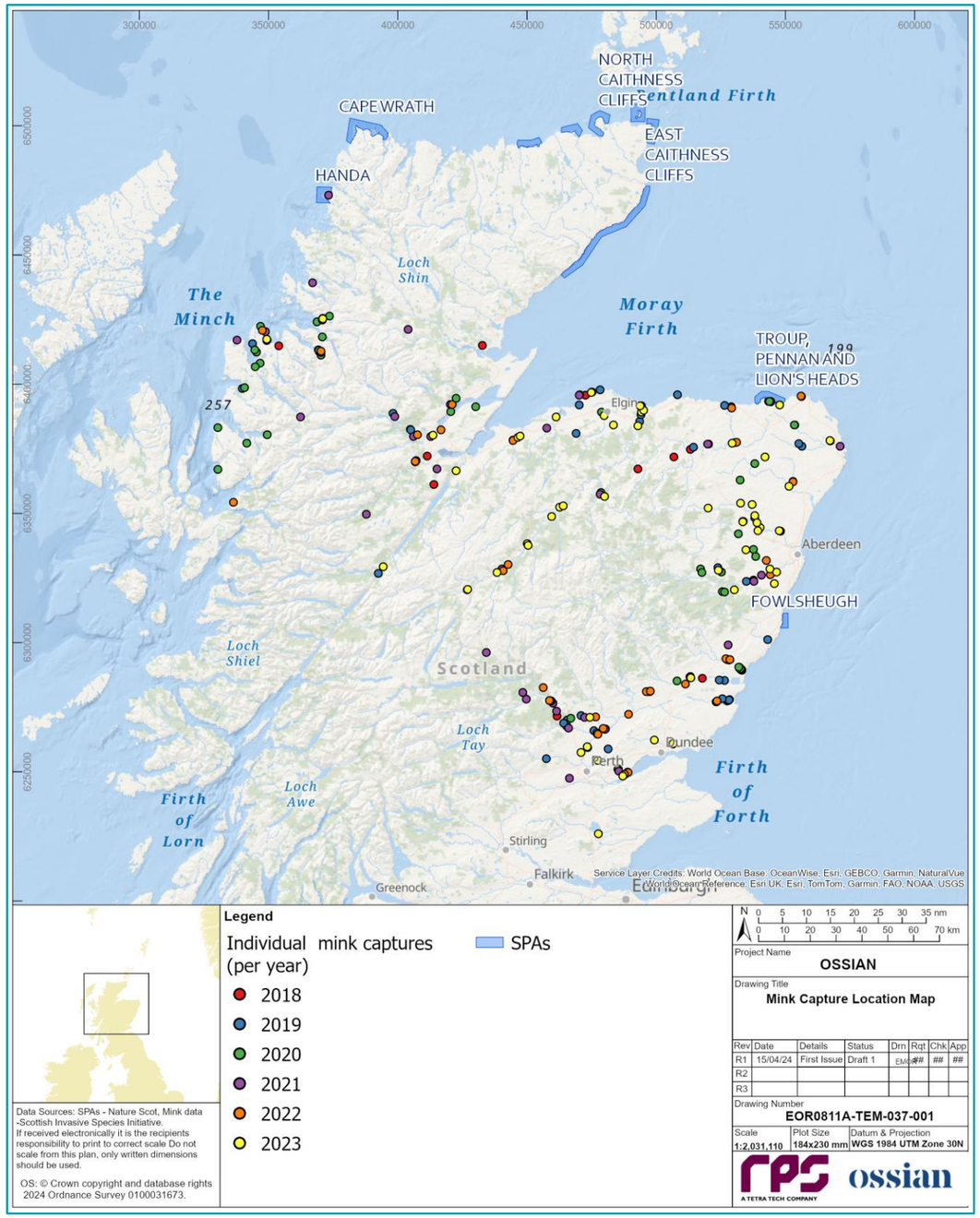

Figure 5.3: Locations of 673 Mink Captures Between 2018 and 2023. SPAs are Included. Data from SISI MCP

5.3.1. OBJECTIVE A – CONTINUATION AND INTENSIFICATION OF THE SISI MINK CONTROL PROJECT

71. Presently, the SISI MCP consists of around 350 volunteers who manage 650 mink rafts and traps across 43 river catchments along the northern area of Scotland, covering around 23,000 km2. The current control area covers the coastline from the Tay estuary at Perth to Golspie (Invasive Species Scotland, 2024).

72. Mink are highly adaptable and mobile, able to access remote and hard to reach locations such as those where seabirds nest along mainland colonies in Scotland. Furthermore, mink are extremely proficient swimmers, able to swim to offshore islands 2 km away and have been found to 'island hop' to islands more than 10 km away from the mainland (Björnsson and Hernsteinsson, 1991). Mink can disperse across long distances from breeding locations. A study conducted in north-east Scotland showed that on average mink can disperse 20 km over land, with the maximum recorded distance being 100 km (Melero *et al.,* 2018). Of those individuals included within the study, 20% of the mink studied had an overland dispersal distance exceeding 80 km (Melero *et al.*, 2018).

73. Mink are also highly reproductive, with those that disperse having the capability to breed when they are just a year old (Dunstone, 1993). Female mink typically give birth to a litter of three to six kits each year, though larger litters of 10 and 12 kits have been recorded (Melero *et al.,* 2015). Both the distance the species can disperse across and rate of reproduction means that any lapse in the current control could result in large scale and rapid recolonisation. Therefore, the species has the potential to expand rapidly if not controlled.

74. Presently, where control effort has been concentrated there has been a reduction in mink populations to a level that has likely substantially diminished the ecological impact of mink. The absence of control, however, would lead to mink colonisation and large seabird mortality. While it is recognised that mink are too mobile to achieve complete eradication, control efforts prevent establishment within seabird breeding territories.

75. Objective A will secure funding from 2026 to ensure the existence of the MCP once current funding expires. Objective A will see the control of mink populations at certain locations which have historically been covered by the MCP. The support provided by the Applicant will accomplish this objective by enabling the continuation of existing MCP monitoring and control processes through the provision of funding once existing funding expires in 2026.

76. Conversations with the SISI Mink Control Project Manager, and Professor Xavier Lambin (mink expert and academic advisor to the MCP), indicate that the project is currently a predominately citizen science, volunteer endeavour. This model has been successful in maintaining a certain amount of control that is sufficient to reduce ecological impact of mink, but the project is limited by the time and effort that can be given by volunteers as well as where volunteers reside.

77. Objective A will additionally aim to increase the intensity of control in areas where there is existing coverage. The support provided by the Applicant will accomplish this objective by allocating additional resources per unit area to SISI for investment in increased effort of monitoring and trapping. This objective will look to standardise monitoring based on metric of effort per unit area, which has historically been variable.

78. Within the area presently covered by the MCP, the priorities identified by MCP as going forward for investment and engagement will include the following (in decreasing importance):

- East coast SPAs, closest to the site of impact;
- East coast bird cliffs, close to the site of impact;
- East coast coastline, close to the site of impact;
- East coast lowland area with highest mink productivity where most mink potentially recolonising cliffs and hitting seabirds are produced;
- Upper reaches of east coast catchments where fewer but some mink potentially recolonising cliffs and hitting seabirds are produced;
- Multiple east coast catchments because mink are extremely mobile and move between catchments;
- West coast cliffs and isles and skerries; and
- West catchments.

79. This will be the general model that will be taken forward for efforts towards Objective B as well.

5.3.2. OBJECTIVE B – INCREASING CONTROL COVERAGE TO 'NEW' LOCATIONS

80. Recent records suggest that the range of mink now covers most of Scotland except the far north (Invasive Species Scotland, 2024). Based on information acquired during discussions with the SISI Project Manager and Professor Xavier Lambin, mink are controlled from moving into northern Scotland in high numbers by trapping behind an invasion front which extends roughly between Dornoch and Scourie (Figure 5.3).

81. Despite control behind the front, isolated individuals have been recorded north of the control area. As noted above, mink dispersal can span up to 100 km, and therefore the potential for mink colonisation at important seabird colonies (such as East Caithness Cliffs SPA, North Caithness Cliffs SPA, Cape Wrath SPA and Handa SPA), and associated consequences is a genuine threat to breeding seabirds.

82. According to the expert consultation undertaken by the Applicant, mink have been confirmed to be within 5 km of Handa SPA. Additionally, the entirety of Fife is likely to be highly productive for mink, similar to Buchan plain. Control covering the whole area is needed to deplete the supply of re-colonists and protect the coastline, which are favoured mink territories and are likely to be highly attractive to recolonising female mink (Melero *et al*., 2018).

83. Another potential location for the MCP's expansion is to the south, to cover the catchment that extends from Perth to north of the Firth of Forth. However, any expansion of the project to remove mink from coastal regions and at-risk seabird colonies will have to extend over a wide geographic range and deplete mink that could replace individuals removed from coastal territories.

84. Objective B will aim to expand mink control to cover certain locations where there is currently no MCP presence. This will be accomplished through an expansion of the network of monitoring and control units beyond the existing control. The expansion of control will be targeted at coastal areas with key SPAs, however large geographic areas will have to be covered in order to secure mink-controlled seabird nesting sites.

5.4. SCALE AND SITE SELECTION

85. Scale in relation to mink control relates to the number of birds required to be protected from mink predation (noting that other associated impacts of mink presence can include other impacts such as abandonment of colonies and predation on seabirds not in SPAs but demographically linked to SPA colonies) which will in turn offset the impact of the Array to razorbill and kittiwake. Scale is a vital aspect in the planning of compensation as it informs the level of mink control, cost, monitoring and adaptive management and can determine site selection of the measure. The following scale considerations follow the stepwise process outlined in section 3.4.

86. Determining the scale of compensation required for mink control is an intricate process that involves a number of different elements to be considered. Such elements include the consideration of mink foraging ecology, energetic requirements and distribution across key locations associated with seabird breeding habitat. Furthermore, consideration must also be given to how the selection of seabird prey within a colony is accounted for, and the proportion of those prey items likely to include razorbill or kittiwake, plus and the age of the prey taken (i.e., whether a chick or adult).

87. The Applicant has worked in collaboration with Professor Xavier Lambin and staff from the SISI MCP to determine a suitable approach to quantifying the scale of compensation required for the objectives associated with this compensation measure. The following sections present the evidence in support of the

determination of scale and use various examples of mink ecology and seabird breeding demographics to provide a suitable approach to inform scale of delivery of this compensation measure.

88. An extremely precautionary approach has been taken for the determination of the scale of this measure. As a result, the true impact of mink is likely to be much higher than presented here. For example, mink predation can lead to whole-colony abandonment, especially for smaller satellite colonies. The following precautionary approach taken does not incorporate such events.

