West of Orkney Windfarm

Document Number
WO1-WOW-PER-ENV-RPT-0050

Revision 01

Approved

Mr Stuart McAuley - Offshore Wind Power Limited

Oct 3, 2024, 3:08 PM GMT+1:00

WEST OF ORKNEY WINDFARM

Addendum to the Compensation Measures Plan

OWPL Document Number	Originator Document Number	Revision	Status	Date
WO1-WOW-PER-ENV-RPT-0050	N/A	01	Approved for Use	03.10.24

Document Role

Role	Company	Name	Aconex Signature
Author	Royal HaskoningDHV	EM	N/A
Checker	OWPL	OWPL	N/A
Acceptor	OWPL	OWPL	N/A

Contents

1. Introduction 4
1.1 Background 4
1.2 Purpose of this document 4
2. Quantum of Compensation 5
2.1 Predicted impacts 5
2.2 Compensation quantum 5
3. Potential Compensation Measures 9
3.1 Review of compensation measures 9
3.2 Potential compensation measures available to the Project 12
3.3 Strategic compensation 12
4. Proposed Compensation Measure 13
4.1 Introduction 13
4.2 Predator eradication/exclusion 13
5. Without Prejudice Measure 23
5.1 Introduction 23
5.2 Disturbance reduction measures 23
6. Alternative Measures 25
6.1 Introduction 25
6.2 Marine Recovery Fund 25
6.3 Orkney Native Wildlife Project 25
7. Summary 30
8. References 31

1. Introduction

1.1 Background

The Applicant, Offshore Wind Power Limited (OWPL) is proposing the development of the West of Orkney Windfarm ('the Project'), an Offshore Wind Farm (OWF), located at least 23 km from the north coast of Caithness and 28 km from the west coast of Hoy, Orkney. Crown Estate Scotland (CES) awarded OWPL the Option Agreement Area (OAA) in January 2022 for the development of the Project following the ScotWind leasing round which began in late 2019.

The Applicant has produced a Report to Inform Appropriate Assessment (RIAA) and RIAA Addendum detailing the potential impacts of the Project on European sites. Based on the approach taken, following guidance from NatureScot, the Applicant concluded no adverse effect on site integrity (AEoSI) for any European site, with the exception of:

- The guillemot (*Uria aalge*) feature at Sule Skerry and Sule Stack Special Protection Area (SPA) from Project alone impacts and in-combination with other projects;
- The kittiwake (*Rissa tridactyla*) feature at North Caithness Cliffs SPA from Project impacts in-combination with other projects; and
- The kittiwake feature at East Caithness Cliffs SPA from Project impacts in-combination with other projects.

For these sites it was not possible to conclude no AEoSI.

While the Applicant concludes no AEoSI for all other sites, it is acknowledged that the Scottish Ministers may reach a different, more precautionary, conclusion regarding impacts in-combination with other projects. Therefore, compensation measures are being proposed on a 'without prejudice' basis for the sites and features for which Scottish Ministers concluded AEoSI in their Appropriate Assessment for the Green Volt Windfarm, as the Scottish Ministers may be minded to conclude AEoSI as a result of the Project in-combination, specifically for:

- The kittiwake feature at Buchan Ness to Collieston Coast SPA;
- The gannet (*Morus bassanus*) and puffin (*Fratercula arctica*) features at Forth Islands SPA;
- The kittiwake feature at Fowlsheugh SPA;
- The kittiwake feature at Troup, Pennan & Lion's Head SPA; and
- The guillemot feature at East Caithness Cliffs SPA.

In respect of these features and sites, the Applicant presents its derogation case on a "without prejudice" basis.

Although AEoSI was predicted for razorbill at the East Caithness Cliffs SPA in the Green Volt AA, the Project impact on razorbill at this SPA is predicted to be less than one bird per annum and therefore the Applicant does not consider that this would materially contribute to any in-combination effects.

1.2 Purpose of this document

The purpose of this document is to provide information to enable the Scottish Ministers to be satisfied that compensatory measures proposed by the Applicant can be delivered in a timely manner and can be relied upon to secure the overall coherence of the national site network in light of any effects of the Project.

This Compensation Measures Plan:

- Reviews potential compensation measures for the relevant species;
- Provides the available evidence that implementing these measures will protect the overall coherence of the National Site Network; and
- Aims to identify suitable locations to implement the measure(s) and provides a roadmap for how the chosen measure(s) will be delivered.

Information about monitoring, reporting, programming and adaptive management are provided in the Compensation Implementation and Monitoring Plan.

2. Quantum of Compensation

2.1 Predicted impacts

The project alone impacts for the sites and features covered by the Compensation Measures Plan are presented in Table 2-1 and Table 2-2.

Table 2-1 Predicted impacts for which the Applicant has concluded AEoSI and compensation is being proposed

European Site	Guillemot	Kittiwake
Sule Skerry and Sule Stack SPA	128	-
East Caithness Cliffs SPA	-	6.7
North Caithness Cliffs SPA	-	5.5

Table 2-2 Predicted impact for which the Applicant is proposing compensation on a without prejudice basis

European Site	Guillemot	Kittiwake	Puffin	Gannet
East Caithness Cliffs SPA	17.1	-	-	-
Buchan Ness to Collieston Coast SPA	-	1.4	-	-
Forth Islands SPA	-	-	10.3	10.4
Fowlsheugh SPA	-	1.1	-	-
Troup, Pennan & Lion's Head SPA	-	1.6	-	-

2.2 Compensation quantum

In calculating the quantum of compensation required to offset the predicted impacts of the Project, the Applicant has reviewed the methods applied by other OWF developers who have received consent in the UK. The approach adopted by Green Volt (2024) and Hornsea 4 (APEM, 2021) has been adopted. The compensation requirements for each of the relevant species has been calculated as the number of breeding pairs required to produce enough fledglings to replace the adults lost from the population as a result of the Project, using the formula shown below.

$$N_{Fledglings\ required} = \frac{N_{New\ breeding\ recruits\ required}}{\prod_{Age=0}^{Age=6} Survival_{Age}}$$

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

2.2.1 Guillemot

The compensation requirement for guillemot has been calculated using the national average productivity, mean age-specific survival rates and recruitment age as detailed in Horswill and Robinson (2015) and presented in Table 2-3.

Table 2-3 Demographic rates used to calculate compensation quantum for guillemot

Parameter	Demographic Rate
Productivity	0.67
Recruitment age	6
Survival 0-1 year	0.560
Survival 1-2 year	0.792
Survival 2-3 year	0.917
Survival ≥4 year	0.939
Survival to recruitment	0.34

Based on the values in Table 2-3:

- An additional 380 fledglings or 566 breeding pairs are required to replace the 128 adult guillemot lost from the Sule Skerry and Sule Stack SPA population; and
- An additional 50 fledglings or 75 breeding pairs would be required to replace the 17 adult guillemot lost from the East Caithness Cliffs SPA should the Scottish Ministers conclude AEoSI.

2.2.2 Kittiwake

The compensation requirement for kittiwake has been calculated using the national average productivity, mean age-specific survival rates as detailed in Horswill and Robinson (2015) and presented in Table 2-4. Values used by other, recently consented, UK offshore wind farms, such as Hornsea 4, were reviewed and were found to result in very similar values.

Table 2-4 Demographic rates used to calculate the compensation quantum for kittiwake

Parameter	Demographic Rate
Productivity	0.69
Recruitment age	4

Parameter	Demographic Rate
Survival 0-1 year	0.79
Survival >2 year	0.85
Survival to recruitment	0.46

Based on the values presented in Table 2-4:

- An additional 15 fledglings or 21 breeding pairs are required to replace the 6.7 adult kittiwake lost from the East Caithness Cliffs SPA;
- An additional 12 fledglings or 17 breeding pairs are required to replace the 5.5 adult kittiwake lost from the North Caithness Cliffs SPA;
- An additional 3 fledglings or 5 breeding pairs would be required to replace the 1.4 adult kittiwake lost from the Buchan Ness to Collieston Coast SPA should the Scottish Ministers conclude AEoSI;
- An additional 3 fledglings or 4 breeding pairs would be required to replace the 1.1 adult kittiwake lost from the Fowlsheugh SPA should the Scottish Ministers conclude AEoSI: and
- An additional 4 fledglings or 5 breeding pairs would be required to replace the 1.6 adult kittiwake lost from the Troup, Pennan and Lion's Head SPA should the Scottish Ministers conclude AEoSI.

2.2.3 Puffin

The potential compensation requirement for puffin has been calculated using the national average productivity, mean age-specific survival rates and recruitment age as detailed in Horswill and Robinson (2015) and presented in Table 2-5.

Table 2-5 Demographic rates used to calculate the compensation quantum required for puffin

Parameter	Demographic Rate
Productivity	0.62
Recruitment age	4
Survival 0-3 year	0.71
Survival 3-4 year	0.86
Survival 4-5 year	0.81
Survival to recruitment	0.22

Based on the values in Table 2-5, an additional 47 fledglings or 77 breeding pairs would be required to replace the 10.3 adult puffins lost from the Forth Islands SPA population should the Scottish Ministers conclude AEoSI.

2.2.4 Gannet

The potential compensation requirement for gannet has been calculated using the national average productivity, mean age-specific survival rates and recruitment age as detailed in Horswill and Robinson (2015) and presented in Table 2-6.

Table 2-6 Demographic rates used to calculate the compensation quantum for gannet

Parameter	Demographic Rate
Productivity	0.7
Recruitment age	5
Survival 0-1 year	0.42
Survival 1-2 year	0.83
Survival 2-3 year	0.89
Survival 3-4	0.9
Survival 4-5 years	0.92
Survival to recruitment	0.26

Based on the values in Table 2-6, an additional 40 fledglings or 58 breeding pairs would be required to replace the 10.4 adult gannet lost from the Forth Islands SPA population, should the Scottish Ministers conclude AEoSI.

3. Potential Compensation Measures

3.1 Review of compensation measures

Potential compensation measures for seabirds were identified and reviewed by Furness *et al*. (2013) and updated by Furness (2021). These reports, in addition to the recent regional compensation development report by Pizzolla *et al*. (2024), formed the primary source of information used to create a long list of potential measures that could be applied to the Project (Appendix A1). Each species was considered separately, with the aim of identifying a measure or measures that could be applied to all species requiring compensation. The review of measures for each of the relevant species is summarised in the following sections.

3.1.1 Guillemot

Furness *et al*. (2013) identified four potential compensation measures that could benefit guillemot populations:

- Closure of sandeel and sprat fishing close to breeding area SPAs or in all UK waters;
- Closure of sandeel and sprat fishing in areas where these species are aggregated in winter;
- Eradication of rats; and
- Prevent risk of major oil spills near to SPAs.

Only the "prevent risk of major oil spills near to SPAs" was considered highly likely to be effective with high confidence in that assessment based on evidence. However, it was noted that oil spills have largely been prevented now, so this is unlikely to be a practical option. Furness (2021) presented additional evidence on closure of sandeel and sprat fisheries in UK waters and eradication of rats and other invasive mammal predators. There was a good deal of new evidence presented by Furness (2021) to show the benefits of closure of sandeel fisheries on guillemot populations. In addition, analyses by McGregor *et al*. (2022) have shown a strong likelihood of sandeel fishery closures having a positive effect on guillemot populations in the North Sea. Furness (2021) points out recent analyses of rat removal from Lundy having a positive effect on the guillemot populations, while rat removal from Canna did not show such a positive effect, although this is thought to be due to other pressures on that population.

Further compensation measures considered by Pizzolla *et al*. (2024) as having moderate or strong evidence of benefit to guillemot were:

- Reduced disturbance at colonies;
- Bycatch mitigation; and
- Biosecurity.

Given the cliff nesting habit of guillemot, the number of colonies at which visitor access is possible is relatively limited. Pizzolla *et al*. (2024) highlighted that restricting visitor access at such sites has potential to conflict with the benefits of increased public engagement, and that the impact of such measures can be difficult to quantify. However, Allbrook and Quinn (2020) found that in some instances measures such as information boards and signage may be useful in reducing disturbance caused by visitor presence at seabird colonies. Fisheries bycatch of guillemot is reported predominantly from the static or set net fisheries focused on the south coast of England, whereas fisheries in the north of Scotland are predominantly longline, for which guillemot are not a bycatch species (Northridge *et al*. 2020). Pizzolla *et al*. (2024) considered biosecurity measures to have strong evidence of benefit for seabird species, however these measures are concerned with minimising the threat posed by invasive species that could have harmful impacts on seabird colonies and are therefore often associated with an invasive species control programme rather than a standalone measure.

3.1.2 Kittiwake

Furness *et al*. (2013) identified seven potential compensation measures that could benefit kittiwake populations:

- Closure of sandeel and sprat fishing close to breeding area SPAs or throughout UK waters;
- Eradication of American mink;
- Eradication of feral cats;

- Eradication of rats;
- Exclusion of foxes from colonies;
- Exclusion of great skuas from buffer zone around kittiwake colonies; and
- Construction of artificial nesting structures (ANS) to support kittiwake colonies.

Among these measures, closure of sandeel and sprat fishing close to breeding area SPAs or throughout UK waters and construction of ANS to support kittiwake colonies were considered highly likely to be effective with a high confidence in the assessment based on evidence. However, there was a lack of evidence for the other measures at that time. Furness (2021) presented additional evidence on closure of sandeel and sprat fisheries in UK waters, provision of ANS for new kittiwake colonies and evidence relating to impacts of predators on breeding kittiwakes. There was a good deal of evidence that closure of sandeel fisheries in the North Sea would have very important benefits for kittiwake populations in general. Artificial structures have been shown to benefit kittiwakes where natural habitats are limiting, including offshore, where productivity is likely to be higher than at coastal colonies. This is likely due to the proximity to foraging areas. Finally, the evidence that previous predator eradications (particularly rat eradications) have resulted in benefit to kittiwakes was weak, due to the preferred habitat for nesting kittiwakes being inaccessible to most predators. Furness (2021) noted that there may be instances where predator eradication may benefit kittiwake in accessible areas, but these instances are likely to be rare.

Other measures considered by Pizzolla *et al*. (2024) for which moderate or strong evidence of benefit to kittiwake is available were:

- Avian predator control;
- Reduced anthropogenic disturbance at colonies;
- Supplementary feeding; and
- Biosecurity.

Avian predators such as great black-backed gull and great skua are often themselves of conservation value and evidence suggests that it is a small proportion of the population that have become specialised in seabird predation (Votier *et al*. 2004), making avian predation difficult to effectively control. Given the cliff nesting habit of kittiwake, the number of colonies at which visitor access is possible is limited. Pizzolla *et al*. (2024) highlighted that restricting visitor access at such sites has potential to conflict with the benefits of increased public engagement, and that the impact of such measures can be difficult to quantify. However, Allbrook and Quinn (2020) found that in some instances measures such as information boards and signage may be useful in reducing disturbance caused by visitor presence at seabird colonies. Evidence suggests that supplementary feeding of kittiwake can be beneficial (Gill and Hatch, 2002; White *et al*., 2010), however this would require a significant amount of effort in the long-term and may result in greater effects of disturbance to the colony. Pizzolla *et al*. (2024) considered biosecurity measures to have strong evidence of benefit for seabird species, however these measures are concerned with minimising the threat posed by invasive species that could have harmful impacts on seabird colonies and are therefore often associated with an invasive species control programme rather than a standalone measure.

3.1.3 Puffin

Furness *et al*. (2013) identified three potential compensation measures that could benefit puffin populations:

- Closure of sandeel and sprat fishing close to breeding area SPAs or in all UK waters;
- Eradication of rats; and
- Prevent risk of major oil spills near to SPAs.

