FIVE ESTUARIES OFFSHORE WIND FARM

VOLUME 5, REPORT 5.6: LESSER BLACK-BACKED GULL IMPLEMENTATION AND MONITORING PLAN – (CLEAN)

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In preparation of this document Five Estuaries Wind Farm Ltd has made reasonable efforts to ensure that the content is accurate, up to date and complete for purpose.

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DEFINITION OF ACRONYMS

Term	Definition
AEoI	Adverse Effect on Integrity
AOE	Alde-Ore Estuary
AON	Apparently Occupied Nests
DCO	Development Consent Order
ETG	Expert Topic Group
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Overriding Public Interest
LBBG	Lesser Black-backed Gull
LIMP	Lesser Black-backed Gull Implementation and Monitoring Plan
MMF	Mean-Max Foraging Range
NE	Natural England
OOEG	Offshore Ornithology Engagement Group
OTB	Outer Trial Bank
OWF	Offshore Wind Farm
RAG	Red, Amber, Green
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SD	Standard Deviation
SMP	Seabird Monitoring Programme
SNCB	Statutory Nature Conservation Bodies
SPA	Special Protection Area
VE	Five Estuaries Offshore Wind Farm
VE OWFL	Five Estuaries Offshore Wind Farm Limited

GLOSSARY OF TERMS

Term	Definition
Development Consent Order	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ).
Environmental Statement	Environmental Statement (the documents that collate the processes and results of the EIA).
Export Cable Corridor (ECC)	The area(s) where the export cables will be located.
Habitats Regulation Assessment (HRA)	The assessment of the impacts of implementing a plan or policy on a European Site (as required by the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended)), the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it will adversely affect the integrity of the site
Mitigation	Mitigation measures, or commitments, are commitments made by the project to reduce and/or eliminate the potential for significant effects to arise as a result of the project.
NSIP	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO under the Planning Act 2008. These include proposals for offshore wind farms with an installed capacity over 100MW.
Order Limits	The extent of development including all works, access routes, TCCs, visibility splays and discharge points. (Not Red Line Boundary (RLB))
Special Area of Conservation (SAC)	A protected site under the Conservation of Habitats and Species Regulations (2017).
Special Protection Area (SPA)	Sites designated under EU Regulations (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive Regulations.
The Applicant	Five Estuaries Offshore Wind Farm Limited (The Applicant).

1 INTRODUCTION

1.1.1 This document presents the lesser black-backed gull (*Larus fuscus; LBBG*) implementation and monitoring plan (LIMP) that will guide the compensation measures for Five Estuaries Offshore Wind Farm (VE). VE is a proposed extension to the operational Galloper Offshore Wind Farm. VE will be situated approximately 37 km off the coast of Suffolk, England (at its closest point). The LIMP has been developed in consultation with Natural England and the RSPB through the Expert Topic Groups (ETGs) and specific meetings with both Natural England and the RSPB.

1.1.2 The LIMP is part of the Habitat Regulation Assessment (HRA) Derogation Case and is a follow on document from the LBBG roadmap (Volume 5, Report 5, Annex 5.3: Lesser Black-backed Gull Compensation – Evidence, Site Selection and Roadmap) and sets out how the final compensation scheme would be developed, implemented and monitored. This process, is described in more detail below.

1.1.3 This document presents implementation plans for predator exclusion fencing and habitat restoration for the Orford Ness site and predator eradication and monitoring and habitat management for the Outer Trial Bank (OTB) site. It details the plans for implementation and subsequent maintenance and monitoring. As set out in the LBBG Site Selection and Roadmap document (Volume 5, Report 5.3) both schemes are feasible options to provide at least enough compensation for the impacts of the VE project. The Orford Ness site is included in the order limits for the VE DCO application. The OTB site is owned by The Crown Estate and is on lease to the Department for Environment Food and Rural Affairs (DEFRA). Discussions are ongoing with The Crown Estate and DEFRA regarding how a scheme at OTB would be secured and delivered. This implementation and monitoring plan supports the derogation case submitted by VE for the potential adverse effect on integrity (AEoI) on the LBBG qualifying feature of the Alde-Ore Estuary (AOE) Special Protection Area (SPA).