5.4.1. SCALE EVIDENCE AND ASSUMPTIONS

89. It is acknowledged that there are a number of assumptions within the approach to determining an appropriate scale of implementation for this compensation measure, in the absence of direct measures of predation rate at relevant sites. Such assumptions are detailed in the following sub sections. Despite being precautionary, remaining uncertainty is dealt with via the application of a compensation ratio higher than 1:1, which aligns with key guidance on compensation measures. Furthermore, this compensation measure will be implemented to benefit at least two SPAs identified within Table 1.1. This therefore aligns with the Defra hierarchy for compensation measures by delivering compensation to like-for-like species at the site of impact.

Razorbill and Kittiwake Breeding Extent

90. SPA breeding colony extent was identified from JNCC (2023) for razorbill and kittiwake. SPAs were identified from the Seabirds Count dataset to align with Objectives A and B (see relevant section). For each SPA identified by the Seabirds Count dataset for razorbill and kittiwake, coordinates were plotted on GIS to determine distances along the SPAs coastline length. This provided an accurate distance within which razorbill and kittiwake breed. The SPA was then split by the proportion of each species that makes up the SPA population (see 'Proportion of SPA Breeding Birds' below for a detailed explanation of this method).

Mink Territory

91. Estimates of mink density in coastal habitat vary. Females are territorial and hold territories of 1 to 3 km along a linear waterway, whereas males can hold territories up to 5 km long, which may overlap with female territories (Invasive Species Scotland, 2024). Therefore, within a given 5 km of coast there is likely to be at least three mink (two female and one male). This gives a potential mink density of 0.6 mink/km of coastal habitat. However, other studies have reported greater densities of mink in coastal habitats, ranging from 0.75 to 2.27 mink/km (Table 5.1). The mean mink density across the five studies in Table 5.1 is 1.42 mink/km in a coastal habitat ((1.81 + 1.94 + 1.5 +1.1 + 0.75) ÷ 5 = 1.42) (CABI International, 2022). Therefore, a mean 1.42 mink per km is assumed and has been multiplied by the length of each SPA coastline to give total mink density within an SPA. This number has been selected following consultation with Professor Xavier Lambin and Nature Scot. There will be an opportunity to refine this value in the CIMP based on any preliminary studies that may be conducted to further elucidate mink coastal densities at specific SPAs, as well as expert guidance and updated evidence on the most robust method for determining mink density. The final number will not be any less precautionary than that presented here.

Table 5.1: Estimates of Coastal Mink Densities. Table taken from CABI International (2022).

Coastal Mink Density (mink/km)	Country	Reference
1.35 to 2.27 (median 1.81)	Canada	Hatler, 1976
1.88 to 2.0 (median 1.94)	Scotland	Dunstone and Birks, 1985; Birks and Dunstone, 1991
1.5	Argentina	Previtali *et al.,* 1998
1.1	Scotland	Moore *et al.,* 2003
0.75	Chile	Schüttler *et al*., 2010

92. It is assumed mink have equal access to all birds breeding at the SPAs listed below, as is evidenced in section 5.2.2. The proportional impact on razorbill and kittiwake within each SPA is calculated based on the percentage of razorbill and kittiwake within the SPA population. This is a further precautionary step, as there are some species within certain SPA populations that mink are less likely to target (such as gannet based on their size).

93. Only SPAs are included within the presented approach. This is precautionary as both razorbill and kittiwake breed outside of SPAs along the east coast of Scotland at locations likely to benefit from Objective A and B. Therefore, a larger number of razorbill and kittiwake are likely to benefit than the numbers stated within this document.

Mink Feeding Behaviour

94. An individual mink has been found to have cached 600 tern chicks in one week on the west coast of Scotland (Craik, 1995), with recent examples of 22 kittiwake in three hours (see Ecological Evidence report for further detail and images (appendix 1)). However, estimating exact birds predated by individuals is difficult; during the breeding season, mink will surplus-kill chicks and adults within the colony and cache them in their dens, of which they may have 2–10 near their favoured hunting grounds depending on habitat quality (Breault and Cheng, 1988; British Wildlife Centre, 2024). In one study, 200 guillemot chicks were found in a single mink den (T. Björnsson pers. comm in Clode and Macdonald, 2002). It is therefore considered highly precautionary to assume that one mink might predate 200 seabirds from a given colony in a breeding season.

Proportion of SPA Breeding Birds

95. The proportion of razorbill and kittiwake within an SPA was determined using data from Seabirds Count (JNCC, 2023). Within the JNCC data, kittiwake are counted as occupied nests. Therefore, kittiwake counts were multiplied by 2 to get the number of individuals. Razorbill are counted as individuals and counts are used as given by JNCC.

96. In order to calculate the proportion of each species within an SPA, the total number of birds of all species were added together, taking into account whether a species is counted as an occupied nest or an individual using the above method. The number of individual razorbill and kittiwake were then separately divided by the total number of birds within the SPA to determine the percentages, or proportions, of the SPA that are razorbill or kittiwake (see 'Proportion of SPA per Species' in Table 5.3 and Table 5.4).

97. The proportions were then multiplied by the number of 'Total Chicks Protected from Predation per Breeding Season' (Table 5.3 and Table 5.4) to achieve the number of chicks protected (or could be protected) by control for kittiwake and razorbill.

Conversion from Chicks to Adults

98. While there is strong evidence of mink predation on adult razorbill and kittiwake, it is likely that the majority of predation events are focused on young birds (with further information provided in the Ecological Evidence report (appendix 1)), as chicks are often taken due to their vulnerability while flightless. The highly precautionary approach presented here assumes only chicks are predated at each SPA. However, the AEOI of the Array (Table 1.2) is based on breeding bird populations, or adult birds. As a result, a conversion from the number of chicks to adults is necessary, as it is the expectation that compensation will deliver adult birds into the meta-population. The conversion of chicks to adults takes into consideration the age of first breeding and survival rates for kittiwake and razorbill.

99. Razorbill first breed on average when 5 years old i.e. in their sixth calendar year (Horswill and Robinson, 2015). First and second year survival rate are estimated to be 0.63, with the survival rate thereafter being 0.895 (Horswill and Robinson, 2015). Therefore to recruit one adult into the meta-population at 5 years old requires = 1 / (0.63 x 0.63 x 0.895 x 0.895 x 0.895) = 3.51 chicks. Kittiwake first breed on average when approximately 4 years old i.e. in their fifth calendar year (Horswill and Robinson, 2015). First year survival rate is estimated to be 0.79 with the rate thereafter being 0.854 (Horswill and Robinson, 2015). Therefore to recruit one adult into the meta-population at 4 years old requires = 1 / (0.79 x 0.854 x 0.854 x 0.854) = 2.03 chicks. Table 5.2 presents how many chicks are required to compensate for the impacts from the Array based on the Array impact on adult razorbill and kittiwake (28.4 adults x 3.51 chicks/adult = 100 chicks; 33 adults x 2.03 chicks/adult = 67 chicks). The inverse of this calculation is used to determine the number of adult birds that will benefit from the measure (presented in Table 5.5) from the number of chicks predated (presented in Table 5.3 and Table 5.4).

Table 5.2: Razorbill and Kittiwake Impacts from the Array and Associated Chick Conversion Rate Outcomes

Species	Array Impact (Summed Across SPAs)	Population of Chicks Required Per Annum By Measure to Produce Adult Equivalent (Rounded to the Nearest Whole Bird)
Razorbill	28.4 breeding adult individuals	100 chicks prevented from predation
Kittiwake	33 breeding adult individuals	67 chicks prevented from predation

5.4.2. SCALE CALCULATIONS AND SITE SELECTION

100. To predict the potential impact of mink on razorbill and kittiwake during a single breeding season (as mink predation would be considered an annual impact), the above assumptions were combined in the following steps for each SPA:

1) number of mink within an SPA = (mean density of 1.42 mink per km) x (the total SPA coastal habitat (km))
2) total number of chicks protected = (number of mink within an SPA) x (200 birds per mink per year)
3) number of razorbill OR kittiwake chicks protected = (total number of chicks protected) x (percentage of razorbill OR kittiwake within the SPA)
4) number of razorbill OR kittiwake adults = (number of razorbill OR kittiwake chicks protected) ÷ (3.51 razorbill chicks per adult OR 2.03 kittiwake chicks per adult)
5) compensation ratio = (number of razorbill OR kittiwake adults) ÷ (total impact of the Array on razorbill OR kittiwake (Table 1.2))

101. These estimates of mink predation events are presented in Table 5.3 and Table 5.4 on an Objective and SPA basis, with subsequent benefits to adult birds at each SPA and associated compensation ratio presented within Table 5.5.

102. The final location or set of SPAs targeted for mink control or expansion will depend on the final impact values and species determined by the Scottish Minister's Appropriate Assessment. However, the locations provided in Table 5.3 and Table 5.4 provide large scale potential whilst being based largely on precautionary assumptions.

Table 5.3: Objective A: Predicted Mortality at Seabird Colonies within SPAs during a Single Breeding Season if the SISI Mink Control Project Ceased (Rounded to Nearest Whole Bird)

SPA	Coastline Length (km)	Number of Mink (1.42 mink/km)	Total Chicks Protected from Predation per Breeding Season (Assumes 200 Birds/Season per Mink)	Proportion of SPA per Species (%)		Chicks Protected per Species (per Breeding Season)	
				Razorbill	Kittiwake	Razorbill	Kittiwake
Fowlsheugh	5.97	8.5	1696	12	24	204	407
Troup, Pennan and Lion's Head	15.2	21.6	4317	7	32	302	1381

Table 5.4: Objective B: Predicted Mortality at Seabird Colonies During a Single Breeding Season within SPAs Currently Outside the Coverage of the Mink Control Project (Rounded to Nearest Whole Bird)

SPA	Coastline Length (km)	Number of Mink (1.42 mink/km)	Total Chicks Protected from Predation per Breeding Season (Assumes 200 Birds/Season per Mink)	Proportion of SPA per Species (%)		Chicks Protected per Species (per Breeding Season)	
				Razorbill	Kittiwake	Razorbill	Kittiwake
East Caithness Cliffs	51.14	72.6	14524	11	18	1598	2614
North Caithness Cliffs	58.39	82.9	16583	3	11	497	1824
Cape Wrath	29.97	42.6	8511	6	13	511	1106
Handa	16.8	23.9	4772	11	10	525	477

Table 5.5: Anticipated Benefits to Adult Razorbill and Kittiwake at SPAs. Ratios are also Provided. Applicants Preferred Approach in Bold (Rounded to Nearest Whole Bird)

Objective	SPA	Subsequent Benefit to SPA Population (Adults)		Compensation Ratio	
		Razorbill	Kittiwake	Razorbill	Kittiwake
A	**Fowlsheugh**	**58**	**201**	**1:2**	**1:6**
A	Troup, Pennan and Lion's Head	86	681	1:3	1:21
B	**East Caithness Cliffs**	**455**	**1288**	**1:16**	**1:39**
B	North Caithness Cliffs	142	899	1:5	1:27
B	Cape Wrath	145	545	1:5	1:17
B	Handa	150	235	1:5	1:7

103. If the Applicant were to achieve only Objective A at Fowlsheugh SPA, at least 58 adult razorbill and 201 adult kittiwake would be protected from mink predation (likely more due to the intensification of control that would be carried out at locations under the existing control programme). Objective A at Fowlsheugh alone therefore gives a compensation ratio of at least 1:2 for razorbill and 1:6 for kittiwake. This is already a substantial overcompensation, and the expansion of the control programme to additional SPAs (Objective B) will have additional large benefits to adult razorbill and kittiwake (expansion to East Caithness Cliffs has the potential to offer a 1:16 compensation ratio for razorbill and a 1:39 ratio for kittiwake). Therefore, there is enormous potential for over-delivery of the measure to ensure the impacts associated with the Array are compensated.