It was recognised that strong efforts have been made to prevent oil spills and the extensive nonbreeding distribution of puffins across the North Atlantic made this measure less appropriate for this species – so this is unlikely to be a practical option. While there was strong evidence that closure of sandeel and sprat fisheries would benefit related seabird species, there was a lack of evidence in this regard specifically for puffin. At the time of the 2013 review, there was a lack of clear evidence that this species would benefit from eradication of rats, but there was a high level of evidence for similar species and it was considered as a cost-effective, feasible measures in locations where invasive mammal predators were present. Furness (2021) presented additional evidence on closure of sandeel and sprat fisheries in UK waters and eradication of rats and other invasive mammal predators. There was a good deal of new evidence presented by Furness (2021) to show the benefits of closure of sandeel fisheries on puffin populations. Furness (2021) points out recent analyses of rat removal from Lundy having a positive effect of the puffin populations. Rat removal from Canna also showed a positive effect through

colonisation of parts of the island previously accessible to rats. Eradication of rats from Ailsa Craig has also resulted in puffins recolonising the island.

Further compensation measures identified by Pizzolla *et al*. (2024) as having moderate or strong evidence of success for puffin were:

- Avian predator control;
- Supplementary feeding;
- Management of supporting habitat; and
- Biosecurity

As mentioned above avian predators such as great black-backed gull and great skua are often themselves of conservation value and evidence suggests that it is only a small proportion of the population that have become specialised in seabird predation (Votier *et al*. 2004), making avian predation difficult to effectively control. Evidence suggests that supplementary feeding of puffin can in some instances be beneficial (Fitzsimmons *et al*. 2017), however this would require a significant amount of effort in the long-term and may result in greater effects of disturbance to the colony. Management of supporting habitat has been shown to be beneficial to puffins in the Forth Islands SPA where invasive tree mallow was restricting access to puffin burrows. Pizzolla *et al*. (2024) considered biosecurity measures to have strong evidence of benefit for seabird species, however these measures are concerned with minimising the threat posed by invasive species that could have harmful impacts on seabird colonies and are therefore often associated with an invasive species control programme rather than a standalone measure.

3.1.4 Gannet

Furness *et al*. (2013) identified three potential compensation measures that could benefit gannet populations:

- End harvest of chicks;
- Encourage establishment of new colonies; and
- Reduce bycatch in fisheries.

Of these potential measures, only ending the harvest of chicks was considered highly likely to be effective. However, there is only one licenced harvest of gannet chicks in the UK, at Sula Sgeir, and revocation of this licence is unlikely to be acceptable for cultural reasons. Furness (2021) presented further evidence of the potential for reduced fisheries bycatch to benefit gannet populations. However, it was noted that, although there is some bycatch of gannet in UK waters, the effect was likely to be relatively small compared to bycatch occurring outside UK waters, where the UK populations spend the winter months.

Further compensation measures considered by Pizzolla *et al*. (2024) as having moderate or strong evidence of benefit to gannet were:

- Biosecurity;
- Reduced disturbance at colonies;
- Marine litter removal; and
- Reduced illegal harvesting.

While there is some evidence of visitor disturbance causing chick mortality at Bass Rock, it was acknowledged by Pizzolla *et al.* (2024) that there are very few gannet colonies in the UK where visitor access is possible. However, Allbrook and Quinn (2020) found that, where disturbance is a problem, measures such as information boards and signage may be useful in reducing disturbance caused by visitor presence at gannet colonies. Illegal harvesting of gannets occurs outside the UK, with high levels in west African waters, beyond the ability of UK developers or regulators to implement. Pizzolla *et al*. (2024) present evidence that gannets are impacted by marine litter through entanglement, however it is also noted that the scale of marine litter removal required to have any noticeable impact would be large, and the benefit would be difficult to quantify. Biosecurity measures, as identified by Pizzolla *et al.* (2024) as having strong evidence of benefit, are related to minimising the threat posed by invasive species that could have harmful impacts on seabird colonies and are therefore often associated with an invasive species control programme rather than a standalone measure.

3.2 Potential compensation measures available to the Project

Among the potential measures reviewed by Furness *et al*. (2013), Furness (2021) and Pizzolla *et al*. (2024) several are considered to be unavailable or unsuitable in relation to the West Orkney Windfarm.

While closure of sandeel or sprat fisheries in the North Sea is likely to provide sufficient benefit as compensation, this is beyond the ability of the Applicant to deliver and is considered to be best delivered as a strategic level measure. The closure of the commercial sandeel fishery within all Scottish waters and the English waters of the North Sea was announced by the Scottish and UK Governments in January 2024 and came into force in March 2024 (although the closure is currently being challenged by the European Commission).

Avian predator control is evidenced as potentially benefiting kittiwake and puffin, however, the protected status of many avian predators, combined with the fact that most predation is often due to only a small proportion of the population (Votier *et al*., 2004), make this a difficult measure to implement effectively and it has therefore been discounted as suitable compensation for the Project.

Supplementary feeding has the potential to compensate for small numbers of some of the target species, with Pizzolla *et al*. (2024) considering there to be moderate evidence for success with kittiwake and puffin. However, the practicalities of supplementary feeding, especially for cliff-nesting species not on artificial nesting sites, and the resulting disturbance to the colony make this an undesirable measure and as such it has been discounted.

Bycatch mitigation was considered by Pizzolla *et al*. (2024) as a possible compensation measure for guillemot. However, data presented in Northridge *et al*. (2020) indicate that bycatch of guillemots is not common in the north of Scotland, suggesting that this is unlikely to provide the compensation required. To date, efforts to develop effective bycatch reduction measures for the set net fisheries, where bycatch of auks is most prevalent, have had limited success. Bycatch of gannets is recorded predominantly in the longline fishery, which is relatively limited in UK waters and already incorporates a number of voluntary mitigation measures, such as bird scarers and setting at night (Kingston *et al*., 2023). Therefore, bycatch reduction was discounted as potential compensation for the project.

The construction of ANS for kittiwakes is considered disproportionate to the potential impact of the Project on kittiwake.

Although habitat management was identified as a potentially suitable measure for puffin, in relation to tree mallow removal, this is a very specific situation, known to be an issue only in this location and which is already proposed as compensation by another developer. The Applicant is unaware of any other similar situations where habitat management is likely to provide suitable compensation.

Eradication of terrestrial predators from seabird colonies was considered as the measure most likely to provide effective compensation for the impacts of the Project upon guillemot and kittiwake (and puffin, on a without prejudice basis).

There is evidence that reduced anthropogenic disturbance at colonies could provide compensation for guillemot, kittiwake and gannet however, anthropogenic disturbance at colonies with connectivity to the Project is either unlikely to be having a significant effect due to the remote location (e.g. Sule Skerry and Sule Stack) or is potentially in conflict with the management objectives of sites, such as RSPB reserves, where public access is important. Measures such as information boards and signage may be useful but any benefit difficult to quantify. However, as predator eradication is unlikely to provide compensation for gannet, disturbance reduction is considered as the most suitable measure for this species and is discussed without prejudice in section 5.

3.3 Strategic compensation

The Applicant is aware of the proposed development of strategic compensation measures to be delivered through strategic funding options, such as Marine Recovery Fund, for offshore wind developers. At the time of writing no strategic funding options have been established and this is therefore not available to immediately deliver compensation for the Project. However, based on Government statements, it is anticipated that this option will become available prior to operation of the Project in 2029 and therefore it will remain under consideration.

4. Proposed Compensation Measure

4.1 Introduction

In light of the conclusions of the Applicant's RIAA and RIAA Addendum the proposed compensation measure is targeted towards compensating for impacts on guillemot from the Sule Skerry and Sule Stack SPA, and kittiwake from the East Caithness Cliffs SPA and North Caithness Cliffs SPA. Evidence is also discussed in relation to species and sites that the Applicant is taking into consideration without prejudice.

4.2 Predator eradication/exclusion

4.2.1 Evidence

Globally, predator eradication is a commonly used conservation measure to protect native flora and fauna from the detrimental impacts of invasive species, primarily on islands where native species have evolved in the absence of predators.

Predator eradications have been undertaken on several islands in the UK, including:

- Ailsa Craig, Scotland;
- Calf of Man, Isle of Man;
- Canna, Hebrides;
- Handa, Sutherland;
- Lundy, Wales;
- Puffin Island, Wales; and
- Ramsey Island, Wales.

The following sections present the available information on the response of the relevant seabird species to these previous eradications. Guillemot, kittiwake and gannet have generally not been the target species of such conservation efforts, and therefore the project specific pre- and post-implementation data is relatively limited for these species.

For islands where invasive terrestrial predator eradication has been attempted in the past, and there are available seabird colony counts from the Seabird Monitoring Programme (SMP) database both before and after the eradication date, these are discussed. These data provide further information on the potential for eradication of invasive mammalian predators as a suitable compensation measure for the Project.

4.2.1.1 Eradication of rats

Rats have been implicated worldwide in the extinction and endangerment of seabird populations (Jones *et al.,* 2008, Towns *et al*., 2006). Seabird colonies are generally found in remote or island locations as an adaptation to avoid predation. However, with the expansion of human habitation and the introduction of rats to these isolated locations, seabirds have come under pressure from these invasive predators. Rats are known to predate seabird eggs and chicks, and even adults of some of the smaller species.

Since the 1960's, over 800 rat eradication attempts have been made on more than 650 islands globally and around 88% of these eradications have been successful (Pennisi, 2024).

Guillemot

Response of guillemot populations to predator eradication in the UK appears to be variable across different locations.

Rats were eradicated from the Calf of Man in 2012. Prior to this the population of Guillemot fluctuated, with 674 individuals recorded in 1999 declining to less than 100 in 2001, 2002 and 2009. Following eradication the population showed an immediate increase but then subsequently decreased to just 25 individuals in 2015. Since then, the population has shown a general increasing trend.

Rats were eradicated from Canna, in the Inner Hebrides, in 2005. JNCC monitoring in the years preceding the eradication shows that the guillemot population was in decline from a peak of 1,249 nests in 2001 and continued to decline until a low of 291 nests in 2010. After this the population increased slightly and has remained relatively stable at between 375 and 475

nests and showing some increase to a count of 602 nests in 2019 (Swann *et al*., 2016a; Swann *et al*., 2019 cited in GoBe Consultants Ltd., 2021).

Following eradication of rats from Handa in 1997 guillemot numbers declined, and only began increasing slightly after the count in 2007. Approximately 10 years after eradication rats were again recorded on Handa, although it is not clear whether this was due to a re-invasion or a failed eradication. Therefore, the results from Handa are not necessarily a good example of response to eradication. No suitable counts could be found in the SMP database for comparisons with the counts from Handa. In addition to colony counts, productivity counts were available for guillemots on Handa before and after rat eradication. Productivity remained largely the same as before and immediately after eradication, but dropped sharply between 2006 and 2008, before recovering back to previous levels.

Rats were eradicated from Lundy in 2003. Prior to eradication the guillemot population did not vary much. Following eradication, the population has grown strongly, and this is likely due to the removal of rats.

Rats were removed from Puffin Island, Gwynedd, in 1998. Guillemots had been increasing prior to rat eradication and have increased steadily since. At the nearby colony of Great Orme, where rats are potentially present, as this is a mainland site, the population has also increased, albeit more slowly. At the Little Orme colony there has been variation in the guillemot population, but no increasing trend as seen at Great Orme or Puffin Island. This suggests that removal of rats has allowed the Puffin Island colony to increase at a greater rate in the absence of rats.

Rats were eradicated from Ramsey Island, Wales in 1998. Prior to eradication guillemot numbers were steadily increasing and continued to do so following eradication. However, this was also the case for the guillemot colonies on nearby Skomer and Skokholm, where there has been a steady increase across the same time period, despite a lack of rats on Skomer. This suggests that the population increase may not be fully attributable to the eradication, however it is possible that the rate of increase may have been improved by the absence of rats.

In summary, colony counts from Lundy, Puffin Island and Ramsey Island indicate that increases in the guillemot populations can occur following removal of rats. In Lundy, this has been attributed to the ability of guillemots to spread to habitats that were accessible to rats (Furness, 2021). However, guillemot population trends on the other islands subject to rat eradication are more variable suggesting that there are other, stronger pressures on these populations, and any benefits of rat eradication may be less noticeable, at least in the short term.

Kittiwake

Furness *et al*. (2013) identified only a single published report investigating predation of a kittiwake nest by a rat. Evidence of benefit to kittiwake from islands where rats have been eradicated was concluded by Furness (2021) to be weak. The available information on change in population size of breeding kittiwake colonies in the UK following eradication of rats is summarised in the following section for each island where data was available both before and after rat eradication.

Rats were eradicated from the Calf of Man in 2012. Despite a long series of colony counts from the Calf of Man prior to rat eradication there was only a single year with any counts following eradication, in 2013. By this point there were very few breeding kittiwakes left on the Calf of Man with three pairs counted in 2012 and 13 in 2013. JNCC reported that the colony had been extirpated by 2017 (JNCC, 2021).

Rats were eradicated from Canna in 2005. The kittiwake colony on Canna has been generally increasing across the span of available data (1986 – 2023). Kittiwake numbers were increasing prior to rat eradication and appeared to decrease quickly around the time that rats were eradicated from the island, followed by a continued increase. Record numbers were recorded in 2019 (Goodwin, 2020) and have remained high in the subsequent years.

Following eradication of rats from Handa in 1997 kittiwake numbers declined, and only increased after the count in 2009 and continuing to increase in subsequent years. In addition to colony counts, productivity counts were available for kittiwakes on Handa before and after rat eradication. Productivity began to decline after eradication, but dropped sharply between 2006 and 2008, before recovering back to previous levels. Approximately 10 years after eradication, rats were again recorded on Handa, although it is not clear whether this was due to a re-invasion or a failed eradication. Therefore, the results from Handa are not necessarily a good example of response to eradication.

Rats were eradicated from Lundy in 2003. Prior to eradication, the kittiwake population had been declining for a number of years. Following eradication, the decline slowed, and the last three colony counts (in 2017, 2021 and 2023) have shown small increases.

Rats were removed from Puffin Island, Gwynedd, in 1998. Kittiwakes had been increasing prior to rat eradication but while counts have shown considerable variation the general trend has been declining steadily since the year following eradication.

However, the general decline in kittiwake abundance has also occurred on the nearby mainland colony of Great Orme and Little Orme, where rats are potentially present.

Rats were eradicated from Ramsey Island in 1998. Following eradication, kittiwake numbers have declined steadily, albeit with a slight increase around 2010. However, this was also the case for the kittiwake colony on nearby Skomer, where there has been a steady decline since the early 2000's despite a lack of rats on Skomer.

The previous reviews (Furness *et al*., 2013; Furness, 2021; Pizzolla *et al.* 2024) and the information above indicate that there is limited evidence that rat predation is exerting significant pressure on kittiwake populations, and therefore rat eradication does not result in an immediate, noticeable population level benefit. It is apparent from the data above that most kittiwake colonies have been in decline over the time spans around the times of most rat eradications, a trend that was reflected nationally (JNCC, 2021), so there are likely stronger drivers of population change than the effects of rats on kittiwake colonies. However, it is evident that in general where rats are present they do predate seabirds in accessible locations. Therefore, while kittiwake colonies do not demonstrate significant increases as a result of rat eradication, it is likely that the presence of rats will have impacts on kittiwake that attempt to nest in areas that are accessible to rats. At both Canna and Lundy, kittiwakes have increased following rat eradication which may reflect some benefit from the absence of rats.

While Furness *et al*. (2013) listed the "evidence of success" of rat eradication as "unknown" for kittiwake, the authors did note that the "evidence for similar species" was "high".

Puffin

Furness (2021) noted that there was "clear evidence that eradication of rats can be highly beneficial for puffin populations".

The available information on change in population size of breeding puffin colonies in the UK following eradication of rats is summarised in the following paragraphs for each island where SMP data exists both before and after rat eradication.

Puffins were extirpated from Ailsa Craig in the mid 20th century due to the presence of rats on the island (Zonfrillo, 1997). The species has re-colonised the island since rats were successfully eradicated in 1991. No SMP count data for puffins on Ailsa Craig are available prior to 2001.