1.2 DEROGATION PROCESS

1.2.1 As part of the Development Consent Order (DCO) application, Five Estuaries Offshore Windfarm Ltd (VE OWFL) is required to produce a Report to Inform Appropriate Assessment (RIAA) (Volume 5, Report 4) in order to provide the information required by the Competent Authority to undertake its HRA. If the HRA process deems that AEoI cannot be excluded, a derogations process can be followed. In the event that no alternative solutions can be found, and if there are imperative reasons of overriding public interest (IROPI), the final stage of the derogations process is to develop measures to compensate for adverse effects on a site, as set out in the derogation case document (VEOWFL 2023, Environmental Statement: Volume 5, Report 5: Habitats Regulations Assessment 'without prejudice' derogation case).

1.2.2 The potential LBBG mortality from VE (individuals per annum) and resulting compensation requirement (number of additional breeding pairs per annum provided by the compensation measure(s)), has been calculated following completion of the RIAA. Demographic data for LBBG from Horswill & Robinson (2015) has been used to calculate the number of additional breeding pairs required to produce sufficient breeding adults to compensate for the predicted impacts.

PREDICTED IMPACTS

1.2.3 LBBG are predicted to be affected by VE due to their relatively high risk of collision with offshore wind farms (OWFs) (Bradbury *et al*., 2014). This is due to a larger proportion of their flight height distribution overlapping with the turbine swept area compared to the majority of other species. Given the Project location they are also found within the array year-round at varying densities.

1.2.4 AOE SPA is 37 km away from VE, and within mean-max foraging range (MMF) + 1 standard deviation (SD) from VE for LBBG, and there is, therefore, potential breeding season connectivity between the SPA and VE. Concern regarding collision risk has been raised for LBBG on other projects by NE, and recent decisions on other offshore wind projects (e.g. Norfolk Boreas, Norfolk Vanguard, East Anglia ONE North and East Anglia TWO) concluded that AEoI could not be ruled out for LBBG at AOE SPA when considered in-combination with other projects. Following the assessment of LBBG for the RIAA it was concluded that AEoI could be ruled out as a project alone impact (RIAA: Section 11.4) and that, as with the projects mentioned above, AEoI could not be ruled out for LBBG at AOE SPA when considered in-combination with other projects (RIAA Section 12.4).

2 PROPOSED COMPENSATION MEASURES

2.1.1 Following the compensation measure longlisting ('Five Estuaries Offshore Wind Farm: Potential compensation measures longlist report' (VE OWFL, 2022a)) and shortlisting process ('Five Estuaries Offshore Wind Farm: Compensation measures shortlist technical note' (VE OWFL, 2022b)), combined with consultation with Natural England and the RSPB at the ETG in August 2023 and subsequent meetings the following options for measures have been selected for compensation for LBBG:

- Orford Ness (AOE SPA);
  - Predator exclusion fencing;
  - Predator monitoring and control;
  - Habitat restoration and management. OR
- Outer Trial Bank
  - Predator monitoring and eradication;
  - Habitat management.

2.2 PREDATOR EXCLUSION FENCING

2.2.1 LBBG eggs and chicks are predated by a range of predators. The main mammalian predators in the UK are foxes (*Vulpes vulpes*) and mink (*Neovison vison*) (Craik, 2007; Furness, 2013; Ross-Smith *et al*., 2014). LBBG also suffer predation from avian predators, for example herring gull and raven (*Corvus corax*) (Bukacinski, 1998; Bustness *et al*., 2022; Hario, 1994).

2.2.2 Predation is known to have population-level effect on LBBG, with reduced population growth shown across six colonies in the UK. Davis *et al*. (2018) show that a higher presence of foxes was linked to lower productivity. Similarly, predation by American Mink has been linked with reduced productivity across colonies in south-west Scotland (JNCC, 2021b).

2.2.3 Predator exclusion fencing can be an effective conservation measure, as past studies have shown that nest survival rates can increase when reducing chick predation. For example, Davis *et al*., (2018) showed that LBBG productivity increased in areas with exclusion fencing (for foxes). Nest survival was high in both fenced and unfenced areas, which suggests that exclusion-fencing increases survival at the chick stage (rather than nest stage).