104. Ratios are unique to each compensation project, measure and species where they depend on a number of factors. Despite this, the potential for considerable overcompensation lends this measure to collaborative approaches with other offshore windfarms while still delivering well over 1:1 to account for uncertainty within the calculations of scale.

105. The final location or set of locations will depend on the final impact values and species determined by the Scottish Ministers' Appropriate Assessment, however the locations provided within the above tables provide flexibility and are scalable to accommodate outcomes of the Appropriate Assessment. Furthermore, other SPAs and non-SPAs may be explored if necessary to achieve the required compensation.

106. While the measure focuses on delivery to razorbill and kittiwake, other species will also benefit from this measure. While they have no current 'value' towards the compensation requirement total for the Array, the Applicant may explore the additional contribution of this measure to non like for like species.

5.5. MAINTAINING THE COHERENCE OF THE SITE NETWORK

107. The evidence presented within this document and supporting annexes demonstrates that the proposed measures are capable of more than compensating for the estimated impact of the Array on the qualifying relevant features. The measure will be undertaken within the SPA network to at least one of the impacted SPAs, and therefore the birds that the compensation measure will safeguard will assimilate into the SPA population and both the UK National Site Network and the biogeographic population of razorbill and kittiwake.

108. While a number of SPAs are listed within Table 5.5, the compensation measures focus on the delivery of compensation to the most feasible locations within Scotland at a scale which provides over the required amount (i.e. high compensation ratios).

5.6. IMPLEMENTATION CRITERIA AND SECURING THE MEASURE

109. The implementation of this measure aims to align with the proven approach currently being used by the SISI MCP. This entails supporting the existence of the MCP once its current funding ends in 2026, ensuring the control programme is maintaining a reduced population of mink across the control area. The large scale and proven approach adopted by the MCP and its predecessors aims to deplete production of dispersers below the invasion front as low as possible, especially where there is access and people. The project works along a catchment basis to reduce the supply of propagules/dispersers by seeking to remove breeding females wherever they are known to have bred in the past (these are high quality territories that will be recurrently recolonised).

110. Objective A will be considered implemented on provision of funds to secure the control of mink at locations specified above, along with the provision of Mink Wardens that will facilitate a programme for increased effort at existing locations. Objective B will be considered implemented when control measures have been deployed at a new specified area (see Site Selection section above). Certain SPAs that fall under the current control area (Objective A) and those poised for an expansion of control (Objective B) may be pursued. Not all SPAs associated within a given objective need to be secured by the Applicant for the compensation to succeed. Instead, the SPAs pursued will be in line with the required compensation as decided by the Scottish Minister's Appropriate Assessment. This approach allows for key SPAs to be

targeted to compensate for any impacts from the Array, with additional SPAs available (out with those prioritised by Objectives A and B) for targeted control should adaptive management be necessary.

111. The large scale and proven approach adopted by the MCP and its predecessors will be secured by the Applicant to implement Objective A. Therefore the Applicant will ensure that the following process is included within the detailed CIMP.

112. The MCP deploys mink traps and monitoring rafts, placed strategically along rivers and burns. Rafts are positioned at the water's edge, and entice mink to explore wooden tunnels. Inside the tunnel, a clay pad captures mink paw prints, signalling their presence. An extensive monitoring network currently covers 43 river catchments from the Firth of Tay to the south of Durness, and is run by a network of volunteers (Invasive Species Scotland, 2024).

113. If mink are detected the monitoring raft is exchanged for a live capture trap, which is then checked daily by volunteers or project staff. If a mink is caught a local dispatcher will be called to humanely dispatch the mink (Invasive Species Scotland, 2024). Some rafts within reliable mobile phone signal are fitted with an electronic monitoring device that triggers upon trap closure (Martin, 2022). The MCP also deploy a network of traps which operate without the prior detection of mink presence. Traps are maintained by the network of volunteers, partners and staff and increasingly include the use of electronic trap monitoring devices.

114. All locations are considered securable in partnership with the SISI project and for Objective A will take effect from the end of current funding (2026) with Objective B being implemented in line with the compensation measures implementation timeline. The implementation timeline will be refined and set out in the detailed CIMP.

115. Presently, the SISI MCP is funded (until March 2026) by the Scottish Government's Nature Restoration Fund. Previous funding from NatureScot and the National Heritage Lottery Fund ended in September of 2023. Since the inception of the project, funding has been secured through *ad hoc* efforts on a short term basis, despite the project itself being strategic and long-term in nature (Lambin *et al.*, 2019). The current level of funding for the MCP is via the Nature Restoration Fund grant award of £2.08 million from 01 April 2023 to 31 March 2026.

116. NatureScot have indicated to the Applicant that to enable MCP continuation or expansion without a break in activities, a funding decision would be needed in 2025/26 for work to be maintained in 2026/27 and beyond. Other funding is likely needed for non-mink elements of the SISI programme which currently also delivers a programme of invasive, non-native plant control. The Applicant has secured an agreement with SISI to provide funding for the SISI MCP (and wider invasive species control work) for the duration of the Array (see letter of intent between the Applicant and SISI (annex B)).

117. The exact mechanism of funding will be determined in discussions with SISI to identify the most suitable approach. However the letter of intent shows a commitment between both SISI and the Applicant to enable the process to mature.

118. No issues with landowner or access agreement issues have been determined at this stage by the SISI MCP. Access to existing and new locations for the delivery of the measure will be developed in line with SISI support and protocol. In most circumstances access will be achieved through public access rights via right to roam. Further detail will be provided in the detailed CIMP.

119. The Applicant will commit to fund SISI and the MCP for at least the lifetime of the Array (35 years). The Applicant commits to ensuring the continuation of mink control in Scotland and will pass the oversight of the programme to a competent authority at the end of this period.

120. The final agreed approach to securing implementation will be outlined within the detailed CIMP, however, the Applicant is confident that the information presented within this document provides decision makers with sufficient and robust evidence the measure can be secured and will adequately compensate for the impacts associated with the Array.

5.7. MONITORING

121. Mink wardens will be secured by the Applicant to carry out the following monitoring duties and supplement the network of volunteers supporting the project. The ratio of wardens to volunteers will be increased in key priority areas, and it will be ensured staff are geographically located in most vulnerable areas so as to ensure high control level in those areas. Mink Wardens will conduct the high-skilled specialised tasks such as monitoring difficult-to-access locations.

122. Monitoring of the compensation measure as a whole will be developed with project managers of SISI and mink experts as part of the MCP and discussed with a post consent steering group consisting of key stakeholders (including NatureScot and JNCC) and will be set out in full within the detailed CIMP following consent by Scottish Ministers. Following implementation of the measure, compensation monitoring will be discussed with the post consent steering group at milestones set out within the detailed CIMP.

123. Monitoring of the compensation measures will be consistent for both Objective A and Objective B post implementation. The aim of monitoring will be to ensure the mink population is suppressed to an adequate level in line with the existing SISI MCP.

124. The Applicant will support SISI in the monitoring and control methods that the project deems most effective (likely mink rafts and traps will be used initially). Updated methods should be considered in order to streamline monitoring and control processes through advancements in technology (i.e., use of remote sensing techniques, camera traps, AI image analysis).

125. It is important to note that seabird populations are subject to many pressures and mink may not have an easily detectable population-level impact on an SPA. As a result, seabird populations and productivity will not be monitored. The metric that will ultimately be used to determine the success of the compensation will be mink-controlled habitat (based on mink captures per effort per unit area), with the subsequent benefit to seabirds determined based on the method outlined in section 5.4.

5.7.1. PROPOSED MONITORING

Objective A

126. Objective A aims to secure the existing control across the locations discussed in section 5.3.1, while intensifying the level of control effort at these locations. The monitoring for this Objective will align with the current MCP protocol for monitoring the presence of mink. However, mink captures are dependent on the level of effort. Going forward, monitoring will focus on the quantification and standardisation of monitoring effort to demonstrate mink absence. This will require an increase in the number of volunteers at key locations targeted for mink monitoring and control (see hierarchy presented in section 5.3.1). Data on effort hours per unit of area will be recorded in the updated monitoring programme, as well as any mink detections and captures. This 'occupancy data' will be collected within concentric distance bands from targeted SPAs (see hierarchy presented in section 5.3.1). The updated monitoring method will allow for a scientifically rigorous analysis of the data and the determination of whether a given SPA can be considered mink-controlled (which will be the metric of success for this compensation measure).

127. It is expected that Mink Wardens will focus on undertaking the monitoring and day to day management of the locations covered by this objective. This objective aims to increase the capacity of the programme and intensity control through additional resources, Wardens, and volunteers. Wardens will be responsible for monitoring near more inaccessible cliffs that have previously gone unmonitored by volunteers, as well as organising the volunteers to achieve the specified monitoring programme.

Objective B

128. While it is known mink are present across much of the north-east and south of Scotland (though at a low density and considerably depressed by existing control), their distribution across seabird SPAs outside of

the current control programme is not yet confirmed. Locations discussed under Objective B (section 5.3.2) will undergo the same standardised monitoring and control process outlined for Objective A. Careful records will be kept of mink abundance and distribution (per effort per unit area) with the expectation that there will be more effort needed, especially closer to the bird cliffs. Depletion of mink will then take place radiating out in concentric bands from the targeted SPA.

129. Monitoring protocol will ultimately be agreed with SISI based on the final location agreed for the programme's expansion and will be presented in the detailed CIMP, to be approved by Scottish Ministers in consultation with key stakeholders.

5.8. OUTLINE TIMELINE

130. The final timeline for the implementation of this measure will be determined through ongoing consultation with SISI. Objective A will be initiated following the end of the current SISI funding period in 2026, and Objective B will likely be commenced prior to the operation of the Array. This will allow for benefits to be realised prior to windfarm operation. A detailed and final timeline will be presented in the detailed CIMP post-consent. However, based on the above objectives, an indicative timeline has been proposed as:

- 2026: SISI and Ossian OWFL Partnership to take effect and commencement of funding. The establishment of Objective A and planning for Objective B.
- 2028: Objective B, expansion of mink control, will be commenced following the securing of the existing programme. Pre-implementation monitoring of SPAs targeted for mink control will be commenced at this stage.
- 2032: Post-implementation monitoring will be conducted at all SPAs undergoing mink control.