The only puffin counts from the Calf of Man were between 1986 and 1990 and the population was small (4 – 56 AON). Puffins were extirpated from the island at some point prior to rat eradication in 2012. There were indications that puffins may be returning to the island in 2021 as a result of a project to attract puffins back to the island using decoys and colony sound playback (Manx National Heritage, 2021).

Rats were eradicated from Canna in 2005. Despite few counts, it appears that puffin numbers have increased, as corroborated by JNCC monitoring which stated in 2016 "*This species tends to nest on off shore stacks or inaccessible grassy slopes on steep cliffs and is therefore difficult to monitor on Canna. Through visual observations there has, however, been a notable apparent increase in numbers at Geugasgor, following the rat eradication in winter 2005/06 and 2015 was no exception*" (Swann *et al.* 2016b) and the National Trust for Scotland who stated that puffins have reached record numbers (Goodwin, 2020).

Following eradication of rats from Handa in 1997, puffin numbers initially increased and then declined, remaining low until a sudden increase in 2020. Approximately 10 years after eradication, rats were again recorded on Handa and since then efforts to control the rat population have been ongoing. Therefore, the results from Handa are not necessarily a good example of response to eradication as effort and method of predator control in the years since rediscovery is unknown. No suitable comparative counts could be found in the SMP database for comparisons with the counts from Handa.

Rats were eradicated from Lundy in 2003. Prior to eradication, the puffin population was small and had been in decline. Following eradication, the population has grown strongly.

Rats were eradicated from Ramsey Island in 1998. There were only two counts of apparently occupied burrows (AOB) available for Ramsey Island before and after eradication, with additional post eradication counts given as a count of individuals (IND). While this shows an increase in puffins on the island numbers are small and the species is generally still considered to be absent from the island as a breeding species, despite the efforts to attract them.

Rats were removed from Puffin Island, Gwynedd, in 1998. What was an already small puffin population declined almost to extirpation between 1990 and 1999, when only one pair was recorded. In the years following eradication the population recovered, albeit not to pre-eradication numbers and the most recent counts in 2022 and 2024 show the population to have declined to fewer than 10 individuals. Numbers of puffins on the island were relatively small before eradication (about 40 birds) and remain relatively small.

In summary, based on the conclusions of Furness (2021) there is good evidence from Lundy, Canna and Ailsa Craig that removal of rats can result in puffin populations increasing partly due to predation and partly due to spreading to habitats that rats can access. Evidence from Ramsey Island and Puffin Island is less clear but this may be partially attributable to the small colony sizes at these locations.

Gannet

There are no examples of how predator eradication affects gannet colonies. It is generally considered that gannet nest in areas inaccessible to most mammalian predators.

Other species

While the evidence for benefits of rat eradication on guillemot, kittiwake and puffin is variable, these species have often not been the target species of the projects to date and as a result there is in several cases relatively limited data on which to base an assessment.

In general, rat eradication projects report positive trends for seabird colonies. For example, following rat eradication from St Agnes and Gugh in the Isles of Scilly, recolonisation and breeding has been reported for Manx shearwater (*Puffinus puffinus*) and storm petrels (*Hydrobates pelagicus*) along with '*incredible increases in other seabirds*' (RSPB England, 2021). On Canna, the eradication of rats was followed by a doubling of the number of European shags (*Gulosus aristotelis*) to compliment the record number of puffins and kittiwake (Goodwin, 2020). Similarly, in the 16 years following the eradication of rats from Ramsey Island, the population of Manx shearwater increased by five times and storm petrels bred on the island for the first time on record (Bell *et al*. 2019).

Following the eradication of rats on Lundy, almost all seabirds (fulmar (*Fulmaris glacialis*), kittiwake, guillemot, razorbill, puffin, Storm petrel, Manx shearwater and shag) have seen increased breeding populations (Davis and Jones, 2024).

On Ailsa Craig, following rat eradication gull fledgling success showed a significant improvement and fulmar fledglings improved from 100% failure to 100% success. A number of other species have been recorded either recolonising or on the island for the first time. These include black guillemot, Manx shearwater, European shags and razorbill (Zonfrillo, 2001).

4.2.1.2 Eradication of feral cats

Although there are no examples of feral cat eradication for the conservation of seabirds in the UK, globally feral cats have been eradicated from numerous islands to the benefit of native seabirds. For example, eradication of feral cats from Ascension Island in 2004 resulted in the recolonisation of cat-accessible areas of the island by at least five species of seabird (Ratcliffe *et al.*, 2009).

Nogales *et al*. (2004), Campbell *et al*. (2011) and Parkes *et al.* (2014) provide useful summaries of eradication information and data from 83 islands where eradication of feral cats has been carried out. The majority of these projects were in the southern hemisphere or the tropics, although a few were in the North Atlantic: the Canary Isles and Madeira. These reviews show that successful cat eradications generally utilise more than one eradication method, with increasing utilisation of live trapping in more recent years. While Parkes *et al*. (2014) indicate that it can take 5 years for a successful eradication, this is relevant only to full eradication of islands larger than 2000ha, and many of the eradications listed in Nogales *et al*. (2004) were undertaken in a single year.

Furness *et al*. (2013) noted that eradication of feral cats can be more complex than eradication of rats, especially where there is a resident human population with pet cats, as experienced on Ascension Island where a significant number of domestic cats were killed (Ratcliffe *et al*. 2009). In these situations, there is increased necessity for community engagement and implementation of micro-chipping and registration of domestic cats prior to any eradication activity along with careful consideration of the application of poison baits.

Furness *et al*. (2013) point out that, "feral cats … act as 'super predators' the removal of their populations from islands should be especially targeted as it is likely to have a greater benefit than removal of rats alone."

4.2.1.3 Multi-species eradication

In addition to the eradication of only feral cats, or only rats, there is good evidence from studies outside the UK that eradication of multiple invasive alien vertebrates can have important benefits. There are two important elements to multiple species eradications. Firstly, eradicating rats from islands where feral cats are also present could result in an increased predation pressure from cats, as they no longer have rats to forage on. Secondly, eradicating cats from islands where rats are also present could release the rat population from predation pressure from cats (e.g. Rayner *et al*. 2007) increasing predation on seabirds or their offspring. Thus, where both species are present, eradicating both species is important to increasing seabird populations.

4.2.1.4 Predator exclusion

Predator exclusion is an alternative to eradication, where predators can be prevented from accessing particularly sensitive sites in locations where full eradication is unlikely to be effective.

Predator-proof fencing has been used globally to control a wide range of invasive mammals including rats, feral cats, mink, foxes, hedgehogs, rabbits and other mammals (see reviews by Cooper, 2013 and Furness, 2013). In Hawai'i predator-proof fencing has been used at several sites to implement successful multi-species predator exclusions (Pacific Rim Conservation, 2024). Sites include Nihuko at Kilauena Point, where non-native predators, including cats, dogs, rats and mice were excluded in 2014/2015 and, following a translocation programme, Hawaiian petrel and Newell's shearwater have started to return and breed. Predator-proof fences were also deployed very effectively at Ka'ena Point Natural Area Reserve to protect vulnerable populations of wildlife. Fences were set up in 2010 to 2011 around 20 ha of coastal habitat within Ka'ena Point to prevent predators (including dogs, cats, mongooses, rats and mice) from entering the protected area. Predators were eradicated within the enclosed 20 ha – it took three months to complete for all predators except mice, which were eradicated within an additional six months. Subsequently, record numbers of wedge-tailed shearwaters and Laysan albatrosses fledged chicks (Young *et al*., 2012). Population increases of the red-tailed tropicbird was also recorded in the same area (Vanderwerf and Young, 2014).

In New Zealand, predator-proof fences have been in use since the 1990s – 2000s, to protect native wildlife from invasive mammalian predators in a number of locations (Burns *et al*., 2012). These locations include areas such as the Zealandia sanctuary in Wellington, an area of 225 ha enclosed by 8.6 km of fencing specifically developed, following trials, to exclude all mammalian predators, including possums, feral cats, Norway rats, stoats and mice. The fence was installed in 1999 and to date has proven highly effective at excluding all mammalian predators with the exception of mice (Zealandia, undated). There are also several fenced peninsulas such as the Tāwharanui Open Sanctuary near Aukland, where a 2.5 km predator-proof fence was erected in 2004 to enclose a 588 ha site. Combined with measures to re-introduce or encourage many native species, the Tāwharanui project has resulted in the return of burrow nesting seabird species, including grey faced and common diving petrels (Predator Free New Zealand, 2017). Although peninsula fences generally have greater incursion risks due to gaps at the coastal ends, such projects report low levels of incursion that are manageable and do not appear to negate the positive effects on the native species.

In the UK, predator-proof fences have been mostly targeted towards larger pest species. White and Hirons (2019) provides guidance for the use of predator-proof fencing to protect ground-nesting birds at RSPB reserves and states that 'predator exclusion fences can be very effective at reducing predation by large, generalist mammalian predators, if they are specified, installed and maintained correctly'. Predator-proof fencing has recently been used as a compensation measure to protect lesser black-backed gulls from the Alde-Ore Estuary SPA impacted by the development of the Norfolk Boreas and Norfolk Vanguard offshore wind farm projects (MacArthur Green and Royal Haskoning DHV, 2022).

4.2.1.5 Conclusions

While there may be mixed evidence for the eradication of rats and feral cats having a benefit to the particular species requiring compensation, when the additional evidence from other studies around the world is included, it is clear that eradication of these predatory species from islands where seabirds breed has generally led to increases in seabird populations. The mixed evidence from the studies in the UK is potentially due to other drivers of demographic change, particularly food availability. These strong effects may mask any potential benefit from predator eradication. There are no examples of seabird colonies in the UK where the pressure from both rats and feral cats has been removed, although examples from elsewhere in the world suggest that greater population responses from seabirds are likely.

It is important to note that the aim of compensation is to maintain the coherence of the UK SPA network. Where seabird colonies are declining due to a lack of food for adults and chicks, colonies may continue to decline even when predators are removed. However, removal of predators from seabird colonies could result in fewer adults or chicks being killed, thus increasing the resilience of seabird colonies facing declines due to other pressures, or allowing more rapid colony growth should other population pressures be relieved, through for instance closure of the sandeel fishery.

The evidence of benefits from predator eradication for kittiwake is weak. However, the Applicant considers that the impacts of the Project on this species is extremely limited and the options available for compensation of this species are either unavailable or entirely disproportionate. Therefore, although the evidence for large-scale benefit from predator eradication is weak for this species, given the low level of impact, we propose that this could provide benefit and therefore could count towards compensation for kittiwake.

This measure would therefore address effects upon guillemot, kittiwake and puffin (on a without prejudice basis), but would not directly provide compensation for gannet. Additional disturbance reduction measures are presented, without prejudice, in section 5, should compensation for gannet be required. Alternative measures including the Orkney Native Wildlife Project

(see section 6.3) and the option of contribution to a Marine Recovery Fund (see section 6.2**Error! Reference source not found.**) are also considered should the proposed measures not provide sufficient compensation.

4.2.2 Location

European Commission guidance[1] on compensation measures states that, "Compensatory measures should be located to accomplish the highest effectiveness in maintaining the overall coherence of the Natura 2000 network". Consequently, three levels of hierarchy of preferred locations are given as:

- Compensation within the Natura 2000 site;
- Compensation outside the Natura 2000 site concerned, but within a common topographical or landscape unit; and
- Compensation outside the Natura 2000 site, in a different topographical or landscape unit.

Therefore, consideration was first given to the three SPAs for which the RIAA could not exclude AEoSI (East Caithness Cliffs SPA, North Caithness Cliffs SPA and Sule Skerry and Sule Stack SPA).

Site selection for implementation of the predator exclusion compensation measure followed a methodical approach with initial short listing based upon the following factors:

- Are the target species present either currently or historically?
- Are mammalian predators present?
- Are there any known constraints or reasons why the compensation measure will not be feasible?

Based on an initial review of the three potentially affected SPAs, none were determined to be suitable for the implementation of predator exclusion or eradication measures (Table 4-1). For Sule Skerry and Sule Stack SPA, this is primarily due to a lack of mammalian predators in the SPA. For the North Caithness Cliffs SPA and East Caithness Cliffs SPA, accessibility of the sites to the public is considered to represent a significant constraint due to the likely negative perception of the fencing and eradication. Additionally, the greatest effect from the Project is predicted to be on guillemot from the Sule Skerry and Sule Stack SPA and it is considered that there are likely to be sites suitable for compensation of guillemot that are closer to this SPA than the East Caithness Cliffs.

Table 4-1 Review of SPAs in context of compensation potential (GU=guillemot, KI=kittiwake, PU=puffin, GX=gannet)

Location	Target Species Present	Mammalian Predators Present[1]	Known Constraints
Sule Skerry and Sule Stack SPA	GU, KI, PU, GX	No	Logistics
North Caithness Cliffs SPA	GU, KI, PU	Otter, brown rat, stoat, weasel, hedgehog	Public access, negative perception. The island of Stroma is less accessible but there are few mammalian predators (Johnson *et al.*, 2019)
East Caithness Cliffs SPA	KI, GU, PU	Badger, otter, weasel, fox, pine marten, polecat	Vertical cliffs (inaccessible to predators), public access, negative perception

1. Records from NBN Atlas (excluding CC-BY-NC)

After determining that the implementation of compensation within the affected SPAs was not appropriate, a review was undertaken of the island prioritisation work undertaken by Stanbury *et al*. (2017) to determine if there was a suitable site

[1] https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/new_guidance_art6_4_en.pdf

within the second level of the hierarchy, i.e. outside the Natura 2000 site concerned, but within a common topographical or landscape unit. Stanbury *et al*. (2017) reviewed and prioritised offshore islands in the UK with invasive alien vertebrates, ranking these islands based on a set of criteria that included potential and realistic conservation value, natural reinvasion risk and the eradication benefit. Of the 25 priority islands identified, eight were located in the Orkney Islands. These sites are detailed in Table 4-2.

Table 4-2 Review of priority islands in Orkney in context of compensation potential (GU=guillemot, KI=kittiwake, PU=puffin, GX=gannet)

Location	Island Area (ha)	Resident Population	Target Species Present	Mammalian Predators Present[1]	Known Constraints
Westray	4742	588	GU, KI, PU, GX	Feral cat	n/a
Rousay	4697	216	GU, KI, PU	Feral cat, brown rat	n/a
Papa Westray	858	90	GU, KI, PU	Unknown	n/a
Hoy	14,360	419	GU, KI, PU	Feral cat, brown rat	n/a
Flotta	938	80	GU, PU	Feral cat, brown rat	n/a
Stronsay	3362	349	GU, KI, PU	Feral cat, brown rat	n/a
Gairsay	270	3	No	Feral cat, brown rat	n/a
North Ronaldsay	766	72	No	Feral cat	n/a

Among these islands, neither Gairsay nor North Ronaldsay have records of the relevant species and Flotta has no records of kittiwake. It is not confirmed that Papa Westray has invasive mammalian predators (Stanbury *et al*. 2017). Among the remaining four islands brown rats and/or feral cats are present and the relevant seabird species potentially requiring compensation are (or have been) present, according to the SMP database. Data from the seabird census (JNCC, 2023) for each of these four islands was reviewed to obtain an indication of colony sizes and identify the potential of each island to provide the required compensation for the target species.