2.2.4 More widely, there is clear evidence of predator-proof fencing being an effective seabird conservation measure, including for the protection of multiple petrel, shearwater and albatross species across New Zealand, Hawaii and Portugal (Cooper, 2013).

2.2.5 There is precedent for the use of predator fencing as a compensation measure for predicted offshore wind impacts on LBBG in the UK. Norfolk Boreas, Norfolk Vanguard, East Anglia One North and East Anglia Two are delivering improved (New Zealand-style) predator fencing in the AOE SPA as compensation for their predicted impacts on LBBG at that SPA (MacArthur Green and Royal HaskoningDHV, 2022a).

2.2.6 More information on the effectiveness and design of the fencing proposed by the Applicant can be found in the LBBG roadmap (VEOWFL 2023, Lesser Black-backed Gull Compensation – Evidence, Site Selection and Roadmap).

2.3 SUPPLEMENTAL MEASURES

2.3.1 It should be noted that whilst predator fencing remains the primary compensation measure for LBBG at the AOE, it will be necessary to pursue habitat restoration / management to aid the success of any predator fencing. Therefore, the relevant roadmap steps for habitat creation can be incorporated into the workstreams for predator fencing as required (e.g. habitat restoration/ management included in the consultation, implementation plans and monitoring plans for predator fencing).

2.3.2 LBBG nest in colonies in a range of habitats, though generally showing a preference for flat, level-ground that is covered by close, short vegetation. A key factor in suitable nest locations is suitable shelter that reduces exposure to extreme weather and predators (Partridge, 1978). LBBG often nest under bracken (*Pteridium sp*), burdock (*Articum sp*), heather (*Calluna sp*) and nettle (*Urtica sp*) (BirdLife International, 2023; Ross-Smith *et al*., 2015). Intermediate and tall vegetation (~100 to 400mm) has shown to be important in providing the optimal nest microclimate for breeding birds (Kim and Monaghan, 2015).

2.3.3 Restoring suitable nesting habitat helps increase breeding site availability. It can help create new breeding habitat in areas where LBBG have not nested previously, and it could also restore breeding habitat that was lost when sites used previously have become overgrown (Ross-Smith, 2014).

2.3.4 Such habitat improvement could be delivered across a wide range of LBBG habitat types. Existing techniques (see for example Ausden (2007)) that would align with LBBG nesting requirements include:

- Grassland improvement - partial mowing (sward management) of areas of grassland to create height diversity throughout the area, to encourage the availability of both open ground for nesting, and higher vegetation for shelter;
- Sand dune restoration - the removal of scrub and trees (e.g. willow, gorse) to ensure an open vegetation profile for nesting is maintained; and
- Moorland restoration - e.g. the removal of scrubs and trees on moorland or areas of coastal heather to prevent succession and maintain suitable low, open breeding ground for breeding LBBG.

2.3.5 In addition to improving the natural habitat, the addition of artificial shelter could also be beneficial (Ross-Smith *et al*., 2015). However, published evidence of artificial shelters for this species is limited, so further consultation with species experts would likely be needed to identify suitable designs.

2.3.6 There is precedent for the use of habitat restoration to aid the success of predator-exclusion fencing within compensation plans for offshore windfarms. Norfolk Projects Offshore Wind Farms, as part of their predator fencing work, plan to carry out vegetation cutting to create suitable sward height (within areas around which predator fencing will be installed), and further habitat management options are included in the adaptive management plans (MacArthur Green and Royal Haskoning, 2022a).

2.3.7 In addition to natural vegetation management, Norfolk Projects Offshore Wind Farms propose the use of railway sleepers as artificial shelter for nesting against (Royal Haskoning, 2022). More widely, habitat creation is also proposed as a standalone compensation measure for seabirds, with for example nesting habitat improvements and restoration of lost breeding range proposed as compensation for Sandwich tern for Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects (MacArthur Green and Royal HaskoningDHV, 2022b).