5.9. COMPENSATION CHECKLIST

131. To ensure Scottish Ministers have the information they need to inform their decision on the appropriateness of the above compensation measure, the relevant guidance (see section 2) and how it is met by this document (and supporting documents), is presented with Table 5.6:.

Table 5.6: Compensation Measure Checklist

Checklist Question	Covered in This Report	Explanation
Is the measure technically feasible?	Yes	The measure has been implemented across large areas of Scotland successfully and is therefore technically feasible.
Is the measure financially feasible?	Yes	The Applicant has committed to securing funding for the measures covering both Objective A & B in partnership with SISI.
Is the measure legally feasible?	Yes	The measure has been implemented across large areas of Scotland successfully and is considered to be legally feasible.
Is the measure deliverable?	Yes	The measure has a proven track record of being delivered successfully and at scale. The measure will be delivered in partnership with SISI and maintained for the lifetime of the Array. The measure is deliverable.
Is the measure ecologically effective (i.e. sufficient)?	Yes – see detailed information available within the Ecological Evidence Report (appendix 1)	The measure has a strong evidence base in support as set out in detail in the ecological evidence report (appendix 1) and will be delivered at SPAs within the relevant species biogeographic range, therefore maintaining the coherence of the network.
Will the measure be effective before adverse effects arise?	Yes	Compensation will be implemented and functional before impact occurs. Monitoring will evidence effectiveness of measure. Adaptive management options have been identified to deal with unforeseen circumstances (see section 7).

6. BYCATCH REDUCTION

6.1. INTRODUCTION

132. The Applicant proposes a reduction in fishing bycatch of razorbill and gannet as a compensatory measure for any potential impacts associated with the relevant species as set out in section 1.2.

133. This measure will target bycatch reduction in Portugal, as it has been identified that there is substantial incidence of detected bycatch, established links with the UK National Site Network, and the existence of a comprehensive hotspot analysis and trial program for bycatch reduction methods. This measure will encompass a period of monitoring and bycatch reduction method testing before the implementation of the selected reduction technique(s).

134. The subsequent sections provide the Scottish Ministers with robust evidence for the proposed compensation measure of bycatch reduction. This includes:

- providing evidence of the high degree of gannet and razorbill bycatch in specific fisheries;
- demonstrating elevated bycatch levels in particular locations connected to southern North Sea breeding populations of gannet and razorbill;

- identifying a range of feasible techniques available for reducing bycatch of razorbill and gannet; and
- substantiating the expected decrease in mortality for razorbill and gannet post-implementation of bycatch reduction.

135. This measure will be pursued through a partnership with the SPEA who oversee this bycatch work, and has been developed in collaboration between NIRAS and SPEA on behalf of the Applicant. A letter of support is also provided by SPEA in (annex C).

136. To avoid repetition, while this section provides a concise overview, a detailed examination of the evidence supporting this compensation measure can be found in the Ecological Evidence Report (appendix 1), which should be consulted alongside this document.

6.2. SUMMARY OF EVIDENCE

6.2.1. RAZORBILL

137. Diving behaviour is a large predictor of bycatch risk, which increases at sunrise and decreases at sunset for razorbill (Cleasby *et al.*, 2022). Instead of diving into nets they are caught while foraging underwater, and often drowned in the catch before the net is hauled onto the boat. Out of the various types of fishing practice, set nets (or gill or static nets) pose the greatest threat to this species.

138. Preliminary results from a bycatch study in Aveiro-Nazaré, Portugal (as part of the EU LIFE PanPuffinus project) show strong evidence for high rates of razorbill bycatch. Questionnaires documenting bycatching from 2021-2022 reported around 75 instances of razorbill bycatch in just 115 surveys of vessels less than 12 m in length, and around 100 birds reported from 140 questionnaires from vessels larger than 12 m in length (A. Almeida, SPEA, 2024 *pers. comm)*.

139. Any razorbill that are caught in Portuguese fisheries are likely to be associated with breeding colonies in the east Atlantic and North Sea. Furthermore, razorbill originating from the UK National Site Network migrate south in the non-breeding season along the Atlantic coast and off the coast of Iberia (Wright, *et al.*, 2012), overlapping with the areas of high bycatch risk in Portuguese waters. The British Trust for Ornithology's (BTO) ringing report recorded foreign locations of recovered razorbills that were ringed in the UK. The report shows razorbills were recovered all along the coast of western Europe, with heavy overlap in Portuguese waters (BTO, n.d.).

140. The proposed compensation measures offer a holistic razorbill compensation strategy, which would increase breeding success of razorbills in the breeding season through mink control and then would decrease mortality rates in the non-breeding season through bycatch reduction in Portuguese wintering grounds. This approach will ensure that two separate seasonal pressures are being considered to not only mitigate against the Array impacts, but to increase overall resilience within UK razorbill populations.

6.2.2. GANNET

141. Gannet feeding ecology makes this species highly vulnerable to bycatch (Grémillet *et al.,* 2020). It was originally thought that only surface and shallow pelagic fishing gear would catch shallow diving species such as gannet, but despite the lack of overlap in diving range and fishing depth it has also been identified that they can also be caught in deep nets during deployment or hauling (Bradbury *et al.*, 2017).

142. In Portuguese continental waters, gannet are the most abundant pelagic seabird species and face high bycatch risk from both longline and fixed gear fisheries (Araújo *et al.*, 2022 and A. Almeida, 2024 *pers. comm*). Gannet are the main bycaught species among Portuguese fisheries, comprising approximately 76% of all seabird bycatch, with an estimated 14,764 individuals bycaught annually in demersal longlines (>12 m) alone (Oliveira *et al.,* 2020). Additionally, fisheries monitored in Ilhas Berlengas caught 51 gannets in 295 fishing trips between 2015 and 2018 (Oliveira *et al.,* 2020). Preliminary estimates of bycatch in Aveiro-Nazaré (as part of the EU LIFE PanPuffinus project) show more than 300 gannets caught in trammel net fisheries between 2021 and 2022 (A. Almeida, 2024 *pers. comm).*

143. This area overlaps with a key wintering area of UK gannet (Wright *et al.,* 2012), so this number will likely include mainly individuals from UK populations (Oliveira *et al.,* 2021) (see section 6.8 for further links to Scottish breeding SPAs for gannet). This is also supported by tracking data of gannets during post breeding movements which shows birds breeding at Scottish SPAs have connectivity with regions of high bycatch off the coast of Portugal (Furness *et al.*, 2018).

144. Gannets rely on western Iberian waters for both wintering and migration. One study tracked gannet migration from Alderney and found that first-year birds migrate south earlier than those further north, many to waters off northwest Africa and the Mediterranean (Veron and Lawler, 2009). Another study tracked 15 gannets from Scotland to northwest Africa. Birds migrating to northwest Africa were found to make many trips in western Europe (Garthe *et al.*, 2016). Lane *et al.* (2021) tracked 35 adult and 38 juvenile gannets from Bass Rock off the east coast of Scotland, and found that they migrated as far as the Atlantic coast of Africa, staying close to the coast. Aerial surveys conducted between 2010 and 2015 aimed to estimate the absolute population of post-breeding gannets in this region. The study recorded 3,672 gannet sightings along 10,496 nautical miles.

145. Bycatch rates may also be affected by bird behaviour; the time of day lines are set; the prevailing weather conditions; and the performance of any bird deterrent devices used (Northridge *et al.,* 2023). Increased sunlight is understood to lead to higher bycatch rates, explaining the higher rates seen in the summer months and in lines set at dawn (Marine Directorate, 2023).

146. There is therefore the potential, based on successes described with the Ecological Evidence report (appendix 1), to alleviate bycatch for these species by implementing bycatch reduction techniques within areas of high bycatch. This compensatory measure, therefore, would seek to address the bycatch rate of razorbill and gannet at fisheries in Portugal via the initiation of a bycatch reduction project.

147. For both razorbill and gannet, there is a robust evidence base supporting the application of bycatch reduction technology to reduce the direct mortality to each species which will in turn compensate the impacts of the Array. While this measure will be delivered outside of Scotland, there are strong links between Scottish breeding razorbill and gannet, and the areas of significant bycatch risk in Portuguese waters.

6.3. OBJECTIVE AND SCALE

148. The aim of this compensatory measure is to achieve a decrease in the bycatch mortality rates of gannet and razorbill in Portuguese waters through the application of bycatch reduction techniques. The compensation required will be determined in the Scottish Minister's Appropriate Assessment.

149. There is some uncertainty regarding regional bycatch rates, which have been estimated based on trials conducted on a sample of vessels. These extrapolated values (which have been published in peer reviewed journals and are referenced throughout this document and Ecological Evidence Report (appendix 1)) indicate immense potential for reducing seabird mortality due to bycatch. Additional trials will help refine precise figures. Nevertheless, the reduction of the consistent bycatch observed in the trial vessels themselves would be sufficient to meet the required compensation. For example, bycatch trials from Aveiro-Nazaré SPA detected 175 instances of razorbill bycatch in one year. Additionally, more than 300 gannets were bycaught in Aveiro-Nazaré SPA in the same year (A. Almeida, 2024 *pers. comm)*. If just these reported birds are saved from bycatch induced mortality, it will create a compensation ratio of 1:6.1 for razorbill and 1:4.8 for gannet which is significantly greater than the impact of the Array to both species.

150. The Applicant will work in collaboration with SPEA to further refine bycatch rates on a regional basis in Portuguese waters to allow targeted implementation of bycatch reduction technology as compensation. SPEA is a research-oriented organisation that will undertake a peer-review process to publish the results of the bycatch testing. All data will therefore be subject to rigorous scientific assessment and quality check.

Data used in the determination of scale will be presented in any required compensation progress reports, along with all relevant publications and sources.

151. The scale of the delivery of the measure will be based on the number of birds that have been reported to be saved using bycatch reduction techniques. This number will be calculated from a percentage efficacy rate determined during bycatch reduction technique testing. The number of birds compensated will be based on recorded levels of bycatch reported pre-implementation per vessel, and scaled up to the number of vessels employing reduction techniques. Efficacy rates will be specific to location, fishing gear, and bycatch reduction method (see Table 6.1). The apportionment of birds back to the UK National Site Network and/or Scottish SPAs based on isotope analyses will be factored in to the final scale (see section 6.8). The determination of the scale of this measure (on a per annum basis) will therefore align with the following process (data are fabricated as an example, see Table 6.1):

- Step 1 - Determine/finalise bycatch baselines within a given hotspot (i.e. on average, 50 vessels caught 400 gannets and 200 razorbill per year in Aveiro-Nazaré);
- Step 2 – Test bycatch reduction technique to find efficacy rate (i.e. a 60% reduction in gannet bycatch and a 40% reduction in razorbill bycatch using a scarybird device in Aveiro-Nazaré);
- Step 3 – Determine scale based on bycatch baselines and efficacy rate (i.e. 240 gannet and 80 razorbill compensated for each year across if reduction technique deployed across all 50 vessels in Aveiro-Nazaré);
- Step 4 – Scale will be further modulated based on the results of isotope analyses and the percentage of birds that are apportioned back to the UK National Site Network and/or (depending on geographic resolution) Scottish colonies; and
- Step 5 – Bycatch reduction technique deployed, and post-implementation sample monitoring to determine adherence to the agreed implementation method. At this point, the metric of success will be the implementation of the technique itself, and the number of birds determined to be protected based on Step 3 and Step 4 (i.e. 240 gannet and 80 razorbill compensated for each year if deployed across all 50 vessels in Aveiro-Nazaré, modulated by the apportionment of bycaught birds back to the UK National Site Network).