Table 4-3 Summarised seabird census data (JNCC, 2023) for the short-listed islands (counts for kittiwake, puffin and gannet are apparently occupied nests/burrows, counts for guillemot are individuals)

Island	Species	Number of Counts 2000	Count Range 2000	Number of Counts 2020	Count Range 2020
Rousay	Kittiwake	7	17 – 2,238	10	6 - 232
	Guillemot	7	42 – 4,580	9	5 – 2,800
	Puffin	7	4 – 12	10	1 - 45
Hoy	Kittiwake	7	4 – 397	7	0 - 228
	Guillemot	12	9 – 9,385	12	0 – 5,901

	Puffin	0	n/a	12	0 - 178
Stronsay	Kittiwake	0	n/a	3	4 - 94
	Guillemot	0	n/a	2	10 - 741
	Puffin	0	n/a	1	1
Westray	Kittiwake	6	103 – 17,546	4	12 – 1,822
	Guillemot	7	12 – 37,390	4	76 – 22,930
	Puffin	5	19 - 188	7	1 - 1,534
	Gannet	1	14	1	1,384

The seabird census data show that Westray, Rousay and Hoy all have large colonies of guillemot and kittiwake and have seen declines that would suggest there is sufficient available habitat for the required compensation. Fewer counts are available for puffin, however the species is present on these islands. While Stronsay also has colonies of three target species, the colonies appear to be significantly smaller and there is no previous data to determine whether there have been declines (and therefore potentially available habitat). While Stanbury *et al*. (2017) ranked Westray above Rousay, the Applicant considers Rousay to be a more suitable candidate to benefit from predator exclusion/removal due to the presence of both feral cats and rats, as opposed to Westray which is thought to have only feral cats and is therefore considered the least suitable of the short-listed sites.

Thus, the short-listed islands for compensation through removal of brown rats and cats from seabird colonies, in order of preference, are:

- Rousay;
- Hoy;
- Stronsay; and
- Westray.

Given the presence of human populations and agriculture on all of these short-listed islands, predator-proof fencing would be the solution to increase both the likelihood of eradicating predators from seabird colonies and preventing predators from re-invading the islands. Where agriculture is present, the likelihood of rat re-invasion would likely be high through imports of hay or grain. Where there is a human population, there is a high likelihood of pet and farm cats being present and these would represent a predation risk and a source of future feral cat populations on the island. However, exclusion using predator-proof fences would allow areas that do not include agricultural or human inhabited areas to be fenced, and predators removed. Thus, the likelihood of eradication success and maintenance of predator free status on the protected colonies would be much higher.

Desk-based assessment has identified several colonies on the west coast of Rousay that have the potential to provide the required compensation, based on SMP monitoring data. The identification of specific colonies where predator exclusion is most likely to achieve the required compensation will be further informed by site visits, detailed in the Compensation Implementation and Monitoring Plan, which will look to confirm the accessibility of colonies to predators and the availability of suitable habitat for the target species.

4.2.3 Scale

The Applicant considers that, following confirmation of seabird predation on Rousay, the colonies are of sufficient size to provide the scale of compensation required. SMP count data (JNCC, 2023) indicates that in a single colony there may be up to 2,000 available nesting spaces for both guillemot and kittiwake, which would be more than sufficient to compensate for

the impacts on these species. Given the relatively small population counts of puffin at the colonies it may be necessary to implement measures at more than one colony to obtain the required increase in nesting pairs. However, as a burrow nesting species, puffin are highly susceptible to predation by mammals and therefore are likely to experience the greatest benefit, provided that suitable habitat is available.

4.2.4 Delivery

In the absence of a strategic compensation mechanism, the Applicant proposes to deliver the required compensation independently. However, the potential collaboration with other offshore windfarm developers will be considered should the opportunity arise.

Should consent for the project be granted, an offshore ornithology compensation steering group will be convened by OWPL. This group will help steer the delivery of any compensation measure implementation and maintenance, monitoring, reporting and any other relevant matters as determined by OWPL. It is envisaged that core members of the steering group will be the relevant Statutory Nature Conservation Bodies (SNCBs) and MD-LOT, as well as the local planning authority and owners and/or managers of the site(s) at which predator fencing is planned to be implemented. The RSPB and other relevant parties will also be invited to form part of the steering group in an advisory capacity.

Lease of the land required to enable provision of the compensation will be secured through landowner agreements. The contract for the lease will be for the operational lifespan of the Project (~35 years) and will secure access for monitoring and maintenance.

4.2.5 Timescale

European Commission guidance suggests that compensation should be in place at the time when the impact occurs. The Applicant proposes to implement the compensation measures two years prior to operation of the West of Orkney windfarm. Further detail is provided in the Compensation Implementation and Monitoring Plan.

4.2.6 Monitoring and adaptive management

Following implementation of the proposed compensation measure the Applicant will undertake a programme of monitoring and adaptive management. These aspects will be presented in detail in the Compensation Implementation and Monitoring Plan. Two types of monitoring will be undertaken; monitoring of predators, to determine evidence of the success or exclusion/eradication and detect re-incursions, and monitoring of target seabird species will provide evidence for success of the proposed measure in providing compensation in the form of increased colony productivity. Monitoring will continue for the operational lifespan of the Project at a scale and frequency discussed with the offshore ornithology compensation steering group and approved by Scottish Ministers.

In the event that monitoring indicates that the compensation measure is not meeting the proposed objectives the cause and therefore required action will be investigated. The situation will be discussed with the offshore ornithology compensation steering group and the adaptive management measures agreed and approved by Scottish Ministers. Potential adaptative management measures could include alterations to the eradication measures (e.g. different baits or traps, increased density of traps), alterations to the fence structure, habitat management to improve suitability for target seabird species.

4.2.7 Effects on non-target species

1The Applicant has undertaken an assessment of the potential for adverse effects on non-target species as a result of the proposed predator eradication/exclusion (Appendix A2). In addition to being home to the endemic Orkney vole (*Microtus arvalis orcadensis*), the west coast of Rousay, where the majority of seabird colonies are, is designated as both a Site of Special Scientific Interest (SSSI) and a SPA.

The Rousay SSSI is designated for the following features:

- Blanket bog;
- Maritime cliff;
- Mesotrophic loch;
- Subalpine wet heath;
- Vascular plant assemblage;
- Breeding bird assemblage;
- Seabird colony (breeding);

- Arctic skua (*Stercorarius parasiticus*) (breeding);
- Guillemot (breeding);
- Kittiwake (breeding); and
- Arctic tern (*Sterna paradisaea*) (breeding).

The Rousay SPA is designated for:

- Arctic skua (breeding);
- Arctic tern (breeding);
- Fulmar (breeding);
- Guillemot (breeding);
- Kittiwake (breeding); and
- Seabird assemblage (breeding)

Appendix A2 considers the following effects that could result from the compensation and how these can be avoided:

- Unintentional poisoning of non-target species (in particular Orkney vole)
- Disturbance of breeding birds and damage of qualifying habitats and plant assemblage; and
- Alteration of the grazing regime within the fenced area

Overall, the proposed predator eradication/exclusion will not result in long-term adverse effects on non-target species and is anticipated to provide beneficial effects to the qualifying bird species. All activities related to the proposed compensation measure will require discussion with the compensation steering group, including members of the Statutory stakeholder organisations.

Potential social impacts of the proposed predator eradication/exclusion are discussed in the Addendum to the Compensation Implementation and Monitoring Plan.

5. Without Prejudice Measure

5.1 Introduction

In acknowledgement of the potential for the Scottish Ministers to conclude AEoSI for sites/features in addition to those concluded by the Applicant, without prejudice compensation has been identified in addition to the proposed compensation measure. This measure is targeted towards potential compensation required for impacts on gannet from the Forth Islands SPA. Potential compensation required for kittiwake, puffin and guillemot without prejudice to the Applicant's position on AEoSI are considered to be covered by the proposed predator eradication/exclusion, but may experience additional benefit from the without prejudice measure discussed here. The measure proposed in this section would be implemented in addition to the proposed predator eradication measure.

5.2 Disturbance reduction measures

5.2.1 Evidence

With the exception of cessation of the gannet harvest on Sula Sgeir, the various reviews of compensation measures did not identify any compensatory measures with high confidence of success for gannet. However, while many gannet colonies are relatively inaccessible to visitors, there are a few reports of impacts on gannet colonies as a result of visitor disturbance. Allbrook and Quinn (2020) reported that, on Great Saltee Island, Ireland, gannet productivity declined with proximity to the edge of the colony accessible to visitors and that bird displacement was negatively correlated with minimum visitor approach distance. It has also been reported that displacement caused by visitors results in the death of around 40 gannet chicks each year at Bass Rock (DTA Ecology, 2020).

Batey (2013) undertook a review of different management options to reduce human disturbance to coastal birds and categorised measures as:

- habitat management, i.e. habitat improvement or creation;
- access management, i.e. the reduction or prevention of access to areas within a site, path management, limiting visitor numbers or strictly controlling specific activities; and
- education and enforcement, i.e. codes of conduct, signage, leaflets, warden presence.

The review noted that it was difficult to determine effectiveness of specific measures as few measures are used in isolation and the effects of measures are generally not monitored. However, Allbrook and Quinn (2020) found that the installation of signage significantly reduced the number of visitors approaching the colony and resulted in much lower levels of disturbance to the gannets. Of particular note was that, of the visitors who chose to ignore the signage and approached to within 1m of the colony all were photographers. This suggests that providing visitors the opportunity to view and photograph the colony, without causing disturbance would be of particular value.

Disturbance reduction measures were accepted by the Scottish Ministers as appropriate compensation for the Green Volt OWF.

5.2.2 Location

There are only 21 gannet colonies in the UK, with the majority of these on Scottish offshore islands (JNCC, 2021). As mentioned above, most gannet colonies are relatively inaccessible to visitors and therefore opportunities for disturbance reduction are relatively limited. However, informal discussions with Green Volt have highlighted that the levels of disturbance at Troup Head were significant and further opportunity may exist at this location to reduce the pressures from disturbance to the breeding colonies. Therefore, the Applicant will explore opportunities at this site along with identifying other potentially suitable locations,

5.2.3 Scale

According to the SMP data (JNCC, 2023), Troup Head supports large populations of gannet, kittiwake and guillemot, along with a small population of puffins, and therefore, although this measure is proposed primarily as compensation for gannet, it has the potential to benefit all of the relevant species.

Based on the calculations in section 2.2, an additional 40 fledglings each year would be required to compensate for the annual loss of 10.4 adult gannets. This could be achieved either through increased disturbance-free nesting spaces, creating

space for an additional 58 breeding pairs, or through increased productivity. Using the 2023 Collie Head population as stated in Green Volt (2024), 1,225 breeding pairs, this would require an increase in productivity from 0.7 to 0.73. Using the Troup and Lion's Head 2023 count from the SMP, 4,376 breeding pairs, this would require an increase in productivity from 0.7 to 0.71.

5.2.4 Delivery

In order to compliment the footpath alterations and improvements proposed at Collie Head by Green Volt, the Applicant will explore the potential for construction of hide structures within the SPA to enable site visitors to view the seabirds without causing unnecessary disturbance.

If this measure is required, the Applicant proposes to deliver the measure(s) independently although consultation and agreement with other parties (site managers and landowners) will be required.

5.2.5 Timescale

Disturbance reduction measures are anticipated to result in immediate increases in productivity. The Applicant anticipates that the measure could be in place two breeding seasons prior to operation of the Project. Further detail is provided in the Compensation Implementation and Monitoring Plan.

5.2.6 Monitoring and adaptive management

A detailed monitoring programme and list of adaptive management measures will be developed when the location and delivery of the compensation measure is confirmed.

The monitoring programme will consist of pre- and post-implementation disturbance levels and productivity at the chosen location. Adaptive management is likely to include measures such as minor adaptation to hide structures, additional signage, or habitat improvements.

5.2.7 Next steps

The Applicant will further review the opportunities available at Troup Head in addition to exploring opportunities at other gannet colonies. This process will include consultation with NatureScot, RSPB and MD-LOT. Following confirmation of a suitable location for disturbance reduction measures, the Applicant will seek agreement with the landowner and any relevant permissions (i.e. planning permission, SSSI consent, etc.) and will undertake an assessment of potential impacts on non-target species.

6. Alternative Measures

6.1 Introduction

Should the proposed compensation measures prove to be not feasible, or unsuitable in the opinion of the Scottish Ministers, the Applicant has taken into consideration alternative measures that could potentially provide the required compensation. These are discussed in the following sections.

The Marine Recovery Fund and Orkney Native Wildlife Project would both be applicable to all of the relevant species.

6.2 Marine Recovery Fund

As highlighted in section 3.3, that Applicant is aware of the ongoing development, by the UK Government, of a Marine Recovery Fund.

The Energy Act 2023 provides for the establishment of a new industry-funded Marine Recovery Fund (MRF). The MRF will be used to fund strategic compensation measures for offshore wind developments, capable of providing greater benefit to the UK national site network than smaller project led compensation projects. Once established, OWF developers may have the option of making payments, proportionate to the level of compensation required, into the MRF to discharge their compensation obligations, provided that appropriate compensation measures are available for the MRF to fund.

However, secondary legislation is required for the establishment of the MRF and therefore at the time of writing, this is not available to the Applicant. Should a MRF become operational prior to implementation of the Applicant's proposed compensation measures, the Applicant will consider contribution to the fund as an alternative to the project led measures, as compensation for all species.

It is anticipated that the fund, when available, will enable OWF developers to make financial contributions proportionate to the level of compensation required to offset the impacts of their project. This fund will then be used to fund strategic compensation measures, capable of providing greater benefit to the UK national site network than smaller project led compensation projects.

Should this Marine Recovery Fund become operational prior to implementation of the Applicant's proposed compensation measures, the Applicant will consider contribution to the fund as an alternative to the project led measures, as compensation for all species.

6.3 Orkney Native Wildlife Project

6.3.1 Background

The Orkney Native Wildlife Project (ONWP) aims to safeguard Orkney's native wildlife against invasive stoats. Although stoats are native to the UK and have limited protection under the Wildlife and Countryside Act 1981, the species is not native to the Orkney Isles. Stoats were first recorded in Orkney in 2010. In the UK stoats are known to take a range of prey species, primarily small rodents and rabbits but also invertebrates and birds, often much larger than themselves (Vincent Wildlife Trust, 2020).

Following an unsuccessful removal attempt, a study was commissioned by NatureScot on the impact of stoats in Orkney (Fraser *et al*. 2015) which considered a high likelihood of stoats spreading throughout the Orkney Islands, permanently reducing the population of the native Orkney vole , with subsequent effects on birds of prey. It was also considered that due to the opportunistic nature of stoats and the lack of top down predator control, ground nesting birds were also at risk. In 2015 a feasibility study was undertaken by predator eradication specialists and concluded that eradication of stoats from Orkney was possible and should be undertaken as early as possible to have the greatest chance of success.

The ONWP, a partnership between RSPB and NatureScot (later joined by the Orkney Islands Council) was established in 2016 to undertake the eradication of stoats from the Orkney Islands. Initial short-term funding was secured to enable establishment of the project, including consultation and biosecurity, then in 2018 full funding was secured for a five-year programme, which commenced in 2019.

6.3.2 The Project

The programme comprises a network of around 8,000 humane lethal traps set across the Orkney mainland, South Ronaldsay and linked islands combined with 'response trapping' relying on public sightings and the use of stoat detection dogs.

The project necessarily also has a programme of biosecurity measures aimed at preventing the reinvasion of stoats following eradication and the spread of stoats to other islands. This currently consists of a network of biosecurity traps and monitoring stations (ink cards and camera traps) at locations where stoats are likely to spread to other islands, and the use of stoat detection dogs both on stoat free islands and at port and harbours. There is a team of trained volunteers ready to investigate any potential stoat sighting.

The ONWP has removed over 6,000 stoats from Orkney since 2019 and prevented the spread of stoats to additional islands. The first OWNP monitoring report is not expected until early 2025, however the project has reported tentative signs of recovery in the populations of ground nesting birds such as curlew and oystercatcher[2].

6.3.3 ONWP as compensation

The main prey of stoats on Orkney is the Orkney vole. However, studies have shown that stoats are opportunistic and will switch to secondary prey species when primary prey levels are low (Korpimäki *et al*. 1991). While the focus of the ONWP to date has been on the impact of stoats on the Orkney vole and ground nesting waders, there is evidence to indicate that stoats could also impact seabirds in Orkney.