2.4 PREDATOR CONTROL AND ERADICATION

2.4.1 Predator control and eradication will also be used as a compensation measure where necessary. Predator monitoring will be carried out prior to any fence being installed to ensure no predators are in the compensation area and continuous monitoring will be carried out to ensure no breaches of the fence occur. Rat eradication and other predator monitoring will be undertaken for the Outer Trial Bank site as it is believed that the decline in number of pairs is related to a reduced productivity due to rat predation of eggs and/or chicks. Further information can be found in the LBBG roadmap (Volume 5, Report 5.3).

2.4.2 Biosecurity measures including post-eradication monitoring will continue each winter with either a combination of trailcams, footprint tunnels or wax blocks. These will be monitored at least once a month over the winter period to ensure there is no recolonisation of the island. These biosecurity measures are a key priority throughout the lifetime of the project.

3 LOCATION FOR IMPLEMENTATION

3.1 FINAL SITE SELECTION

3.1.1 There are two options being considered as locations for compensation measures to be implemented: Orford Ness (AOE SPA) or Outer Trial Bank.

3.1.2 The AOE SPA site () has been selected as an option for compensation delivery, as this site will directly receive the potential impacts of VE. Therefore, compensation measures at this site would help improve LBBG populations with connectivity to the impacted sites. This location is adjacent to the Norfolk Projects compensation site (MacAruthur Green and Royal HaskoningDHV, 2022a). As yet, no breeding LBBG were found on the Norfolk Projects site after its first year, but this is not unexpected in the early stages. The VE site has been added to the project's red line boundary allowing compulsory powers to be sought and thereby secure deliverability. The compensation measures that will be used at this site are predator exclusion fencing and habitat restoration.

3.1.3 The OTB was suggested as potential LBBG compensation sites with no connectivity to VE by Natural England. The OTB site was selected as an option for compensation due to the site suitability for successful compensation measures (predator eradication and habitat management) and the support of relevant stakeholders to implement LBBG protection measures at this site. With a current population of over 500 pairs of LBBG on the OTB the location would benefit from the potential to recruit new pairs quicker than the Orford Ness site. The compensation measures that will be used at this site are predator eradication and habitat restoration/management.

3.2 SITE SUITABILITY STUDY

3.2.1 Site suitability surveys at the AOE SPA sites were carried out in December 2023, and following these surveys and consultation with landowners a preferred site was chosen. The red line boundary was refined post submission through further site visits and surveys, as well as consultation with the landowners. A change request was submitted to the Examining Authoriy following Deadline 1. This included the final compensation site at Orford Ness of approximately 6 ha, plus the access track see . The site was chosen for a variety of reasons including most appropriate habitat, low flood risk, connectivity with current compensation site and good access to the site for construction of the fence and monitoring.

3.2.2 AOE has been demonstrated to be an appropriate site for predator-exclusion fencing because this colony has seen significant declines since 2000 due to fox predation (MacAruthur Green and Royal HaskoningDHV, 2022a). Predation not only significantly reduced the population at AOE (a loss of up to 17,500 breeding pairs at Orford Ness), but the threat of predation has also changed nesting habits of LBBG, as the majority of nests have moved to rooftops (MacArthur Green and Royal Haskoning DHV, 2022a).

3.2.3 OTB was identified as an appropriate site by Natural England and the RSPB at the ETG in August 2023. The site has a breeding colony of LBBG and herring gull (*Larus argentatus*) both of which are declining in the last 20 years. Historical populations of LBBG at the site were a maximum of 2,179 pairs in 2003 and the latest colony count in 2023 found 582 pairs (SMP database, 2023). The site surveys in 2023 found a large number of brown rat tunnels suggesting a substantial breeding population on the island. The presence of rats will reduce productivity in the colony and is most likely the reason for the population decline (per comms RSPB).

3.2.4 The Applicant notes that Natural England have conducted further surveys during the 2024 breeding season and there was further evidence of rat predation found on OTB.