Table 6.1: Example of Bycatch Scale Calculations. All Data are Fabricated to Show how Scale will be Calculated when Preliminary Data and Reduction Methods are Further Developed

Location (SPA)	Gear Type	Pre-Implementation Bycatch Levels (per Annum)	Bycatch per Vessel (per Annum)	Reduction Method Employed	Reduction Efficacy Rate	Birds Compensated if Applied Across All Vessels (per Annum)	Vessels Targeted for 30 Gannet and 50 Razorbill
Ilhas Berlengas	Longline	Gannet: 100 (Across 10 vessels)	Gannet: 10	Brickle curtain	Gannet: 55%	Gannet: 55	Gannet: 6 vessels
Aveiro-Nazaré	Fixed gear (i.e., Trammel net)	Gannet: 400 Razorbill: 200 (Across 50 vessels)	Gannet: 8 Razorbill 4	Scarybird	Gannet: 60% Razorbill: 40%	Gannet: 240 Razorbill: 80	Gannet: 7 vessels Razorbill: 32 vessels

152. One of the advantages of this measure is its scalability. A large number of birds could potentially be compensated for by implementing bycatch reduction techniques across the whole of the target fisheries, making it a measure that would benefit from collaborations or through strategic compensation. However, the Applicant could also pursue this measure on a project-alone basis to compensate for the impacts from the Array by targeting an appropriate number of vessels (see example in Table 6.1).

153. Bycatch reduction will result in an immediate benefit to SPAs when adult birds are saved from mortality, but a conversion would be required to establish the number of saved juveniles required to compensate adult birds from affected SPAs. The proposed process does not currently assess whether bycaught gannet and razorbill are juvenile or mature, as it was determined that it is likely impractical for fishers and/or cameras to accurately determine age. For example, gannets take five years to reach breeding maturity (Horswill and Robinson, 2015) and the exact age would have to be determined to correctly assess survival rates for immature birds to reach breeding adult stage. This requires detailed assessment of feathers and a knowledge of wing moult sequences etc, which would not be possible for fishers or cameras. In addition, both razorbill and gannet gain the plumage of an adult bird before being sexually mature (Blomdahl *et al.,* 2012).

154. Adult birds are likely to be present in large numbers in their overwintering grounds so the instant benefit of bycatch reduction techniques to adult gannet and razorbill is a safe assumption. Additionally, it is assumed that the overcompensation within the compensation ratios will account for the mortality of juveniles instead of adult birds.

155. This factor will continue to be discussed with SPEA to determine if it is feasible to account for juveniles within the monitoring protocol. If so, the process for determining scale will be updated to factor in an additional calculation based on the survival rates of juveniles, and will be presented in the detailed CIMP.

6.4. FISHERIES SELECTION

156. Reports and discussions with bycatch experts show strong instances of bycatch of razorbill and gannet in Portugal (A. Almeida, 2024 *pers. comm*). Portuguese bycatch is monitored by the SPEA. The researchers at SPEA are currently assessing the extent of the bycatch, the fisheries that the bycatch is most prevalent within, and trialling the most effective techniques. The fisheries that will be targeted for bycatch reduction will be in line with the guidance of SPEA in relation to gannet and razorbill.

157. SPEA has monitored bycatch in Portugal since 2010 and has identified two key hotspots where bycatch of seabirds is an issue: Ilhas Berlengas (also referred to as Berlengas; Figure 6.1) and Aveiro-Nazaré. Bycatch in these locations is especially prominent in autumn and winter months in Aveiro-Nazaré (Oliveira *et al.*, 2015) (when UK breeding razorbill and gannet are on migration or at their wintering areas). In Berlengas, bycatch depends on the gear, with longline having higher rates in spring and summer, while gillnets catch more seabirds in autumn and winter. Another SPA in south Portugal, Costa Sudoeste SPA, has also been identified as a potential hotspot for gannet bycatch, but is currently in a preliminary monitoring phase (A. Almeida, 2024 *pers. comm*).

158. Araújo *et al.* (2022) undertook a comprehensive assessment of bycatch occurring in several Portuguese fisheries, which includes fixed gear, purse seine, beach seine, bottom trawl, and longline. The highest observed bycatch and mortality rates for gannet, guillemot, and razorbill were recorded for fixed gears (including gill and trammel nets) and longlines. Identified hotspots for bycatch in Portugal are presently at different stages of testing:

- Ilhas Berlengas SPA – Currently SPEA have data on bycatch rates estimated by gear/species (gannet or razorbill) /season (divided by vessels less and more than 12m). This is currently the most advanced hotspot in terms of data collected and reduction techniques trialled, but a lack of funding inhibits further data collection and implementation;
- Aveiro-Nazaré SPA – SPEA have collected raw data, but the project is on-going and therefore there are no published rates of estimated bycatch, though preliminary data shows high rates of bycatch for gannet and razorbill. SPEA has aspirations to expand monitoring in this SPA to more fleets but lack of funding inhibits further data collection and implementation;

- Sagres Costa Sudoeste SPA – SPEA has previously identified this SPA as a problem for gannet bycatch. However, monitoring has not yet been formally initiated at this site. A lack of funding inhibits further data collection and implementation for bycatch reduction technology at this location.

159. At both Berlengas and Aveiro-Nazaré SPAs, there is a lack of comprehensive data on seabird mortality due to gillnets operated by local fisheries (<9 m length) at a very shallow waters. However, the occurrence of mortality in these fleets is well known.

160. Based on the above alone there is a significant potential to reduce bycatch mortality to razorbill and gannet at numerous locations at a scale which even at the most conservative assessments will compensate for the impacts of the Array. By providing expertise and securing funding, the Applicant is able to provide additional resources and deliver compensation in partnership with SPEA. Without this funding this programme of bycatch reduction would not be possible.

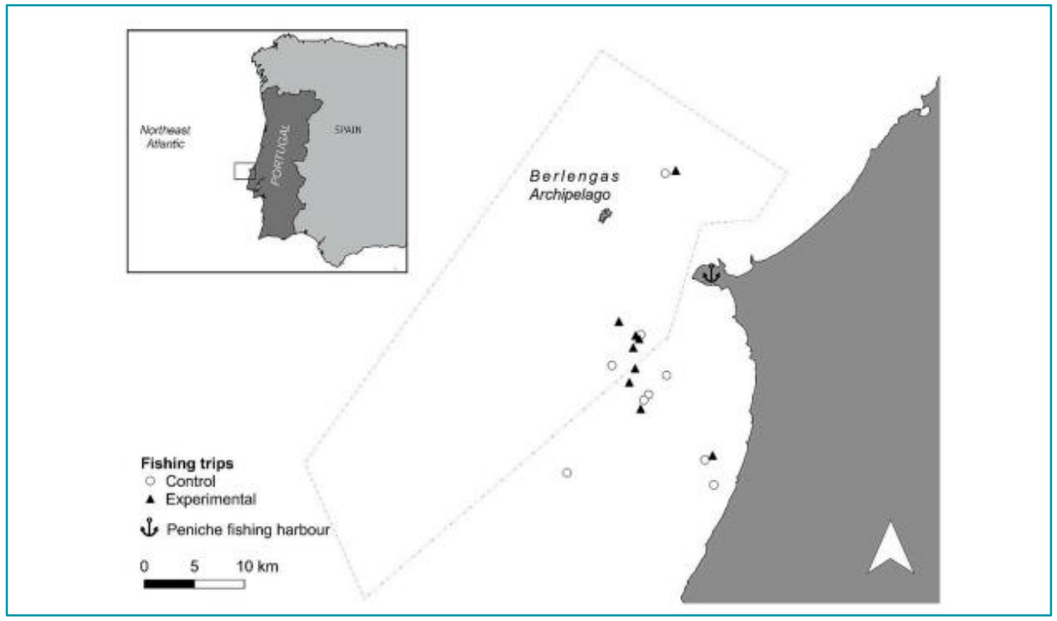

Figure 6.1: Distribution of Monitored Fishing Trips in Berlengas SPA. Figure Represents Bycatch Reduction Trials, Done with a Circle Representing Control and a Triangle for Experimental Trips. Figure taken from Almeida et al. (2023)

161. Bycatch data is managed extensively by SPEA who have worked closely with the Applicant's representative to develop this compensation approach on behalf of the Applicant. Guidance on the most impactful fishery targets and specific fishers to participate in this bycatch reduction measure will be based on continued consultations with SPEA as more data is collected and hotspots determined as part of this compensation measure. The Applicant intends to support bycatch reduction at identified hotspots and support the identification and subsequent implementation of bycatch reduction techniques at other fisheries, if required. Bycatch hotspots may develop in new locations over the period of compensation to reflect fishing pressure. The Applicant will work with SPEA to stay abreast of hotspots.

6.5. BYCATCH REDUCTION TECHNIQUE SELECTION

162. Bycatch reduction approaches for fixed gear and longline fisheries are presented in Table 6.2. Many techniques are still being trialled, as efficacy is often location and species dependent. The bycatch reduction technique that will be selected will therefore be in line with the guidance of SPEA who are currently trialling various methods.

Table 6.2: Bycatch Reduction Methods Being Trialled and Present Understanding of Method Viability

Fishery Type	Method	Method Viability
Fixed gear Longline	Night setting of gear	Recommended as best practice by Agreement on the Conservation of Albatrosses and Petrels (ACAP) and New Zealand fisheries management, but effectiveness may vary across species.
Longline	Swivel hooks	Evidence suggests reduction of fulmar longline bycatch by a factor of up to 100. Potential explanations include increased sink rates due to heavier hooks, and/or less efficient hooking of seabirds.
Longline	Underwater line setters	Some promising trials, but not yet proven practicable and thus not widely used commercially. Depth required to avoid gannet foraging zone unlikely to be viable.
Fixed gear Longline	Bird scarers	Often homemade. Can help reduce bycatch but may also tangle with fishing lines. Case study in Namibia: bird scaring lines reduced bycatch in hake fishery from 0.57 birds/1,000 hooks to 0.04 birds/1,000 hooks (Paterson *et al.*, 2019). Very strong results from Scarybird trials (discussed within the following sections).
Longline	Weighted branchlines	Normally associated with pelagic longline fisheries, little research on demersal. Alternative but conceptually similar approaches in development.
Fixed gear Longline	Offal management	Offal retention (for subsequent disposal when not setting or hauling is occurring) is recommended by ACAP (2019), but it has been highlighted that there may be logistical, or safety constraints associated with the temporary storage of all offal onboard (Bull, 2006).
Longline	Brickle curtain or bird exclusion device	A brickle curtain forms a physical barrier around the area where the fishing gear is either deployed from or recovered onto. The device acts as a physical and visual deterrent to reduce seabirds from becoming entangled or injured by baited hooks during the setting or hauling of fishing gear (Clean Catch UK, n.d.).
Fixed gear Longline	Deterrence (water spraying, acoustic)	Gas cannons have been tested is some longline fisheries, but the general perception is that seabirds quickly habituate to the noise and there is little evidence for a long term effective acoustic deterrent for seabirds (Parker, 2017). Kiyota *et al.* (2001) reported that the range of the cannon was not sufficient to be particularly effective and that changes in wind direction would further limit its efficacy.