Where stoats have been introduced in New Zealand, the species has resulted in a 54% decline in numbers of sooty shearwaters (*Puffinus griseus*) in less than 50 years (Jones, 2000). It has also been estimated that, at a colony of Hutton's shearwater, stoats killed an average of 0.25% of breeding adults and 12% of chicks each season (Cuthbert and Davis, 2002).

Significant numbers of stoat sightings have been reported around Marwick Head and, Brough of Birsay and Birsay Cliffs[3], an area of the island where there are large colonies of seabirds. Ground and burrow nesting species such as puffin are at the greatest risk of stoat predation, however, stoats are adept climbers, often reported to climb trees to access bird nests. Therefore, it is reasonable to presume that, where ledges are accessible, cliff nesting species, including guillemot, gannet, and kittiwake, are also at risk of stoat predation.

According to SMP count data (JNCC, 2023), prior to the invasion of stoats to Orkney, in 1999 the Brough of Birsay supported a kittiwake population of over 1,200 AON and a guillemot population of over 1,900 individuals. However, the subsequent kittiwake population counts in the years following the invasion of stoats showed a steady decline from 211 AON in 2012 to just 1 AON in the most recent count in 2018, and the 2017 guillemot count, the only count since 1999, recorded only 268 individuals. Similarly, puffin numbers, although low, have shown a decline from 29 individuals in 1999 to 11 individuals in 2016 and just 5 individuals in 2017. The Brough of Birsay is an island, connected to mainland Orkney via a 140m causeway at low tide. It is therefore reasonable to assume that the stoats on the Brough of Birsay would have quickly exhausted the small mammal prey population and moved on to predate the seabird colonies.

A similar, although less pronounced situation is apparent at Marwick Head. According to SMP count data (JNCC, 2023), in 1999, prior to the invasion of stoats, puffin count was recorded at 73 individuals, but this has decreased to fewer than 10 individuals in the most recent count in 2016. The guillemot counts from 1986 to 1999 were between 25,000 and 35,000 individuals, however this has gradually declined to a low of 9,552 individuals in 2023. Kittiwake counts have also declined, with counts of around 5,000 AON in the 1990s, declining to around 2,000 AON in the 2000's, around 1,000 in the 2010's and the most recent count of 1,439 in 2023. A colony of gannets has been recorded in recent years at Marwick Head, with an initial count of 9 AOS in 2021 and 29 AOS in 2023.

Therefore, although it is not possible to quantify the benefit provided to individual seabird species as a result of the ONWP due to a lack of evidence to date of the level of stoat predation on Orkney seabirds, the colony counts for just the two locations highlighted above indicate that there is potential for significant benefit for all of the relevant seabird species in ensuring the completion of the eradication of stoats from Orkney and the continued biosecurity to prevent re-incursion.

[2] https://www.orkneynativewildlife.org.uk/news/the-orkney-native-wildlife-project-is-applying-for-funding-to-extend
[3] https://www.orkneynativewildlife.org.uk/stoat-map

The initial funding obtained by ONWP is coming to an end, however it is anticipated that the eradication will need to continue until at least 2027, after which there will be a minimum of two years monitoring required to declare the island stoat-free[4]. With each year of eradication or monitoring costing around £1.5 million, a significant amount of funding is required to ensure the project can continue. Beyond the active eradication and monitoring, there is an ongoing biosecurity requirement to prevent and react quickly to any re-incursion. By contributing to the ONWP financially, OWPL could provide some long-term security to the project and in doing so, provide ongoing protection to the seabird colonies against the threat of stoat predation.

6.3.4 Next steps

Positive discussions have taken place between OWPL and ONWP and will continue throughout the application determination period with the aim of securing a potential collaborative agreement.

Currently, impacts of stoat predation on the seabird colonies in Orkney is assumed, with circumstantial evidence in support. However, to determine definitively if stoats are taking on seabirds in Orkney, OWPL propose to commission stomach content analysis of stoats which have already been captured and frozen by ONWP.

The following stages outline a process of ongoing engagement between Orkney Native Wildlife Project (ONWP) and Offshore Wind Power Limited (OWPL).

This initial process of engagement has been drafted following:

- The Orkney Islands Council's representation (February 2024) which noted that "supporting ONWP has the potential to be a more relevant, practical and effective means of delivering compensation".
- Various meetings between OWPL, the RSPB and ONWP throughout 2023 and 2024.

Outline Process of Engagement between Orkney Native Wildlife Project (ONWP) and Offshore Wind Power Limited (OWPL)

Step 1: Review of Ornithological Impacts (Q4 2024)

1. **Initial Consultation & Agreement:**
    - **Parties Involved:** Senior representatives from ONWP and OWPL.
    - **Objective:** Discuss the potential ornithological impacts from the West of Orkney Windfarm on Orkney's seabird bird colonies with a view to identifying Orkney seabird species that are either already predated by stoats or at risk of predation.
    - **Outcome:** Acknowledgment of the potential of compensating effects from The West of Orkney Windfarm on Orkney's seabirds via ONWP.
2. **Commitment to Collaboration:**
    - **Parties Involved:** Both organisations commit to working together on stoat removal as a potential compensatory measure for Orkney's seabirds.
    - **Deliverables:** A Memorandum of Understanding (MoU), or similar signed agreement, that details both parties' commitment to the long-term success of stoat removal and seabird conservation efforts.

Step 2: Review of Existing Data (Q4 2024)

Data Sharing Agreement:

- **Parties Involved:** ONWP and OWPL's environmental teams.
- **Objective:** Establish terms for sharing ornithological and stoat data, windfarm impact assessments, and historical seabird data on Orkney.
- **Outcome:** Agreement for data sharing with confidentiality clauses, where applicable/appropriate.

2. **Compilation & Review of Data: (Q4 2024)**

[4] https://www.orkneynativewildlife.org.uk/project/timeline

- **Action:** OWPL provides all relevant environmental impact data, while ONWP shares existing data on stoat population distribution and current/potential impact on Orkney's seabirds. ONWP provides access to stoats trapped at or near Orkney seabird colonies for stomach and/or DNA analysis. OWPL shall cover all costs and share all results from this analysis. The stoats shall be returned to ONWP following analysis.
- **Outcome:** A combined dataset is prepared which, subject to the above results and/or additional rationale, highlights the potential benefits of removing stoats for Orkney's seabirds.

3. **Data Gap Analysis: (Q1 2025)**
   - **Action:** Both teams jointly review existing data to identify gaps in knowledge.
   - **Outcome:** A report identifying gaps and setting the stage for field studies, if required. OWPL use this data to inform their Outline Seabird Compensation Plan which OWPL shall submit to Marine Scotland in Q1 2025.

Step 3: Conduct Field Surveys (2025/26)

1. **Design Field Survey Plans:**
   - **Parties Involved:** ONWP field experts, OWPL ecologists and environmental consultants.
   - **Objective:** Design surveys to assess the stoat population, seabird population impacts, and determine seabird colonies/species at risk of stoat predation.
   - **Outcome:** A detailed field survey plan that includes survey locations, methodologies, and timelines.
2. **Implementation of Field Surveys:**
   - **Action:** OWPL and ONWP conduct field surveys, collecting data on stoat presence, seabird mortality/risk of mortality from predation. OWPL provide financial support to ONWP to cover the additional costs of this work.
   - **Outcome:** Field study report analysed by both parties to further inform stoat removal and seabird conservation strategies.
3. **Survey Results Reporting:**
   - **Deliverable:** A joint report outlining the findings of the field surveys, including recommendations for areas where stoat removal and would benefit Orkney's seabird colonies/target species. OWPL use this report to inform their Detailed Seabird Compensation Plan which OWPL shall submit to Marine Directorate and NatureScot in Q1 2026.

Step 4: Financial Assistance for Trapping Efforts (Q4 2026)

1. **Financial Partnership Agreement:**
   - **Parties Involved:** OWPL's finance team, ONWP's project management team.
   - **Objective:** OWPL provides annual financial support to ONWP to help sustain stoat trapping efforts, ensuring continuity/extension of ONWP project targeting seabird colonies.
   - **Outcome:** A financial agreement that outlines the specific funds allocated for trapping equipment, personnel, and operational costs for stoat removal to the benefit of seabirds.
2. **Budget Proposal & Approval:**
   - **Action:** ONWP submits a detailed budget for continuity/extension of trapping monitoring etc, including costs for equipment, personnel, and logistics.
   - **Outcome:** OWPL Board approves funds, and both parties agree on financial reporting requirements and timelines.
3. **Financial Oversight & Reporting:**
   - **Action:** ONWP provides regular financial reports to OWPL, detailing how the funds are used and the progress of the trapping efforts at seabird colonies.

- **Outcome:** Transparency and accountability in financial matters ensure ongoing support from OWPL and targets Orkney seabirds.

Step 5: Biosecurity Measures (>2030)

1. **Development of Biosecurity Plan:**
   - **Parties Involved:** ONWP biosecurity experts, OWPL senior management team.
   - **Objective:** Collaboratively develop biosecurity measures to prevent the reinvasion of stoats after removal, ensuring long-term success of ONWP.
   - **Outcome:** A comprehensive biosecurity plan that includes monitoring, surveillance, and barriers to stoat reintroduction.
2. **Implementation of Biosecurity Protocols:**
   - **Action:** ONWP leads the implementation of biosecurity measures, including traps at high-risk points for seabirds, community awareness programs, and surveillance.
   - **Outcome:** Effective and practical measures are put in place to safeguard Orkney seabirds from future stoat invasions.
3. **Monitoring & Reporting:**
   - **Action:** Regular monitoring is carried out to assess the effectiveness of biosecurity measures, with reports submitted to both ONWP and OWPL. OWPL has a duty to report annual monitoring to Scottish Ministers and NatureScot.
   - **Outcome:** Continuous improvement of biosecurity measures based on feedback and ongoing monitoring data.

Step 6: Ongoing Monitoring and Partnership Evaluation (>2027)

1. **Ongoing Monitoring of Wildlife Populations:**
   - **Parties Involved:** ONWP and OWPL's environmental teams.
   - **Objective:** Conduct long-term monitoring of seabird populations and the continued absence of/control of stoat predation on Orkney seabird colonies.
   - **Outcome:** Ongoing ecological assessments ensure the success of ONWP.
2. **Annual Review Meetings:**
   - **Action:** Hold joint annual review meetings to assess the progress of the stoat removal and seabird protection potential.
   - **Outcome:** Both parties adjust strategies as necessary based on data, ensuring continuous progress toward seabird conservation goals.
3. **Public Communication & Reporting:**
   - **Action:** Both ONWP and OWPL regularly communicate the results of their collaborative efforts to the public and regulators, demonstrating environmental stewardship.
   - **Outcome:** Public relations, demonstrating a successful partnership that benefits Orkney's seabirds and native wildlife.

7. Summary

In accordance with the results of the RIAA and RIAA Addendum, the Applicant has proposed compensation measures to offset AEoSI for:

- Guillemot from the Sule Skerry and Sule Stack SPA;
- Kittiwake from the East Caithness Cliffs SPA; and
- Kittiwake from the North Caithness Cliffs SPA.

Additionally, the Applicant proposes compensation on a without prejudice basis for the following sites and features:

- Kittiwake from Buchan Ness to Collieston Coast SPA;
- Gannet and puffin from Forth Islands SPA;
- Kittiwake from Fowlsheugh SPA;
- Kittiwake from Troup, Pennan & Lion's Head SPA; and
- Guillemot from East Caithness Cliffs SPA

A range of potential compensation measures were considered. Based on the available evidence, and the scale of compensation that may be needed based on the Applicant's RIAA and RIAA Addendum, the removal of brown rats and feral cats from offshore islands is likely to be the measure that would be able to provide the level of compensation needed with a good likelihood of success.

Rousay was identified as the preferred location for implementation of the compensation due to proximity to the Project, presence of colonies of the species requiring compensation and the presence of invasive mammalian predators.

Given the scale of compensation that may be required and the presence of both human habitation and agriculture on the island, the application of predator-proof fencing is identified as the measure that would provide the highest likelihood of success in protecting breeding seabirds from rats and feral cats, rather than attempting a whole island eradication, which is less likely to succeed. This measure would be sufficient to compensate for those features for which the Applicant has concluded that AEoSI cannot be ruled out.

Implementation and monitoring plans will be produced to determine how fences would need to be installed and maintained, and how monitoring would show that the applied measure was successful at maintaining the coherence of the UK SPA network for the features identified.

An adaptive management plan will be produced so that where monitoring shows the applied measures have not provided the level of compensation required that additional measures are put in place to maintain the coherence of the UK SPA network.

The Applicant has also presented a without prejudice compensation measure, disturbance reduction, which will be further developed and implemented should the Scottish Ministers AA conclude that it is required.

The Applicant has also provided a number of alternative measures that can be considered in greater detail should the Scottish Ministers deem it necessary. However, the information presented in this Compensatory Measures Plan is considered sufficient to give the Scottish Ministers confidence that suitable compensation for the Project can be provided.

8. References

Allbrook, D.L. and Quinn, J.L. 2020. The effectiveness of regulatory signs in controlling human behaviour and Northern gannet (*Morus bassanus*) disturbance during breeding: an experimental test. *Journal for Nature Conservation*, Volume 58: 125915.

APEM. 2021. Calculation Methods of Hornsea Four's Proposed Compensation Measures for Features of the FFC SPA. Orsted Hornsea Project Four Ltd. APEM Ref: P00007416. EN010098-001040-Hornsea Project Four - G1.41 Calculation Methods of Hornsea Fours Proposed Compensation Measures for Features of the FFC SPA.pdf (planninginspectorate.gov.uk)

Batey, C. 2013. The effectiveness of management options in reducing human disturbance to wetland and coastal birds. *The Plymouth Scientist* 6: 340-354.

Bell, E.A., Bell, M.D., Morgan, G. and Morgan, L. 2019. The recovery of seabird populations on Ramsey Island, Pembrokeshire, Wales, following the 1999/2000 rat eradication. In: C.R. Veitch, M.N. Clout, A.R. Martin, J.C. Russell and C.J. West (eds.) (2019). Island invasives: scaling up to meet the challenge, pp. 539–544. Occasional Paper SSC no. 62. Gland, Switzerland: IUCN.

Burns, B., Innes, J. and Day, T. 2012. The Use and Potential of Pest-Proof Fencing for Ecosystem Restoration and Fauna Conservation in New Zealand. In: Fencing for Conservation. pp. 65-90. New York: Springer.

Campbell, K.J., Harper, G., Algar, D., Hanson, C.C., Keitt, B.S. and Robinson, S. 2011. Review of feral cat eradications on islands.

Cook M.I. & Hamer K.C. 1997. Effects of supplementary feeding on provisioning and growth rates of nestling puffins *Fratercula arctica*: evidence for regulation of growth. Journal of Avian Biology (formerly Ornis Scandinavica 1970-1993), 28, 56-62.

Cooper, J. 2013. Predator-proof fences are helping to protect procellariform seabirds, including ACAP-listed albatrosses and petrels. https://www.acap.aq/news/news-archive/2013-news-archive/predator-proof-fences-are-helping-to-protect-procellariiform-seabirds-including-acap-listed-albatrosses-and-petrels

Cuthbert, R. and Davis, L.S. 2002. The impact of predation by introduced stoats on Hutton's shearwaters, New Zealand. Biological Conservation 108: 79-92.

Dahl, H.K., Barrett, R.T. and Ims, R.A. Effects of supplementary feeding on provisioning and growth rates of Atlantic puffin *Fratercula arctica* chicks in North Norway. Atlantic seabirds 7: 133-143.

Davis, T and Jones, T. 2024. Lundy breeding birds 2008 to 2023. The Birds of Lundy. https://www.birdsoflundy.org.uk/index.php/breeding

DTA Ecology. 2020. Habitats Regulations Derogations Workshop Report. Advice to the Crown Estate.

Finney, S.K. 2002. The dynamics of gull-puffin interactions: implications for management. PhD Thesis.