642000
644000
646000
648000
252000
250000
248000
N
Sudbourne
School Road
Crag Pit Cottage
Valley Farm
Well House
High House Farm
Ferry Road
Crag Farm
Crag Farm Cottages
Church Farm House
Cedar House
White Lodge
Hospital Road
Sudbourne Road
Lodge Farm Bungalow
Lodge Farm
Cobbins
Sudbourne Beach
Millfield Cottages
Mill Bdy
Bullocksheds Lane
Raydon Bungalow
Raydon Hall
The Lodge
Newton Farm
Newton Broadway Cottage
Ipswich Road
Raydon Lane
Raydon Cottage
Rectory Road
Orford
The Pavilion
B1084
River Ore
Orford Beach
Havergate Island
LEGEND
Proposed Red Line Boundary
Proposed LBBG Compensation Area
0
200
400
800
Meters
PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM
DRAWING TITLE:
Proposed LBBG Compensation Option Area
VER
DATE
REMARKS
Drawn
Checked
1
01/10/2024
For Issue
BPHB
MB
DRAWING NUMBER:
1
FIVE ESTUARIES
OFFSHORE WIND FARM

3.3 COMPENSATION REQUIREMENTS

3.3.1 The estimated compensation quantum for the predicted mortality of 5.7 birds was calculated in the LBBG Evidence, Site Selection and Roadmap document (VE OWFL, 2023). The quantum was calculated for both the VE approach and Natural England/RSPB preferred approach (site specific DAS data aging and AOE SPA productivity rates). The estimated project alone impact and compensation quantum's, presented as breeding pairs, required to compensate for these impacts can be found in Table 3.1.

3.3.2 The proposed option at AOE is a minimum of 6 ha in size. This size of area with predator fencing installed and appropriate habitat management has the potential to produce a breeding population more than the minimum required using a nesting density of 0.04 m² (or 400/ha which would equate to a maximum of 2,400 nests for the 6 ha area) (Ross-Smith *et al*, 2015). This approach follows a similar method to the lesser black-backed gull compensation strategy used by the Norfolk Projects OWFs (Royal HaskoningDHV, 2022a).

3.3.3 The option at OTB has a breeding population of LBBG that is currently almost 1,700 pairs less than the historical high so the potential for expansion is many times greater than the estimated quantum for either approach.

3.3.4 The AOE site has been included in the RLB for the DCO application to ensure that the compensation measure is secured. Agreement with the Crown Estate (OTB owners) is currently being sought regarding the compensation at the OTB.

3.3.5 The Applicant believes that the HOW4 methods for calculating compensation quantum and the Applicant's approach (5.7 mortalities) are appropriate for determining compensation levels for the lesser black-backed gull. Specifically, a ratio of 2:1 applies to the AOE SPA and a ratio of 3:1 to the OTB. As a result, if compensation measures are implemented at the AOE SPA, an annual quantum of 43 pairs would be needed. Conversely, if these measures are implemented at the OTB, an annual quantum of 65 pairs will be required. Either measure has the potential to deliver compensation far in excess of these figures.

Table 3.1 Estimated compensation quantum's based on VE and Natural England/ RSPB preferred approaches.

LBBG Compensation Quantum				
Methods	HOW04 Applicant		HOW04 NE	
Ratio	Mean	UCI	Mean	UCI
1:1	21.4	100.3	42.42	199.06
2:1	42.8	200.6	84.84	398.12
3:1	64.2	300.9	127.26	597.18

4 STAKEHOLDER ENGAGEMENT

4.1.1 Engagement with stakeholders has been ongoing since June 2023 with Section 42 comments from Natural England and the RSPB in regard to LBBG compensation, followed up by the ETG in August 2023. Following the ETG, VE have been in constant contact with Natural England and had several meetings with the RSPB to help progress the compensation measures. The Orford Ness site went out to public consultation in December and this process was completed at the end of January, including meeting with local and regional councils. A meeting in January 2024 with The Crown Estate (TCE) regarding the ownership and management of OTB was also held. Following this, consultation with the RSPB highlighted some knowledge gaps in the OTB which VE intends to help address as part of the compensation measures (Section 6.4.18).