163. Bycatch reduction methods can be vessel/gear modifications, operational, deterrence, reducing attraction, or reducing the likelihood of a bird being hooked by a fishing line. In addition to the on-board methods

being trailed, modifications to fishing practices based on bird behaviour are also being considered. For example, this could involve fishers avoiding a bycatch hotspot for a certain seabird species during the months where bycatch has been recorded to be highest. SPEA has confirmed they are considering such factors, including depth, within their bycatch monitoring and reduction technique trials (A. Almeida, 2024 *pers. comm*).

164. Following consultations with SPEA, the Applicant currently understands that use of bird scarer devices (also called 'scarybird') has shown to be a promising bycatch reduction method. Offal management has also been flagged as a key method, though more testing and assessment is needed to accurately estimate the cost of this method. Additionally, SPEA is interested in trialling the brickle curtain in gillnet fisheries (A Almeida, 2024 *pers. comm*).

165. In a study conducted between 2019 and 2020 (Almeida *et al.,* 2023), the scarybird was tested on a fishing vessel operating bottom gillnets near and within the Berlengas SPA. The scarybird device is designed with the shape of a bird of prey and features a retractable system, which ensures that the device remains in constant motion even with a gentle breeze. The primary purpose of the scarybird is to simulate the presence of a bird of prey flying over the fishing area. The device is strategically placed at the stern of a fishing vessel, secured using a 4 m long pole and a 0.65 m craft line. Following deployment, the scarybird reached a maximum height of 7 m above sea level (see Figure 6.2) (Almeida *et al.,* 2023).

166. In the Berlengas SPA, the scarybird effectively reduced the presence of gannet around the vessel by 72% when fishing when compared to the control fishing trips. Notably, this aerial deterrent had no adverse impact on the fishery's target catches or revenue, making it a promising method for bycatch reduction in bottom gillnets and other similar gear (Almeida *et al.,* 2023). This device is a key method being trialled for gillnet fisheries in Portugal. While the efficacy of the scarybird has been proven, there are questions that still need to be answered around habituation and efficacy distance. Additionally, all potential bycatch reduction methods are in need of increased observation effort (A. Almeida, 2024 *pers. comm*). A lack of funding currently limits further work on addressing this issue.

167. Should the Scottish Ministers conclude AEOI and approve the Applicant's Derogation Case including this document the Applicant would intend to support the trial of methods to reduce seabird bycatch in Portuguese fisheries, which will be finalised and agreed at the post-consent stage within the detailed CIMP. The Applicant will secure funding for the further monitoring, trialling and implementation of bycatch reduction efforts as compensation with SPEA. Following successful identification of an efficient means of reducing bycatch for target seabird species, the Applicant would support the implementation of the technique for a defined period of time (e.g., the lifetime of the Array, approximately 35 years) which would then form the delivery of the compensation for the Array.

Figure 6.2: Image Depicting the Scarybird Device off the Stern of a Fishing Vessel. Image by Elisabete Silva

6.6. MONITORING

168. Monitoring by SPEA has consisted of interviews, questionnaires, onboard observers, and logbooks, working in partnership with fishers to build strong and trusting relationships. On-board observers were placed on vessels from April 2010 to December 2015. Observers covered trawl, longline, fixed gear (gill nets, trammel nets) and purse seine fishing gear. For the last 6 years bycatch has also been recorded in voluntary logbooks by boat captains. Across the monitoring work undertaken by SPEA, effort has not been consistent across years, gear type, or spatial scale. The Applicant will work with SPEA to determine a standardised monitoring protocol to be taken forward. Data collected has included:

- Questionnaires and interviews: Questionnaires and interviews characterize fishing operations, target fish species, observations of seabirds in fishing areas, interactions between seabirds and fishing activities, and associated issues such as seabird bycatch. Skippers are requested to provide information on any bycatch incidents over the past year, either in total numbers or as a monthly average. Data also includes the average number of fishing trips per boat, the number of interviews conducted, instances of reported seabird bycatch during interviews, the total number of individuals (across all species) caught accidentally, and the average bycatch per trip (Oliveira *et al.,* 2015).
- Onboard observers: Observers documented any incidental catch of seabirds, noting their proximity to the vessel and the nature of their interactions with fishing activities. They also logged the coordinates of all fishing endeavours, instances of seabird interactions, and incidental catch events. At the conclusion of each fishing operation, observers documented the quantity of target species caught (Oliveira *et al.,* 2015).
- Logbooks: Logbooks record number of bycaught birds and species, vessel speed, gear characteristics, and fish catches (Almeida *et al*., 2023).

169. The Applicant commits to supporting SPEA in the continued collection of data on bycaught seabirds, and any data specific to bycatch reduction methods being trialled. SPEA will report to the Applicant on all bycaught birds and determine a percentage reduction of bycatch based on trials of reduction techniques. This data will allow for comprehensive baselines to be determined and changes in bycatch numbers before and after the implementation of reduction techniques. While numbers will be reported after the implementation of reduction methods, it is important to note that the metric for the success of this measure will be based on the implementation of the bycatch reduction technique itself as outlined in section 6.3.

170. Additionally, a camera monitoring system has been proposed by the Applicant for future bycatch monitoring, pending discussion with SPEA. Camera monitoring systems have been shown to uncover massive under-reporting of bycatch, and are therefore expected to increase bycatch baselines if implemented (Vance, 2024). The Applicant would look to support SPEA on suitability testing of camera monitoring systems and image processing as part of the implementation of the measure, along with baseline bycatch rate data collection and testing of the bycatch reduction technique. The Applicant will also work with SPEA on training for fishers for reporting bycatch.

171. Post-implementation monitoring will follow a similar protocol as pre-implementation monitoring. However, post-implementation monitoring may be less exhaustive (for example, the use of camera monitoring may be removed) and will not include any analysis on the impact of using bycatch reduction methods on fish catch. Post-implementation monitoring will seek to ensure adherence to the implementation programme and sample the results of its execution. However, the rigorous protocol that will be used to collect data on bycatch baselines and technique testing pre-implementation will not be considered necessary at the post-implementation stage. The metric of success of this measure will be the implementation of the reduction technique itself, with the subsequent benefit to gannet and razorbill determined based on the method outlined in section 6.3.

6.7. IMPLEMENTATION CRITERIA AND SECURING THE MEASURE

172. The Applicant proposes supporting the implementation of bycatch reduction through the provision of funding that would cover any human resources, travel, and equipment that would be required to reduce bycatch for razorbill and gannet as a result of the Array. Implementation will be discussed with SPEA to feed in to their proposed protocol, which will be determined based on the results from further trials as well as government action plans and guidance (described below).

173. SPEA is a non-governmental organisation that promotes the study and conservation of birds and counts with the work of a large number of professionals and enthusiasts who develop activities in the field of ornithology and nature conservation. Currently, it has about 4,000 associates and develops nature conservation projects in the national territory (mainland, Azores and Madeira) and also some with foreign partnerships (Cape Verde, São Tomé, Greece, Spain and Malta). SPEA is a BirdLife International partner.

174. SPEA implemented MedAves, a pilot program for bycatch reduction methods in Portugal from June 2018 to March 2020. This program, funded by EU resources (Order 118/2016, of April 29), won the Natura 2000 award (European MSP Platform (n.d.). The MedAves program incorporated bycatch reduction methods in Portugal that are similar to those proposed here. However, MedAves concluded in 2020. Currently, 60% of SPEA's bycatch work is funded by LIFE PanPuffinus, which ends in August 2025 and is specifically related to the work in Aveiro-Nazaré SPA. The Applicant will commit to securing funds to deliver key elements of the measure at the relevant scale required, potentially across multiple locations in Portuguese waters.

175. It is assumed that any vessels currently working with SPEA on establishing bycatch baselines and trialling reduction techniques could be targeted for the implementation of this measure. The number of vessels used will be dependent on the level of bycatch in a certain fishery and the efficacy of reduction techniques (as described in section 6.3). The success of the measure will be based on a reduction in razorbill and gannet bycatch mortality from the baseline, as a result of bycatch reduction techniques. An example is presented within Table 6.1.

176. The longevity of any bycatch reduction programme is dependent on the participation of fishers that are willing to adapt their methods in order to accommodate bycatch reduction techniques. The continuation and expansion of these relationships using well established and accepted approaches will therefore be a priority. Within both the monitoring and implementation stages, the Applicant and SPEA will develop agreements with fishers to compensate fishers for any impact on fish catch, gear damage or to cover extra working time needed to operate a measure. SPEA has historically secured agreements with participating fishers, which the Applicant will look to continue and support. Due to the significant number of birds caught each year in Portuguese waters and the small number of birds requiring compensation, there is a significant opportunity for this measure to adapt and continue to provide the required amount of compensation over the lifetime of the Array.

177. Fishers will work directly with SPEA in partnership with the Applicant. This ensures the continuation of the strong, longstanding and trusted relationship between SPEA and Portuguese fishers. This is evidenced in the 13 years of collaboration between SPEA and certain fisheries in Portuguese waters, plus the significant amount of research which has been conducted in association with the fishers. This not only conveys a high level of trust between the two parties, but also a strong foundation for the Applicant to build upon. SPEA and the Applicant will commit to agreements with fishers to ensure participation in the programme and provide the requested data or conduct certain requested procedures onboard. These agreements will be overseen by SPEA who are familiar with the fishers and have an ongoing rapport.

178. In terms of Portugal national approach to bycatch, at present, Portugal has no national plan for the management of bycatch. Although the Portuguese National Strategy for Nature Conservation and Biodiversity 2030 (dated 2018) envisaged adopting a Portuguese National Plan of Action on Bycatch by 2022, no such plan has yet come forward in draft form or for consultation. There is no deadline in law for the delivery of this Action Plan, and once it comes forward (which the Applicant understands SPEA is currently being consulted on), it will require ministerial approval. Discussions between the Applicant and SPEA have indicated that the Ossian bycatch measure will be additional to the National Plan of Action, as the National Plan is likely to be limited in capacity and will focus on three distinct taxonomic groups (cetaceans, birds and turtles), which will limit government resources allocated to seabird bycatch specifically. In contrast, the Applicant's approach gives committed funding and support to target species

throughout the operational life of the Array. If a National Plan does come forward, the Applicant's CIMP will address this and will detail any relevant relationship between the Action Plan and the Applicant's bycatch compensation measure..