Fitzsimmons, M.G., Rector, M.E., McKay, D.W. and Storey, A.E. 2017. High growth and low corticosterone in food-supplemented Atlantic puffin *Fratercula arctica* chicks under poor foraging conditions. Marine Ecology Progress Series, 565, 217-226.

Fraser, E.J., Lambin, X., McDonald, R.A. and Redpath, S.M. 2015. Stoat (*Mustela erminea*) on the Orkney Islands – assessing risks to native species. Scottish Natural Heritage Commissioned Report No. 871.

Furness, R.W., MacArthur, D., Trinder, M. and MacArthur K. 2013. Evidence review to support the identification of potential conservation measures for selected species of seabirds. MacArthur Green, Glasgow.

Furness, R.W. 2021. Report to Crown Estate Scotland and SOWEC: HRA Derogation Scope B - Review of seabird strategic compensation options. MacArthur Green, Glasgow. https://www.offshorewindscotland.org.uk/media/12970/hra-derogation-scope-b-report.pdf

Gill, V.A. and Hatch, S.A. 2002. Components of productivity in black-legged kittiwakes *Rissa tridactyla*: response to supplemental feeding. Journal of Avian Biology 33: 113-126.

GoBe Consultants Ltd. 2021. Hornsea Project Four: Derogation Information. Volume B2, Annex 8.3: Compensation measures for FFC SPA: Predator Eradication: Ecological Evidence.

Goodwin, K. 2020. On the cliffs of Canna. National Trust for Scotland. https://www.nts.org.uk/stories/on-the-cliffs-of-canna

Green Volt. 2024. Green Volt Offshore Wind Farm Outline Seabird Compensation Plan.

Harris M.P. 1978. Supplementary feeding of young puffins, *Fratercula arctica*. Journal of Animal Ecology, 47, 15-23.

Horswill, C. and Robinson, R.A. 2015. Review of seabird demographic rates and density dependence. JNCC Report No. 552.

JNCC. 2021. Seabird Monitoring Programme Report 1986-2019. https://jncc.gov.uk/our-work/smp-report-1986-2019/

JNCC. 2023. Seabird Counts Dataset. Available at: https://hub.jncc.gov.uk/assets/63f0ea40-485d-46dd-b967-150df90a7b2b#seabirds-count-dataset-master-spa-summary-table.xlsx

Johnson, D.T., Furness, R.W., Robbins, A.M.C., Tyler, G.A. and Masden, E.A. 2019. Camera traps reveal predators of breeding Black Guillemots *Cepphus grille*. Seabird 32: 72-83.

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

Jones C. 2000. Sooty shearwater (*Puffinus griseus*) breeding colonies on mainland South Island, New Zealand: Evidence of decline and predictors of persistence, New Zealand Journal of Zoology 27: 327-334.

Kingston, A.I., Northridge, S., Paxton, C.G.M. and Buratti, J.P.F. 2023 Improving understanding of seabird bycatch in Scottish longline fisheries and exploring potential solutions. University of St Andrews.

Korpimäki, E., Norrdahl, K. & Rinta-Jaskari, T. 1991. Responses of stoats and least weasels to fluctuating food abundances: is the low phase of the vole cycle due to mustelid predation? Oecologia 88: 552–561. https://doi.org/10.1007/BF00317719

MacArthur Green and Royal HaskoningDHV. 2022. Norfolk Projects Offshore Wind Farms Lesser black-backed gull Implementation and Monitoring Plan. Ref PB5640.009.0005.

Manx National Heritage. 2021. Puffins return to the Calf of Man. https://manxnationalheritage.im/news/puffins-return-to-the-calf-of-man/

McGregor, R., Trinder, M. and Goodship, N. 2022. Assessment of compensatory measures for impacts of offshore windfarms on seabirds. A report for Natural England. Natural England Commissioned Reports. Report number NECR431.

Nogales, M., Martin, A., Tershy, B.R., Donlan, C.J., Veitch, D., Puerta, N., Wood, B. and Alonso, J. 2004. A review of feral cat eradication on islands. Conservation Biology 18: 310-319.

Northridge, S., Kingston, A. and Coram, A. 2020. Preliminary estimates of seabird bycatch by UK vessels in UK and adjacent waters. JNCC Report.

Outer Dowsing Offshore Wind. 2024a. Habitats Regulations Assessment. Derogation Case. Document Reference 7.5. Revision 1.0. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-000555-7.5%20Derogation%20Case.pdf

Outer Dowsing Offshore Wind. 2024b. Habitats Regulations Assessment. Kittiwake Compensation Plan. Document 7.7.1. Revision 1.0. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-000559-7.7.1%20Kittiwake%20Compensation%20Plan.pdf

Outer Dowsing Offshore Wind. 2024c. Habitats Regulations Assessment. Offshore Artificial Nesting Structures Evidence Base and Roadmap. Document 7.7.4. Revision 1.0. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-000565-7.7.4%20Offshore%20Artificial%20Nesting%20Structure%20Evidence%20Base%20and%20Roadmap.pdf

Pacific Rim Conservation. 2024. Predator Management. https://pacificrimconservation.org/conservation/predator-control/#:~:text=Pacific%20Rim%20Conservation%20conducts%20and,islets%20and%20within%20fenced%20areas

Pennisi, E. 2024. The Global War on Island Rats. Science Volume 385 Issue 6715.

Phillips, R.A., Thompson, D.R. and Hamer, K.C. 1999. The impact of great skua predation on seabird populations at St Kilda: a bioenergetics model. Journal of Applied Ecology 36: 218-232.

Pizzolla, P., Tyler, G, Grant, M., Salmon, W., Harker, J. and Bower, R. 2024. Development of Ornithology Regional Compensation Measures. Report for NE / E Scotwind developer's group.

Poloczanska, E.S., Cook, R.M., Ruxton, G.D. and Wright, P.J., 2004. Fishing vs. natural recruitment variation in sandeels as a cause of seabird breeding failure at Shetland: a modelling approach. ICES Journal of Marine Science, 61(5), pp.788-797.

Predator Free New Zealand. 2017. Tāwharanui success is model for open sanctuaries. Available at: https://predatorfreenz.org/stories/tawharanui-success-model-open-sanctuaries/

Ratcliffe, N., Bell, M., Pelembe, T., Boyle, D., White, R.B.R., Godley, B., Stevenson, J. and Sanders, S. 19 2009. The eradication of feral cats from Ascension Island and its subsequent recolonization by seabirds. Oryx 44, 20-29.

Rayner, M.J., Hauber, M.E., Imber, M.J., Stamp, R.K. and Clout, M.N., 2007. Spatial heterogeneity of mesopredator release within an oceanic island system. Proceedings of the National Academy of Sciences, 104: 20862-20865.

RSPB England. 2019. Celebrating seabird success on the island of Lundy and the Isles of Scilly. https://community.rspb.org.uk/ourwork/b/rspb-england/posts/celebrating-seabird-success-on-the-island-of-lundy-and-the-isles-of-scilly

Stanbury, A., Thomas, S., Aegerter, J., Brown, A., Bullock, D., Eaton, M., Lock, L., Luxmoore, R., Roy, S., Whitaker, S. and Oppel, S., 2017. Prioritising islands in the United Kingdom and crown dependencies for the eradication of invasive alien vertebrates and rodent biosecurity. European Journal of Wildlife Research, 63: 1-13.

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

Swann, R.L., Aiton, D.G., Call, A., Foster, S., Graham, A., Graham, K. and Young, A. 2016(b). Canna seabird studies 2015. JNCC Report No: 474l. JNCC, Peterborough.

Towns, D.R., Atkinson, I.A.E., and Daugherty, C.H. 2006. Have the harmful effects of introduced rats on islands been exaggerated? Biological Invasions 8:863–891.

Vanderwerf, E.A. and Young, L.C. 2014. Breeding biology of red-tailed tropicbirds *Phaethon rubricauda* and response to predator control on O'ahu, Hawai'i. Marine Ornithology 42: 73-76.

Vincent Wildlife Trust. 2020. In search of stoats and weasels. https://www.vwt.org.uk/blog/in-search-of-stoats-and-weasels/

Votier, S.C., Bearhop, S., Ratcliffe, N., Phillips, R.A. and Furness, R.W. 2004. Predation by great skuas at a large Shetland seabird colony. Journal of Applied Ecology 41: 1117-1128.

Walsh, P.M., Halley, D.J., Harris, M.P., del Nevo, A., Sim, I.M.W., & Tasker, M.L. 1995. Seabird monitoring handbook for Britain and Ireland. JNCC / RSPB / ITE / Seabird Group, Peterborough.

White, J., Leclaire, S., Kriloff, M., Mulard, H., Hatch, S.A. and Danchin, E. 2010. Sustained increase in food supplies reduces broodmate aggression in black-legged kittiwakes. Animal Behaviour 79: 1095-1100.

White, G. & Hirons, G. 2019. The Predator Exclusion Fence Manual: Guidance on the use of predator exclusion fences to reduce mammalian predation on ground-nesting birds on RSPB reserves Version 3, October 2019.

Young, L.C., Vanderwerf, E.A., Mitchell, C., Yeun, E., Miller, C.J., Smith, D.G. and Swenson, C. 2012. The use of predator proof fencing as a management tool in the Hawaiian Islands: a case study of Ka'ena Point Natural Area Reserve. University of Hawaii Pacific Cooperative Studies Unit Technical Report 180: 1-87.

Zealandia. Undated. A world-first sanctuary. https://www.visitzealandia.com/About/History/A-World-First-Sanctuary

Zonfrillo, B. 1997. The ecology of seabirds on Ailsa Craig, Firth of Clyde. PhD Thesis. University of Glasgow.

Zonfrillo, B. 2001. Ailsa Craig: before and after the eradication of rats in 1991. Ayrshire Birding. https://www.ayrshire-birding.org.uk/2001/01/ailsa_craig_before_and_after_the_eradication_of_rats_in_1991/

A1. Summary of Compensation Measures Review

Table A-8-1 Summary of compensation measures considered. Species columns present the strength of evidence as reported by Pizzolla et al. (2024) / Furness et al. (2013) (*denotes additional evidence presented in Furness (2021)).

Measure	Guillemot	Puffin	Gannet	Kittiwake	Project Suitability	Proposal
Sandeel fishery closure	Moderate / Low*	Moderate / Low*	Weak / -	Strong / High	Sandeel closure already in place.	Noted as potential strategic compensation
Other fishery closure	Weak / Low	Weak / Low	Weak / -	Weak / High	Fishery closure would require Scottish Government action and is only achievable as a strategic measure.	Noted as potential strategic compensation
Mammalian predator control	Moderate / Low*	Strong / Low*	Weak / -	Weak / Low	Evidence of benefit to guillemot and puffin.	Proposed compensation measure
Biosecurity	Strong / -	Strong / -	Strong / -	Strong / -	Evidence of benefit to all relevant species.	Incorporated into proposed measure
Avian predator control	Weak / -	Moderate / -	Weak / -	Moderate / Moderate	Some evidence of benefit for relevant species but contentious given protected status of avian species	Potential adaptive management
Management of habitat	n/a / -	Strong / -	n/a / -	n/a / -	Limited evidence for relevant species except where there is a particular issue (i.e.. erosion or invasive vegetation).	Potential adaptive management

Measure	Guillemot	Puffin	Gannet	Kittiwake	Project Suitability	Proposal
Artificial nest structures (ANS)	Weak / -	Weak / -	Weak / -	Moderate / High	Benefits only kittiwake. Kittiwake nesting habitat is not limited in the north of Scotland. Measure is considered disproportionate to the predicted effects.	Not progressed
Bycatch mitigation	Moderate / -	n/a / -	Strong / Low*	Weak / -	Limited evidence for need or benefit. Review by Pizzolla *et al* suggests that although there is evidence of bycatch of gannets in the longline fishery off the north of Scotland the impact on UK colonies is low and there are already voluntary mitigation measures in place to reduce bycatch.	Not progressed
Supplementary feeding	n/a / -	Moderate / -	n/a / -	Moderate / -	Mixed evidence of success relevant species. Practicalities of delivering additional resources to nests safely and without causing further disturbance. Unlikely to provide the amount of compensation required.	Not progressed
Reduced disturbance at colonies	Moderate / -	Weak / -	Moderate / -	Moderate / -	Limited evidence of benefit to relevant species. Conflict with encouraging access.	Proposed without prejudice for gannet
New natural colonies	Weak / -	Weak / -	Weak / Low	n/a / -	Limited evidence and habitat availability is not considered to be limited.	Not progressed

Measure	Guillemot	Puffin	Gannet	Kittiwake	Project Suitability	Proposal
Marine litter removal	Weak / -	Weak / -	Moderate / -	Weak / -	Limited evidence and difficult to quantify.	Not progressed
Reduce legal harvesting	- / -	- / -	Strong / High	- / -	Only applicable to gannet. Measure would likely be contentious and would require action from NatureScot.	Not progressed
Reduced disturbance at sea	Weak / -	Weak / -	Weak / -	Weak / -	Limited evidence of benefit or need.	Not progressed
Seagrass restoration and recovery	Weak / -	Weak / -	Weak / -	Weak / -	Limited evidence of benefit.	Not progressed
Oyster restoration	Weak / -	Weak / -	Weak / -	Weak / -	Limited evidence of benefit.	Not progressed
Protection of kelp beds	Weak / -	Weak / -	Weak / -	Weak / -	Limited evidence of benefit.	Not progressed
Reduced pollution	Weak / -	Weak / -	Weak / -	Weak / -	Limited evidence of benefit.	Not progressed
Prevent oil spills	- / High	- / Low	- / -	- / -	Limited evidence of need.	Not progressed
End of culling	- / -	- / -	- / -	- / -	Not applicable to relevant species.	Not progressed
Reduced illegal harvesting	n/a / -	n/a / -	Moderate / -	n/a / -	Only applicable to gannet and no evidence of need in UK.	Not progressed

A2. Assessment of Non-target Impacts

REPORT

Rousay Predator Exclusion/Removal Assessment of Non-target Impacts

Client: West of Orkney

Reference: PC6195-RHD-XX-XX-RP-X-0001

Status: S3/P01

Date: 3 July 2024

Royal HaskoningDHV

Enhancing Society Together

Table of Contents

1 Introduction 1

2 Description of the Works 3

2.1 Predator-proof Fence 3

2.2 Predator Removal 3

2.3 Monitoring and Maintenance 4

3 SSSI Assessment 5

3.1 Context 5

3.2 Rousay SSSI 6

4 Habitats Regulations Appraisal 11

4.1 Context 11

4.2 Rousay SPA 11

4.3 North Orkney SPA 11

4.4 Stage 1 12

4.5 Stage 2 13

4.6 In combination 14

5 Summary 17

6 References 17

Table of Tables

Table 3-1. Summary of SSSI assessment 9

Table 4-1. Summary of HRA. 15

Table of Figures

Figure 1-1 Designated sites at Rousay. 2

1 Introduction

Offshore Wind Power Limited (OWPL) ("the Applicant") is proposing the development of an offshore windfarm, West of Orkney Windfarm ("the Project"), located at least 23 kilometres (km) from the north coast of Scotland and 28 km from the west coast of Hoy, Orkney.

In accordance with the Habitats Regulations[1], which state "*Before deciding to undertake, or give any consent, permission or other authorisation for, a relevant plan or project, a competent authority must make an appropriate assessment of the implications of the plan or project for the site in view of that site's conservation objectives*" OWPL have provided the necessary information on the potential impacts of the Project on European sites in the Report to Inform Appropriate Assessment (RIAA). This identified potential adverse effects on several qualifying seabird species including common guillemot (*Uria aalge*), black-legged kittiwake (*Rissa tridactyla*) and Atlantic puffin (*Fratercula arctica*). As such, measures have been proposed to compensate for these effects.

One of the proposed compensation measures is predator exclusion/removal from seabird colonies on the island of Rousay by means of predator exclusion fencing coupled with rat eradication, and potential feral cat trapping and removal, within the fenced area. The west coast of Rousay, where the majority of seabird colonies are, is designated as both a Site of Special Scientific Interest (SSSI) and a Special Protection Area (SPA) (Figure 1-1). While the predator exclusion/removal is proposed specifically to have beneficial effects on breeding seabirds, it is necessary to assess the impacts of the proposed compensation measure on the designated sites and features. This is presented in the following sections. No impacts are predicted beyond the island of Rousay and therefore no assessment of sites beyond the island is provided.

[1] *The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) – applicable to projects within the 12 Nautical Mile (NM) limit; The Conservation of Offshore Marine Habitats and Species Regulations 2017 – applicable to projects between the 12 and 200 NM limits; and The Conservation of Habitats and Species Regulations 2017 (as amended) – applicable to Section 36 Consent applications.*

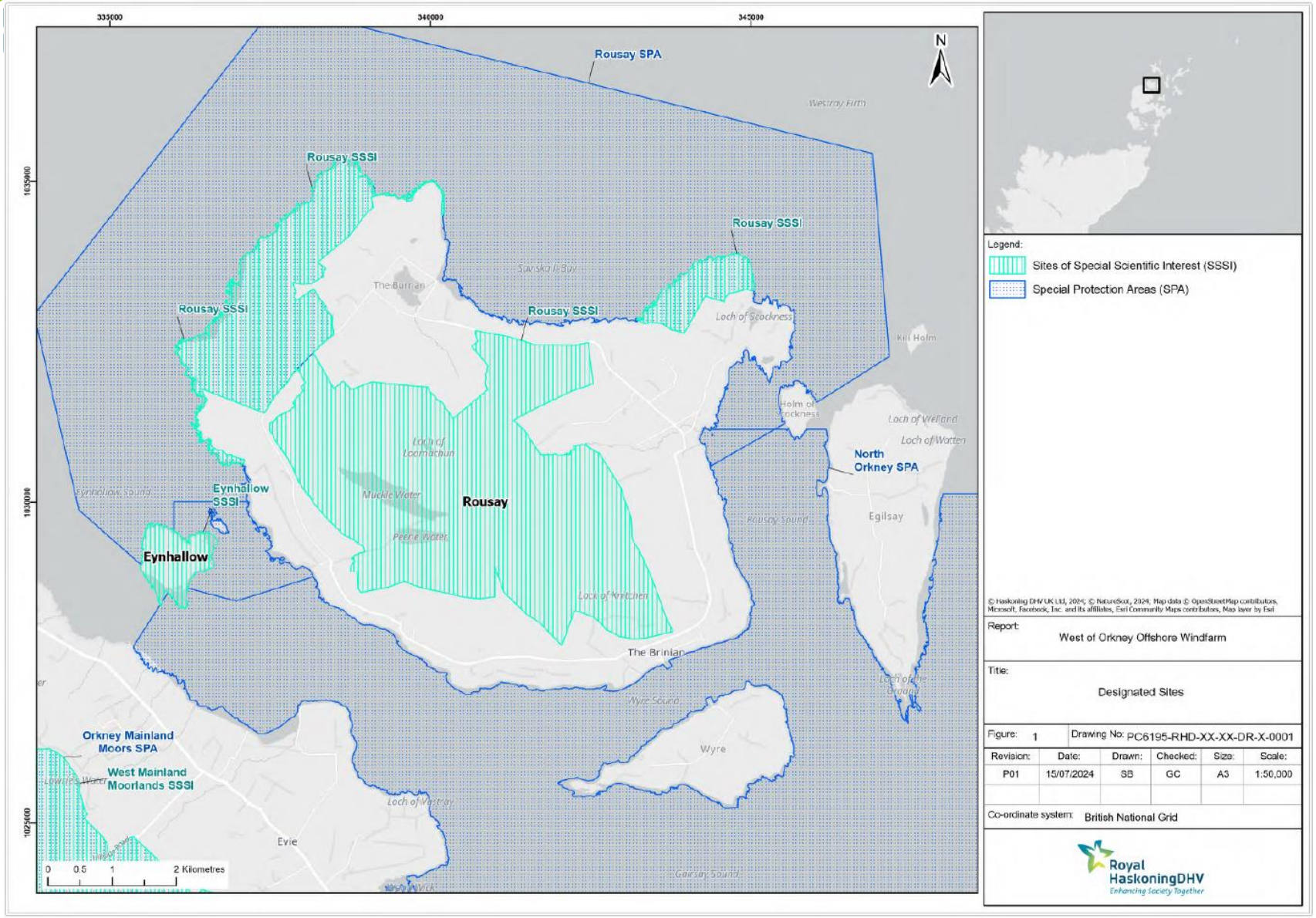

Figure 1-1 Designated sites at Rousay.

2 Description of the Works

The detailed location, extent and a description of the proposed predator exclusion fence and eradication process will not be available until site feasibility surveys have been undertaken. However, it is considered that sufficient information is available to undertake a robust assessment, acknowledging that if the final details of the fence or eradication differ from those assessed, the impacts must be re-assessed.
All aspects of the proposed exclusion/removal, including the monitoring and maintenance, will be approved by the compensation steering group, which is anticipated to include members of NatureScot, Marine Scotland and RSPB.

2.1 Predator-proof Fence

The proposed predator-proof fence is expected to have the following key aspects:

- Height of around 1.8m;
- Metal posts;
- Wire mesh gauge of at least 1mm;
- Maximum 12mm mesh size for lower half of the fence, 50mm for upper half;
- At least 300mm of mesh buried horizontally at a depth of 100-150mm below ground;
- Overhanging top, up to 600mm, preferably curved, with loosely tensioned ‘floppy’ mesh; and
- Access gate with concrete base

2.2 Predator Removal

Predator (rat) eradication with follow the protocol set out in the UK Rodent Eradication Best Practice Toolkit (Thomas et al., 2017) entailing the following:

- Ground-based operation using bait stations designed specifically for the target species, limiting access for non-target species. Anticoagulant rodenticide (or an alternative) will be positioned in bait stations spread in a 25 m x 25 m grid across enclosed areas.
- Each bait station will have an individual number, plotted using GPS and all data put into a GIS-linked database. Once all the bait stations are in position, they will be left for one week or more (without toxin in them) so the rats become accustomed to them and accept them as part of the terrain. Following this, the rodenticide will be added to the bait stations.
- Bait stations will be checked a minimum of every two days, replacing bait as rats consume it. Partially eaten bait will be replaced with a new block. Old or partially eaten bait will be disposed of at a registered landfill or incineration facility as recommended by the safety data sheets. Checking bait stations enables constant monitoring of bait take and the resulting die-off of rats.
- Bait take will be recorded into GIS-linked database apps in the field for ongoing analysis. Refinements to the eradication phase will be made from this real time data. Hot spots will be identified quickly and targeted throughout the programme allowing for real time adaptive management.
- The eradication phase will be carried out in the winter (September to March) when rodent numbers are naturally at their lowest, and when natural food supplies are low. This means that there are fewer rodents to catch, and those that do remain are more likely to take the bait in the absence of other food sources.

- It is anticipated that stations will be baited for a period of up to six weeks during which time the bait taken is expected to be reduced to zero.

Removal of cats from the enclosed area may be required. This is expected to entail the following:

- Immediately prior to completion of the fence installation, a thorough inspection of the enclosure area(s) will be undertaken to ensure that, as far as possible, there are no cats present inside the fenced off area. This is expected to take the form of a group of personnel, walking a line across the (mostly complete) enclosed area, in a manner which flushes any cats in front and out through the last unfenced section of the enclosure. Several passes will be conducted (e.g., over the course of a day) to increase confidence that as many cats as possible have been flushed out.
- Once the fenced off enclosure is complete, any cats remaining within the enclosure will be caught using humane cage traps. Initially, open cage traps will be left for one week or more (without the trap closing) so that the cats become accustomed to them and accept them as part of the terrain. Cage traps will be baited (using non-toxic meat, fish or cat biscuits) and placed along likely cat thoroughfares in locations concealed from the public.
- Traps will be set in the evening and checked early the following morning. It is anticipated that traps will be set for a period of up to six weeks, or less depending on the number of cats caught, with the number of trapped cats being reduced to zero by the end of the trapping period.
- The trapping phase will be carried out during the winter months (September to March).

2.3 Monitoring and Maintenance

2.3.1 Predator Monitoring

Monitoring will be required to determine whether the eradication is effective and to detect any incursion of predators into the fenced area. For rats this will involve an intensive monitoring phase from the end of the eradication to the onset of the seabird breeding season. A grid of monitoring stations with non-toxic foods and chew sticks will be established at a greater density than the baiting stations. These will be checked every 2-3 days for signs of rat activity. From March onwards an 18-month lower intensity monitoring programme will be undertaken, and stations will be checked monthly.

Monitoring for cats will involve the use of sand pits placed at intervals along the fence line, both inside and outside, combined with camera traps at corners and gates in the fence. These will be checked on the same schedule as the rat monitoring stations, every 2-3 days during the non-breeding season. Monitoring during the seabird breeding season will be determined by the results of the winter monitoring but will include monthly checks of camera traps as a minimum.

2.3.2 Seabird Monitoring

Annual monitoring of seabirds will be required following installation of the predator-proof fence. This will follow standard monitoring protocols and will entail:

- Counts of key species will be undertaken inside and outside of the fenced off area(s), at a frequency to be agreed with the compensation steering group. Seabird counts will be conducted by ornithologists on land where access is possible and disturbance to breeding seabirds is minimal. Counts will be conducted by boat for inaccessible areas of the coast;
- In addition to count data, bird behaviour within the enclosure will be recorded at different stages throughout the breeding season;

- It will be necessary to map observed birds to cross-check between vantage points and to track nest success over the course of the season;
- Counts will be conducted during the daytime (0900-1600) in conditions of good visibility; poor weather (heavy rain, fog, high winds) will be avoided;
- Counts will be complemented with high resolution photography, to provide a permanent record of how the enclosure(s) is being used; and
- Consideration will be given to the use of drones to obtain aerial images over enclosed area(s), but only if this is agreed with the landowner and Statutory Nature Conservation Bodies.

2.3.3 Fence Maintenance

A critical feature of the compensation measure is that the predator-proof fence continues to prevent entry by mammalian predators. Thus, it is critically important that the full length of the fence line is inspected on a regular basis and any damaged or weak areas are rapidly repaired.

During the breeding season a proposed maintenance schedule is likely to be:

- Inspected on a two-weekly basis (March to August); and,
- Any damaged or weak areas will be rapidly repaired if essential to maintain integrity or if possible, to do so with minimal disturbance.

During the non-breeding season, the following maintenance schedule is proposed:

- Less regular inspections (e.g., 2-3 times per winter), but inspections will also take place following periods of severe weather;
- More substantive maintenance, such as replacing rusted sections of wire or weak posts will be undertaken at this time to avoid undue disturbance to the breeding birds; and
- Routine inspections will take place at such times to allow sufficient time for any substantive repairs to be completed prior to the return of breeding birds (i.e., before the end of February).

At any time, if a breach in the fence is found, careful monitoring would be conducted to check for the presence of mammals within the fenced area.

3 SSSI Assessment

3.1 Context

SSSIs are designated under the Nature Conservation (Scotland) Act 2004 making it is an offence for anyone to intentionally or recklessly damage any natural feature specified in a SSSI notification. Consent is required from NatureScot to undertake any of the ‘Operations Requiring Consent’ (ORC) listed for a particular site.

Assessment of the proposed compensation measure to damage the features of a SSSI is presented in the following section and summarised in Table 3-1.

3.2 Rousay SSSI

The Rousay SSSI encompasses the northwest and central areas of Rousay, along with the Faraclett Head area in the northeast (Figure 1-1). The site is designated for the following features:

- Blanket bog;
- Maritime cliff;
- Mesotrophic loch;
- Subalpine wet heath;
- Vascular plant assemblage;
- Breeding bird assemblage;
- Seabird colony (breeding);
- Arctic skua (*Stercorarius parasiticus*) (breeding);
- Guillemot (*Uria aalge*) (breeding);
- Kittiwake (*Rissa tridactyla*) (breeding); and
- Arctic tern (*Sterna paradisaea*) (breeding).

The site management objectives are:

- To restore the blanket bog to favourable condition by:
  - Establishing and maintaining grazing levels which allow for growth and flowering of moorland plants and avoid erosion caused by trampling or tracking;
  - Avoiding fire on blanket bog as this readily damages the peat forming bog mosses and can lead to vegetation loss and erosion;
  - Avoiding enrichment through fertilizers or nutrient input;
  - Undertaking peat cutting by hand only and ensuring that turfs are replaced vegetation side uppermost; and
  - Avoiding damage caused by vehicles.

- To restore the subalpine wet heath to favourable condition by:
  - Establishing and maintaining grazing levels which allow for growth and flowering of moorland plants and avoid erosion caused by trampling or tracking;
  - Avoiding fires on this habitat as wet heathland is slow to regenerate and exposure to wind will lead to erosion; and
  - Avoiding enrichment through fertilizers or nutrient input.

- To continue the recovery of the condition of the maritime cliff habitat by:
  - maintaining the grazing levels which allow for a low cropped sward but also the flowering of cliff top plants, especially Scottish primrose, whilst also avoiding erosion caused by trampling or tracking; and
  - Avoiding damage caused by vehicles.

- To maintain Muckle Water in favourable condition by:
  - preventing decreases in water levels through drainage as this could affect plant species diversity and distribution, as well as use by birds;
  - Avoiding the use of fertilisers on ground which drains freely into Muckle water; and
  - Preventing stock from damaging the water margin by excessive trampling.

- To maintain the vascular plant assemblage in favourable condition by:
  - Avoiding the use of fertilisers;
  - Maintaining a favourable grazing regime which balances the needs of plants to grow and flower against preventing the build up of thatch or scrub; and
  - Avoiding damage to scarce plants during peat cutting.

- To restore favourable condition of the of the breeding seabird community by:
  - Avoiding disturbance of breeding birds; and
  - Maintaining the moorland habitat for inland breeding species.

- To maintain the breeding moorland bird populations in favourable condition by:
  - Avoiding disturbance of breeding birds; and
  - Maintaining the bog and heath habitats used for nesting in good condition, as this improves bird breeding success.

Of the 16 ORC listed for the Rousay SSSI (SNH, 2012a), the following four apply to the proposed compensation measure:

- Grazing and changes to grazing management;
- Application of pesticides, including herbicides (weedkillers);
- Construction, removal or destruction of tracks, walls, fences or earthworks; and
- Use of vehicles except on existing tracks.

The mesotrophic loch for which the SSSI is designated, Muckle Water, is in the centre of Rousay and would be unaffected by installation of a fence on the west coast of the island. Similarly blanket bog habitat is absent from the coastal areas of Rousay (SNH, 2012b). Any access required for construction or maintenance of the fence will avoid areas of blanket bog.

There is potential that maritime cliff, subalpine wet heath and vascular plant assemblage features, could be damaged during construction of the fence. However, construction and access impacts are considered to be small scale, temporary and reduced through mitigation such as careful siting of access routes, limiting the use and size of vehicles, and replacing turves following installation of the fence skirt. Following fence installation, there is potential for changes in habitat and plant assemblage within the fenced area due to the exclusion of grazing pressure, allowing for longer sward height and possibly the development of scrub. This is identified within the site management measures as important for these features and therefore a managed grazing regime or manual cutting programme may need to be introduced for the fenced area, in agreement with NatureScot.

Breeding birds may be disturbed during construction of the fence. This may result in abandonment of nests or reduced provision of food to chicks, both of which would have a negative effect on reproductive success. However, this is easily avoided by undertaking construction between September and March inclusive, outside of the breeding bird season.