179. The Applicant has been working with Scottish and Portuguese lawyers and has determined there are not any regulatory barriers that may affect the securing of this measure.. Additionally, a letter of support has been provided by SPEA (annex C), that outlines a commitment to undertaking bycatch work in partnership with the Applicant for the duration of the Array. The Applicant notes also that a bycatch measure was secured as compensation for the consented Hornsea Project Four Offshore Wind Farm (Ørsted (2022))

6.8. MAINTAINING THE COHERENCE OF THE SITE NETWORK

180. The evidence presented within this document and supporting annexes demonstrates that the proposed measures are capable of more than compensating for the estimated impact of the Array on the qualifying relevant features. The measure will be undertaken within the SPA network and with direct links to Scottish SPAs. Furthermore, this measure will be delivered within the same biogeographic region as the North Sea. Over 97% of the entire UK breeding population of gannet belongs to a colony located within an SPA, with 74% of this population belonging to a colony within a Scottish SPA (Mitchell *et al*., 2004). Therefore the birds that the compensation measure will generate will assimilate into both the UK National Site Network and the biogeographic population of gannet thereby ensuring that the coherence of the National Site Network in the UK is maintained.

181. The Applicant proposes working with SPEA to conduct stable isotope analyses on bycaught gannet and razorbill. This work will provide further supporting evidence on the connection between birds caught in Portuguese waters and the UK National Site Network and/or Scottish colonies, and will support detailed consideration of the refined numbers of bycatch reduction that can be attributed as compensation for impacts from the Array. This approach has recently been demonstrated to be highly effective in apportioning kittiwakes at wintering grounds to their breeding colonies in the UK (Furness and Furness, 2024). It is likely that this methodology will play increasingly greater role in establishing population connectivity of seabirds at risk from offshore renewable development in the future, as a more efficient and cost-effective alternative to fitting seabirds with tags that track their movements (Furness and Furness, 2024).

182. Grecian *et al.* (2019) conducted isotope analyses on 43 Northern gannets from Bass Rock in Scotland to determine their wintering locations in the British Isles and the Bay of Biscay, a region from Gibraltar to Mauritania, and the Mediterranean Sea. Studies such as this provide an isotopic library which will be built upon through further work in different part of the species' range. Isotope analysis supports determining the highest possible geographic resolution, which will then be factored in to the determination of the compensation ratios for this measure (see section 6.3). SPEA has established a relationship with a laboratory at the University of Lisbon to prepare for this work. Bycaught gannet and razorbill specimens are currently being stored at the University, where stable isotope analyses will be conducted.

6.9. OUTLINE TIMELINE

183. The final timeline for the implementation of this measure will be determined through ongoing consultation with SPEA. The continued monitoring of bycatch baselines and the initiation of testing bycatch reduction methods will be commenced prior to the construction of the Array (programmed for 2031). The Applicant will work with SPEA to initiate chosen reduction techniques upon the operation of the Array.

184. A detailed and final timeline will be presented in the detailed CIMP post-consent. However, the Applicant proposes the following approximate timeline for bycatch implementation:

- 2024 to 2026: Establish bycatch baseline and hotspots.
- 2026 to 2029: Test bycatch reduction method and monitor effectiveness.
- 2029 onwards: Implement successful method and monitor.

185. As bycatch reduction is reducing the direct mortality of individual seabirds, the delivery of compensation is instant as soon as the compensation measure is implemented at the fishery.

6.10. ADAPTIVE MANAGEMENT: SCOTTISH BYCATCH

186. The Applicant has established a working relationship with researchers at the Scottish Oceans Institute (SOI) at the University of St Andrews to understand the progress that has been made towards accounting for UK bycatch and the trialling of reduction methods. Bycatch reduction will be delivered as a primary measure in Portuguese waters due to the level of evidence supporting the measure, scale of potential delivery and working relationships between NIRAS, the Applicant, SPEA and Portuguese fishermen. These relationships are less well developed in Scotland. However, if required, Scottish bycatch reduction will be pursued as adaptive management. This section highlights the key aspects for this adaptive management option, which will be expanded upon if this option is pursued.

Evidence

187. Longline fishing appears to present the greatest threat with regard to bycatch to gannet in UK waters though, with an estimate of 50 to 150 gannet likely bycaught each year (Kingston *et al.,* 2023). Static gillnets are also likely a cause of bycatch, with 117 individuals estimated in 2016 and 102 in 2017 (Northridge *et al.*, 2020). The first report from the Bycatch Monitoring Project (BMP) by Northridge *et al.* (2020) reported an estimated annual bycatch included 100 to 200 razorbills.

188. Estimates from the BMP are currently based on a relatively limited sampling period and level of bycatch. However, it has been indicated that the likelihood of these species being caught was dependent on fishing gear type, depth in the water column, net size, and the time of day. For example, razorbills undergo the most mortality in coastal static net fisheries, some mortality in midwater trawls, and only sporadic cases of bycatch in longline fisheries. Depth and mesh size also appeared to be important for razorbill bycatch (Northridge *et al.*, 2020). In the UK, bycatch rates for gannet appear to be highest in the summer and in the most northerly parts of the UK fisheries range. Bycatch rates may also be affected by bird behaviour; the time of day lines are set; the prevailing weather conditions; and the performance of any bird deterrent devices used. Increased sunlight is understood to lead to higher bycatch rates, explaining the higher rates seen in the summer months and in lines set at dawn (Marine Directorate, 2023).

Fisheries Selection

189. According to a recent hotspot analysis of bycatch in the UK (Northridge *et al.*, 2023), the majority of gannet bycatch has been found in a UK offshore longline fishery that targets hake in United Kingdom and European Union waters from the Celtic Sea to the northern North Sea (Kingston *et al.*, 2023). Potential areas to reduce razorbill bycatch in Scottish water is less well evidenced and would be explored further with SOI, in the event adaptive management is required to secure compensation for the Array. The following therefore is relevant to gannet only at this stage.

190. Longline fishery data is managed extensively by the SOI who have the aim of quantifying non-commercial protected or vulnerable species bycatch in various fisheries to meet several international monitoring obligations including EU Council Regulation 812/2004. Guidance on the most impactful fishery targets and willing fishers to participate in this bycatch reduction measure will be based on consultations with the researchers at SOI who are presently overseeing the programme.

Bycatch Reduction Methods

191. SOI has proposed methods for reduction technique trials and are currently planning trials for innovative bird scarers and swivel hooks (A. Kingston, 2024 *pers. comm*). However, bycatch reduction methods will not be finalised until further trials elucidate the effectiveness of various techniques in UK fisheries. As

described above, similar measures are being relied on in Portugal, so the efficacy and feasibility of these measures are already established.

Monitoring

192. Monitoring by SOI has consisted of sea-going fisheries observers, and has been collecting data since 1996 (Northridge *et al.* 2023). If required, the inclusion of this work as compensation will look to support the identification of bycatch hotspots and continued baseline monitoring.

Implementation

193. Defra has commissioned the Joint Nature Conservation Committee (JNCC) to form a UK marine bycatch Plan of Action (PoA) under the Fisheries Act 2020 and the Joint Fisheries Statement (JFS) (Defra, 2022). The work being done on the BMP falls under the JNCC's Bycatch Mitigation Initiative (which has superseded the PoA). If required, the implementation of any Scottish bycatch as adaptive management compensation for the Array will be prepared so as to provide additionality to any UK government action on bycatch.

Stakeholders

194. The Applicant understands that the SOI has a subcontract with the Centre for Environment, Fisheries and Aquaculture Science (Cefas) to provide additional data from the commercial catch sampling programmes (CSPs) from England and Wales. These programmes are managed by UK national government fisheries science agencies including Cefas, Marine Scotland Science (MSS), and the Agri-Food and Biosciences Institute of Northern Ireland (AFBINI). The CSPs employ an at-sea observer programme and are also managed by the Scottish Fishermen's Federation (SFF).

195. If required, the Applicant will work with SOI and the Sea Mammal Research Unit (SMRU) who manage the BMP within SOI at the University of St Andrews. The Applicant recognises the long-standing and ongoing correspondence between the SOI and fishers that targeted for bycatch trials. If required, the Applicant will secure this measure through supporting contributions to the programmes that has been established by SOI.

6.11. COMPENSATION CHECKLIST

196. To ensure Scottish Ministers have the information they need to inform their decision on the appropriateness of the above compensation measure (in relation to bycatch reduction in Portuguese waters), the relevant guidance (see section 2) and how it is met by this document (and supporting documents) is presented with Table 6.3:.

Table 6.3: Compensation Measure Checklist

Checklist Question	Covered in This Report	Explanation
Is the measure technically feasible?	Yes	The measure has been implemented across large fisheries across the world and is evidenced within Portugal. The measure is therefore technically feasible. The Applicant will work with SPEA to refine the selected bycatch option or options as part of the detailed CIMP.
Is the measure financially feasible?	Yes	The Applicant has committed to securing funding for the measures in partnership with SPEA. Therefore the measure is financially feasible.
Is the measure legally feasible?	Yes	The measure has been implemented across a number of fisheries. Additionally, bycatch measures have been secured as compensation for Hornsea Project Four Offshore Wind Farm. The Applicant has taken advice from UK and Portuguese legal advisors, confirming there is no legal impediment to the measure, and that it is legally feasible to secure the bycatch compensation measure via agreements with SPEA in Portugal. Therefore, the Applicant considers this measure to be legally feasible.
Is the measure deliverable?	Yes	The measure has a proven track record of being delivered successfully and at scale. The measure will be delivered in partnership with SPEA and maintained for the lifetime of the Array.
Is the measure ecologically effective (i.e. sufficient)?	Yes – With more detailed information available within the Ecological Evidence Report (appendix 1)	The measure has a strong evidence base in support and will be delivered to gannet and razorbill originating from Scottish SPAs and within the relevant species biogeographic range, therefore is ecologically effective and will maintain the coherence of the network.
Will the measure be effective before adverse effects arise?	Yes	Compensation will be implemented and functional before impact occurs. Monitoring will evidence effectiveness of measure. Adaptive management options have been identified to deal with unforeseen circumstances.

7. ADAPTIVE MANAGEMENT

197. The EC (2018) Guidance (as summarised in section 2 recognises that the feasibility of the identified compensation measure must be based on the best scientific knowledge available. The uniqueness of developing compensation cases increases the importance of pre- and post-implementation monitoring. There will, following award of consent, be a phase of further evidence gathering followed by monitoring which will continue through the operational life of the Array. Where required, monitoring and adaptive management will ensure, in line with guidance, that the proposals are developed in the most appropriate manner and can be flexible to enable modifications to be made where evidence suggests it is merited. It is important to recognise that the compensatory measures proposed here are part of a package of measures which provide resilience across the compensation actions for the qualifying features.

198. The Applicant's compensation proposal will adopt a pragmatic approach to determine whether adaptive management actions are necessary once the Array is operational. The Applicant will discuss with relevant stakeholders if adaptive management is required post-consent of this document.

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

200. 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 Array. However, it is essential to remain alert to unforeseen events that may necessitate adaptive management. The Applicant's compensation aims to mitigate all foreseeable risks as much as practicable through design, implementation and planned maintenance. Additionally, measures presented by the Applicant (presented in section 3) have been developed to be flexible and scalable and therefore can be increased as necessary to respond to feedback or requirements identified by the adaptive management process. 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.

201. Adaptive management will be detailed in full and in agreement with relevant stakeholders within the detailed CIMP. A list of potential adaptive management options and their relevance to each compensation measure is presented within Table 7.1 to demonstrate that there are feasible options for each proposed measure.

Table 7.1: Potential Adaptive Management Options Relevant to Each Compensation Measure

Compensation Measure	Potential Adaptive Management Options
Strategic Compensation	Use of the proposed Marine Recovery Fund, sandeel fisheries closures, or similar strategic route, if available (see section 4).
Mink Control	Increase the number of areas included within Objective A; Increase the new areas included within Objective B; Provision of additional Mink Wardens to facilitate the implementation of Objective A and B; and Include predator proof fencing at readily accessible colonies where control is proving to be less effective than planned.
Bycatch Reduction	Expansion of bycatch reduction technology to additional vessels within fishery; Trial of other bycatch reduction techniques to test implementation capabilities; and Explore application of bycatch reduction technology at other locations/ fisheries (including Scotland; see section 6.10).

8. APPROACH TO SECURING COMPENSATION WITHIN THE SECTION 36 CONSENT FOR THE ARRAY

8.1. OVERVIEW

202. This section provides information to support the Applicant's proposed draft consent condition which the Scottish Ministers could include as part of the Section 36 consent for the Array (provided in section 8.3).

203. As detailed in the preceding sections of this Report, the Applicant is presenting two compensatory measures to offset the potential impact of Ossian. Adequate reasons and evidence have been provided, to give Scottish Ministers confidence that these can be secured and will be effective compensation.

204. The two proposed compensatory measures are (a) a predatory (mink) control measure in conjunction with the SISI; and (b) a by-catch reduction measure in Portuguese waters in conjunction with SPEA. The ecological evidence base for both is provided as part of this Application in the Ecological Evidence Report (appendix 1). Details of how these compensatory measures would be secured and implemented, including the approach to adaptive management and monitoring, is provided in this document. The Applicant has also prepared an outline CIMP (appendix 3), to inform the CIMP that will be prepared post-consent.

8.2. CONDITIONS PREVIOUSLY APPLIED TO UK OFFSHORE WINDFARMS

205. There are now multiple examples of UK offshore windfarms consented with a derogation case. In all cases compensation has been secured with a condition attached to the planning consent.

206. For offshore wind projects located in English waters and consented by the Secretary of State, the format of these conditions has included a requirement to implement the compensatory measure within a specified number of years prior to construction. In Scotland, the recently granted Green Volt Wind Farm Section 36 consent contains a compensation condition that stipulates that development shall only be commenced where the Scottish Ministers have concluded that the success criteria have been met and that the compensatory measures are effective, and confirmed this in writing to the Company.

207. However, as detailed below the mechanisms by which impacts will be offset are different. This is because, once implemented, both measures are expected to be immediately beneficial for the populations of seabird species affected by the Array.

208. Accordingly, there is no need or justification in the case of the Array for the compensation to be secured by a condition that imposes a significant time delay.

209. On this basis, Ossian has proposed an alternative condition, which Scottish Ministers can use to satisfy themselves that the Ossian compensatory measures are secured (section 8.3).

8.2.1. DEVELOPMENT CONSENT ORDERS

210. The UK Government's Secretary of State for Energy, Security and Net Zero (DESNZ) has consented eight offshore wind farm projects with associated derogation cases for SPAs with seabird qualifying features. These are: Hornsea Three (2020); East Anglia ONE North, East Anglia TWO, Norfolk Vanguard, Norfolk Boreas (2022); Hornsea Four (2023) and the Dudgeon and Sheringham Shoal Extensions (2024).

211. The DCOs for all of these projects included a similar condition to the following, which focused on the timing of compensatory measures.

"…*no operation of any turbine forming part of the authorised development may begin until [number] full breeding seasons following the implementation of the measures set out in the [Implementation and Monitoring Plan] have elapsed*…"

212. Ossian considers that a long time-lag is neither necessary nor applicable to the compensatory measures proposed in this document. This is because both measures are expected to boost adult survival as soon as they are implemented. As evidence in the Ecological Evidence Report (appendix 1), reducing numbers of mink at Scottish breeding colonies, will limit predation of kittiwake and razorbill (including adult birds) as soon as the first mink trap is put in place. Furthermore, the Applicant's proposal to implement bycatch reduction techniques in Portuguese waters will have an instantaneous effect on the survival of Scottish gannet and razorbill overwintering in those areas (also including adult birds).

213. Notwithstanding the difference highlighted above between Ossian and other projects, it is important to note Habitats Regulations guidance from the European Commission (European Commission, 2018) on derogations does allow for impacts to occur prior to compensation becoming realised, but the expectation in these circumstances is that compensation should be over-provided.

"…*The result of compensation should generally be operational at the time the damage occurs at the site concerned. However, under certain circumstances where this cannot be fully achieved, overcompensation would be required for the interim losses*…."

214. As presented in sections 5.4 and 6.3 of this document, both compensatory measures proposed by Ossian are expected to over-compensate the worst case impacts associated with the Array.

8.2.2. SECTION 36 CONSENTS

215. Scottish Ministers have recently consented the Green Volt offshore windfarm, which contained a condition within its S36 consent that requires Scottish Ministers to confirm Green Volt's compensatory measures as effective before development can commence.

"…The Development shall only be commenced where the Scottish Ministers have concluded that the success criteria have been met and that the compensatory measures taken are effective and confirmed this in writing to the Company following its consideration of monitoring and reporting information provided by the Company…."

216. As set out above, the Applicant considers that a condition imposing a delay is neither necessary nor applicable to the compensatory measures proposed in this document for the Array. This is because both mink control and bycatch reduction are established conservation practices. The direct benefits to seabird species are well known and supported by a substantial evidence base, as detailed in the Ecological Evidence Report (appendix 1).

8.3. PROPOSED CONSENT CONDITION

217. The following provides the Applicant's proposed draft consent conditions which the Scottish Ministers could include as part of the Section 36 consent for the Array:

"Outline Compensation Implementation and Monitoring Plan (CIMP)" means the plan with that title dated 28 June 2024 submitted with the Application.

1. The Company must, no later than 6 months prior to the Commencement of Development, submit a Compensation Implementation and Monitoring Plan (CIMP), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with any advisors or organisations as may be required at the discretion of the Scottish Ministers.

The CIMP must be based on the Outline Compensation Implementation and Monitoring Plan. The CIMP must be implemented as approved (including any updates or amendments). No wind turbines forming part of the Development may become operational unless and until all those measures required by the approved CIMP to be implemented prior to the operation of the wind turbines have been implemented and the Scottish Ministers have confirmed this in writing.

Any updates or amendments to the CIMP by the Company must be submitted, in writing, by the Company to the Scottish Ministers for their written approval.

9. SUMMARY

218. This document presents a detailed overview of various compensation measures which can be implemented to offset the impacts of the Array, if AEOI are concluded by Scottish Ministers.

219. Strategic delivery of compensation for the species impacted by the Array has significant potential and the Applicant is fully supportive of this approach. Due to the infancy of strategic compensation measures, the associated timelines may not align with those being pursued by the Applicant. As a result, the Applicant has followed a diligent approach to determine two project-driven compensation measures relevant to razorbill, kittiwake and gannet, as well as further adaptive management measures.

220. The Applicant has worked closely with leading organisations and world experts to develop the compensation case and is therefore confident the measures are secured, are legally, financially and technically feasible and can be delivered at the required scale in order to ensure the overall coherence of the national site network. Furthermore, the Applicant has suggested proven monitoring approaches and developed an adaptive management process which will be refined depending on the final locations of delivery and the associated timeline.

221. A summary of the proposed timeline for the measures described in this report is presented in Figure 9.1.

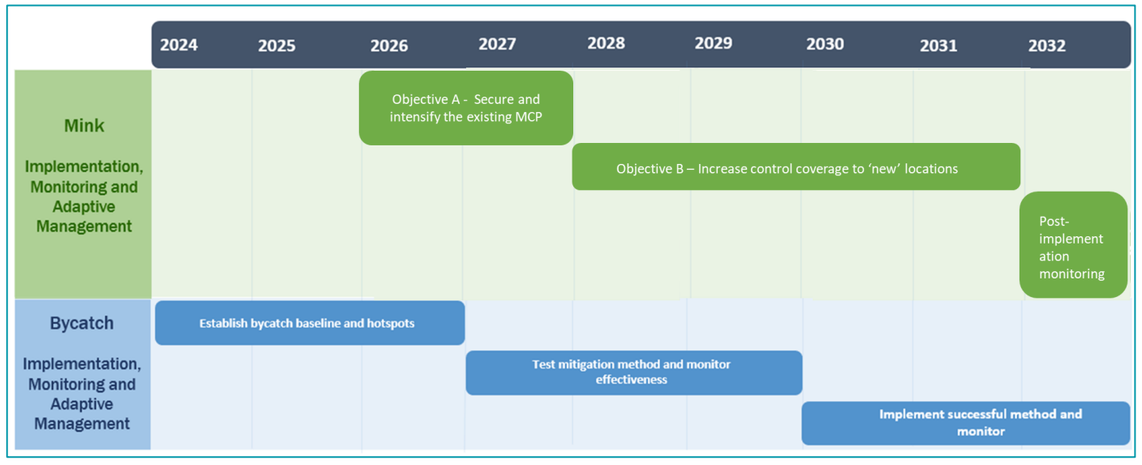

Figure 9.1: Draft Timeline for Proposed Measures

222. The Applicant is therefore confident that the Scottish Minsters can rely on the information presented within this document and associated appendices in support of the Applicant's derogation case to approve the compensation measures.

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sse Renewables · Marubeni · CIP Copenhagen Infrastructure Partners

Ossian Offshore Wind Farm Limited
Inveralmond House
200 Dunkeld Road
Perth
PH1 3AQ

Project Office
Fourth Floor
10 Bothwell Street
Glasgow
G2 6NT

ossianwindfarm.com