The use of rodenticide can result in poisoning, both primary (due to direct consumption of bait) and secondary (due to consumption of poisoned individuals), of non-target species. The application of rodenticide during the winter months means that there will be no impact during the breeding season and the population of seabirds will be low as most will have left the colony. Additionally, seabirds are at low risk of being affected as their diet of primarily marine fish and invertebrates means that they are unlikely to either directly consume bait, or to consume dead or dying rodents. Moorland birds are more likely to encounter the rodenticide, specifically birds of prey which do not migrate during the winter months when the rodenticide will be applied and may consume dead or dying rodents. This risk is lower in this instance than in many eradications due to the localised application of the bait stations within only a small proportion of the foraging habitat available on Rousay. The risk is further minimised through regular and diligent collection and disposal of dead or dying individuals.

The endemic Orkney vole (*Microtus arvalis orcadensis*) is of particular concern as, although not itself a designated feature, the species in known to constitute an important part of the diet of the birds of prey. Traditional bait traps would be accessible to Orkney vole and therefore the species would be at risk of primary poisoning. However, a variety of bait traps (e.g., AF Amicus[2]) are in development that are less accessible to smaller rodents, such as the Orkney vole. Feasibility surveys undertaken to map predator density will trial a number of these traps with non-toxic bait. These surveys will give an indication of Orkney vole density in the area to be fenced and will test the ability of different traps to prevent Orkney voles from accessing bait, allowing the most effective trap to be used during the eradication should the density of Orkney voles prove to be significant.

[2] *AF® AMICUS; THE NEW WILDLIFE CONSCIOUS RAT BOX FROM KILLGERM CHEMICALS - Killgerm Scandinavia*

Table 3-1. Summary of SSSI assessment

Feature	Status	Potential construction effects	Potential operational effects	Mitigation	Residual effect
Blanket bog	favourable maintained (2014)	No effects	No effects	No effects are anticipated, however access routes will be surveyed in advance and areas of blanket bog will be avoided.	None
Maritime cliff	unfavourable recovering (2008)	Habitat damage during construction	Habitats changes due to altered grazing regime	Careful siting of access routes, limiting the use and size of vehicles, and replacing turves following installation of the fence skirt. Review of existing grazing regime when site has been selected and agreement of managed grazing (or manual cutting) if required.	None
Mesotrophic loch	unfavourable declining (2014)	No effects	No effects	N/A	None
Subalpine wet heath	favourable recovered (2008)	Habitat damage during construction	No effects	Careful siting of access routes, limiting the use and size of vehicles, and replacing turves following installation of the fence skirt.	None
Vascular plant assemblage	favourable maintained (2009)	Habitat damage during construction	Habitats changes due to altered grazing regime	Careful siting of access routes, limiting the use and size of vehicles, and replacing turves following installation of the fence skirt Review of existing grazing regime when site has been selected and agreement of	None

Feature	Status	Potential construction effects	Potential operational effects	Mitigation	Residual effect
				managed grazing (or manual cutting) if required.	
Breeding bird assemblage	favourable maintained (2002)	Disturbance during construction	Habitats changes due to altered grazing regime. Secondary poisoning	Timing of works outside breeding bird season. Agreement of managed grazing (or manual cutting) if required. Regular and diligent collection of poisoned rodents.	Potential minor residual effect as a result of secondary poisoning.
Seabird colony (breeding)	unfavourable declining (2016)	Disturbance during construction	Beneficial effects	Timing of works outside breeding bird season	None
Arctic skua (breeding)	unfavourable no change (2015)	Disturbance during construction	Beneficial effects	Timing of works outside breeding bird season	None
Guillemot (breeding)	unfavourable declining (2016)	Disturbance during construction	Beneficial effects	Timing of works outside breeding bird season	None
Kittiwake (breeding)	unfavourable declining (2016)	Disturbance during construction	Beneficial effects	Timing of works outside breeding bird season	None
Arctic tern (breeding)	unfavourable no change (2018)	Disturbance during construction	Beneficial effects	Timing of works outside breeding bird season	None

4 Habitats Regulations Appraisal

4.1 Context

As was required for the main West of Orkney Windfarm Project, it is necessary, under the Habitats Regulations, to assess the implications of the proposed compensation measure on European sites. This is provided in the following sections and summarised in Table 4-1.

4.2 Rousay SPA

The Rousay SPA encompasses the north, west and east coasts of Rousay, including the headlands in the northwest and northeast (Figure 1-1). The site is designated for the following:

- Arctic skua (*Stercorarius parasiticus*) (breeding);
- Arctic tern (*Sterna paradisaea*) (breeding);
- Fulmar (*Fulmarus glacialis*) (breeding);
- Guillemot (*Uria aalge*) (breeding);
- Kittiwake (*Rissa tridactyla*) (breeding); and
- Seabird assemblage (breeding)

All species, except for fulmar, are in unfavourable condition.

The conservation objectives of the site are:

- 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 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

4.3 North Orkney SPA

The North Orkney SPA which covers the marine waters to the south and east of Rousay, extending down the east coast of mainland Orkney (Figure 1-1). The site is designated for the following species, all of which are in favourable condition:

- Great northern diver (*Gavia immer*) (non-breeding);
- Slavonian grebe (*Podiceps auratus*) (non-breeding);
- Velvet scoter (*Melanitta fusca*) (non-breeding); and
- Red-throated diver (*Gavia stellata*) (breeding).

The conservation objectives of the site are:

- To ensure that the qualifying features of the North Orkney SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.
- To ensure that the integrity of the North Orkney SPA is maintained in the context of environmental changes by meeting the following objectives for each qualifying feature:
  - The populations of qualifying features are viable components of the site;
  - The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species; and
  - The supporting habitats and processes relevant to qualifying features and their prey/food resources are maintained.

4.4 Stage 1

Stage 1 of the HRA process identifies any likely significant effects (LSE) of the project on European sites. Effects are considered 'likely' if they cannot be excluded based on objective information. The significance of an effect is determined taking account of the specific features and conditions of the site, and in relation to the conservation objectives (European Commission, 2019).

Effects pathways identified as a result of the proposed predator exclusion/removal are:

- Disturbance (noise and visual);
- Mortality; and
- Habitat alteration.

4.4.1 Rousay SPA

The presence of personnel and vehicles may cause disturbance of the qualifying bird species of the Rousay SPA. This could lead to nest failure if eggs or chicks are left for extended periods of time. The qualifying species forage at sea and therefore foraging activity will not be disturbed but frequent disturbance may result in increased energy expenditure or reduced feeding of chicks.

There is also potential for personnel and vehicles to cause direct mortality of the SPA ground nesting species, namely Arctic skua and Arctic tern, through trampling or driving over nests containing eggs or chicks.

During operation, removal of grazing pressure could result in a longer sward height and potential scrub growth within the fenced area. This may make the habitat unsuitable for the ground nesting qualifying species, Arctic skua and Arctic tern, reducing the extent of supporting habitat for these species.

The use of rodenticide can result in poisoning, both primary (due to direct consumption of bait) and secondary (due to consumption of poisoned individuals), of non-target species. Seabirds are at low risk of being affected as their diet of primarily marine fish and invertebrates means that they are unlikely to either directly consume bait, or to consume dead or dying rodents. Therefore, this is not considered to represent LSE.

Fence inspections and maintenance required to ensure the effectiveness of the predator exclusion, have the potential to result in disturbance to the qualifying bird species. Inspections and minor maintenance will cause only localised and short-term disturbance and will not have significant effects on the species.

Larger maintenance tasks have the potential to result in the same effects as fence construction i.e., disturbance and mortality.

Predator monitoring has the potential to cause disturbance to breeding birds. Although each visit will be short in duration, the frequency of monitoring required may result in significant effects. This is only likely to impact ground nesting species. Monitoring stations will be located away from the cliff face for safety reasons and therefore cliff nesting species are unlikely to be affected.

Seabird monitoring will be required to determine whether the predator exclusion is providing the required compensation, however it is currently anticipated that this will follow standard, non-intrusive, protocols are designed to avoid causing disturbance to seabirds and therefore this is not considered to represent an effect.

Effects of disturbance, mortality and habitat alteration cannot be excluded and have the potential to affect the population, distribution, and extent of supporting habitat for the qualifying features, and are therefore considered as LSEs on the Rousay SPA.

4.4.2 North Orkney SPA

There is no effect pathway for the non-breeding species of the North Orkney SPA; great northern diver, Slavonian grebe and velvet scoter. These species are only present during the non-breeding season and spend the majority of time at sea, where they will not be affected by the fence installation.

Red-throated diver, which is a breeding qualifying species of the SPA, nests on ponds and lochs of which there are a small number in the northwest of Rousay, where is anticipated that the fence will be located. Although these ponds and lochs are outside the SPA, red-throated diver foraging in the North Orkney SPA are thought to nest within a 10km radius (NatureScot, 2022), and therefore any red-throated diver nesting in the northwest of Rousay may be from the North Orkney SPA population. While it is unlikely that the fence will be constructed in proximity of the ponds or lochs, it cannot be ruled out at this time, nor can the location of access routes. Therefore, the presence of construction personnel and vehicles may cause disturbance of red-throated diver, leading to reduced breeding success. No effects of direct mortality or habitat alteration are predicted for red-throated diver as the routing of the fence and access route will avoid ponds and lochs due to practicalities of construction. Outside of the breeding season, red-throated diver spend most of their time at sea where they will be unaffected by the proposed fence.

Disturbance of red-throated diver cannot be excluded at this stage and it has the potential to impact the population and distribution of the species within the SPA, and is therefore considered to be a LSE on the North Orkney SPA.

4.5 Stage 2

Stage 2 of the HRA process assesses whether the proposed measures will result in adverse effects on the integrity (AEoI) of a European site in light of the conservation objectives. At this stage it is permitted to consider any mitigation measures that will be put in place to avoid or reduce adverse effects (European Commission, 2019).

4.5.1 Rousay SPA

LSE was identified for all qualifying species due to disturbance as a result of construction, which, if undertaken during the sensitive breeding and chick rearing season, could lead to nest failure and in the extreme impact the population and distribution of the qualifying species within the Rousay SPA. LSE was

also identified for Arctic tern and Arctic skua due to mortality as a result of trampling during installation. These can be avoided by undertaking fence installation outside of the breeding bird season, thereby avoiding any potential AEoI.

Habitat alteration due to cessation of grazing with the fenced area was also identified as a LSE for Arctic skua and Arctic tern within the Rousay SPA. Increased sward height or scrub growth within the fenced area may make the area less suitable having resulting adverse effects on the distribution of supporting habitat within the SPA. This, however, could be mitigated either through managed grazing or manual cutting within the fenced area, avoiding any potential AEoI.

LSE was identified for ground nesting species as a result of disturbance during predator monitoring. However, by reducing the frequency of monitoring during the breeding season, combined with the fact that presence at each monitoring station will be only a matter of minutes, any disturbance will be minimal and will not result in AEoI.

With these mitigation measures in place there are no predicted adverse effects on any of the qualifying features of the Rousay SPA.

4.5.2 North Orkney SPA

LSE was identified for red-throated diver in the North Orkney SPA due to disturbance during installation of the fence, leading to a potential adverse effect on the population of the species within the SPA. This effect can be avoided by undertaking fence installation outside of the breeding bird season, thereby avoiding any potential AEoI.

4.6 In combination

The HRA process also requires that the effects of the project be considered in combination with the effects of other plans or projects. However, with the mitigation measures identified above, the only minor residual effect on the qualifying features of the Rousay SPA is disturbance during predator monitoring. The potential disturbance effect of this monitoring is extremely localised and short in duration such that it is considered only possible to act in combination with another activity at the same location. As the location will be fenced off this is considered unlikely and, at the time of assessment, no projects are known to be occurring along the west coast of Rousay.

Table 4-1. Summary of HRA.

Site	Feature	Status	Installation LSE	Operational LSE	Mitigation	AEOI
Rousay SPA	Arctic skua (breeding)	unfavourable no change (2015)	Disturbance Mortality	Habitat alteration due to lack of grazing Disturbance	Timing of works outside breeding bird season. Managed grazing / mowing. Reduced predator monitoring during the breeding season.	No
	Arctic tern (breeding)	unfavourable no change (2018)	Disturbance Mortality	Habitat alteration due to lack of grazing Disturbance	Timing of works outside breeding bird season. Managed grazing / mowing. Reduced predator monitoring during the breeding season.	No
	Fulmar (breeding)	favourable maintained (2016)	Disturbance	Beneficial effects	Timing of works outside breeding bird season.	No
	Guillemot (breeding)	unfavourable declining (2016)	Disturbance	Beneficial effects	Timing of works outside breeding bird season.	No
	Kittiwake (breeding)	unfavourable declining (2016)	Disturbance	Beneficial effects	Timing of works outside breeding bird season.	No
	Seabird assemblage (breeding)	unfavourable declining (2016)	Disturbance Mortality	Habitat alteration due to lack of grazing Disturbance	Timing of works outside breeding bird season. Managed grazing / mowing. Reduced predator monitoring during the breeding season.	No

Site	Feature	Status	Installation LSE	Operational LSE	Mitigation	AEOI
North Orkney SPA	Great northern diver (non-breeding)	Favourable (2019)	No effects	No effects	No effects	No
	Slavonian grebe (non-breeding)	Favourable (2019)	No effects	No effects	No effects	No
	Velvet scoter (non-breeding)	Favourable (2019)	No effects	No effects	No effects	No
	Red-throated diver (breeding)	Favourable (2019)	Disturbance	No effects	Timing of works outside breeding bird season.	No

5 Summary

In summary, the assessment of impacts related to predator exclusion/removal on Rousay has concluded that there will be no significant negative effects on any of the qualifying features of the Rousay SSSI, Rousay SPA or North Orkney SPA.

Impacts related to the installation of the predator-proof fence are disturbance of qualifying bird species and damage of qualifying habitats and plant assemblage. These impacts can be mitigated by undertaking installation outside of the breeding season for birds, careful siting of access routes to avoid sensitive habitats, and replacement of vegetation turves following installation of the buried skirt.

Operation of the fence will alter the grazing regime within the fenced area. Some of the SSSI qualifying habitats, such as maritime cliff, require a certain level of grazing or management to maintain favourable status, therefore a change in this may be detrimental to these features. Similarly, some of the ground nesting qualifying bird species will prefer specific sward height and therefore an altered grazing regime may change the suitability of the habitat for these species. These impacts can be mitigated by agreeing, with the landowner or tenant, a specified grazing (or manual habitat management) regime within the fenced area.

There is potential for a minor residual effect on the breeding bird assemblage of the Rousay SSSI as a result of secondary poisoning. The risk is minimised by undertaking the eradication outside of the breeding season, robust and diligent searching for and collection of dead and dying rodents and the use of traps that aim to prevent access to smaller rodents.

Similarly, a minor residual effect of disturbance may occur to the qualifying ground nesting bird species as a result of predator monitoring, however, this is minimised by reduced frequency of monitoring during the breeding season, to levels that will not result in significant disturbance.

Overall, the proposed predator exclusion / removal will not cause deterioration of the conservation status or prevent favourable conservation status being achieved for the any of the qualifying features of the Rousay SSSI, Rousay SPA or North Orkney SPA in the long-term and is anticipated to provide beneficial effects to the qualifying bird species. All activities related to the proposed predator exclusion/removal will require agreement with the compensation steering group, including members of the Statutory stakeholder organisations.

6 References

European Commission (2019). Managing Natura 2000 sites – The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC. https://data.europa.eu/doi/10.2779/02245

NatureScot (2022). Conservation and Management Advice. North Orkney SPA. https://sitelink.nature.scot/site/10481

Scottish Natural Heritage (2012a). Rousay Site of Special Scientific Interest Operations Requiring Consent from Scottish Natural Heritage. https://sitelink.nature.scot/site/1386

Scottish Natural Heritage (2012b). Rousay Site of Special Scientific Interest Site Management Statement. https://sitelink.nature.scot/site/1386

Thomas, S., Varnham, K. and Havery, S. (2017) UK Rodent Eradication Best Practice Toolkit (Version 4.0). Royal Society for the Protection of Birds, Sandy, Bedfordshire. http://www.nonnativespecies.org/index.cfm?pageid=613

West of Orkney
Windfarm