4.1.2 Stakeholder engagement will be required throughout the development of the predator exclusion planning process.

4.1.3 As mentioned above, stakeholders have already been key in the site selection process. Following consent, a steering group named the Offshore Ornithology Engagement Group (OOEG) will be convened by VE OWFL to address any requirements within the DCO. This group will assist in defining the details of any final site refinement, implementation, maintenance, monitoring, reporting, and any other relevant matters as determined by VE OWFL. It is envisaged that core members of the OOEG will be the relevant Statutory Nature Conservation Bodies (SNCBs), as well as the local planning authority and owners and/or managers of the sites at which predator fencing is planned to be implemented. RSPB and other relevant parties will also be invited to form part of the OOEG in an advisory capacity. For the Orford Ness site the OOEG will coordinate with ScottishPower Renewables and Norfolk Boreas (Norfolk Projects), with the potential for cross attendance from other wind farms for the OTB site. The OOEG will help produce the final plan for approval from the Secretary of State under the DCO schedule.

4.2 DELIVERY OF THE IMPLEMENTATION PLAN

4.2.1 The final implementation and monitoring plan will be presented to the steering group before being submitted to the Secretary of State. These aspects include a timetable for the preparation and delivery of the LIMP, schedules of meetings and a dispute resolution procedure. The dispute resolution procedure will allow any disputes between parties to be resolved quickly and avoid any delays.

5 ALDE-ORE ESTUARY

5.1 AIM

5.1.1 This section outlines the implementation plan for predator exclusion fencing at AOE. The measures, along with the corresponding timeline and plans, are site-specific to achieve appropriate implementation at this site and will thus be discussed separately from plans at the other selected site, OTB.

5.2 DESIGN

5.2.1 The fence design has been created through discussions with key stakeholders and guidance, including the RSPB guide on predator exclusion fencing (White and Hirons, 2019). LBBG predator exclusion fencing that was used for compensation measures by the Norfolk Projects Offshore Wind Farms also provided guidance for fence design, as this project used designs that had had previous success excluding predators at RSPB reserves (MacArthur Green and Royal Haskoning DHV, 2022a). The key aspects of this fence design include:

- A minimum height of 1.8m and maximum height of 2.0m;
- Wire mesh with 50mm by 100mm spacing, and a gauge of at least 1mm to prevent foxes chewing through it;
- At least 600mm will be buried horizontally at a depth up to 150mm;
- Material at the base will be scraped back using a digger to a depth of 100-150mm and a width of no more than 1m, into which the lower section of the fence will be laid, before being recovered with the scraped back material;
- Drainage channels will include mesh to the base to prevent access by aquatic species (e.g. otter);
- A loose angled overhang of at least 300 mm will be at the top of the fence will be implemented to prevent foxes climbing the fence; and
- Metal strainer and support posts that are resistant to salt water corrosion, will be used, with a hollow cross-section which will be pushed (not hammered) into the ground using the arm of a digger, thereby reducing impact noise during installation and avoiding the need for excavation or use of concrete.

5.2.2 Following lessons learnt from the Norfolk Projects compensation site in 2023 and 2024 breeding seasons the Applicant will seek to use several of the adaptive management measures from the beginning of the measure, namely deploying decoys birds, playing play back tape lures and creating nesting platforms within the proposed site at the AOE SPA, to increase the likelihood of successful colonisation.

5.3 IMPLEMENTATION TIMETABLE

5.3.1 It is planned that these compensatory measures are to be completed three full breeding seasons before the operational phase of VE. The location adjacent to the Norfolk Projects compensation site should expediate success were their compensation measures to be successful. Therefore, this site will potentially receive a net benefit from these compensation measures by the time VE becomes operational.

PRE-IMPLEMENTATION TIMETABLE

5.3.2 The site has been secured in the red line boundary and, if consent for the project has been granted, approval from the Secretary of State for the predator proof fencing will be applied for following consultation on the final layout of the site with the OOEG. The installation of the fencing is scheduled for completion prior to the commencement of the LBBG breeding season (March 1) three years before the VE OWF is operational in 2030.

5.3.3 Planning permission will be applied for, and it is not considered to constitute an 'EIA development' under the Infrastructure Planning (EIA) Regulations 2017 (as amended) or the Town and Country Planning (EIA) Regulations 2017. The planning application will be submitted to the East Suffolk Council. SSSI Assent will be sought from Natural England for the installation and maintenance of the fencing and vegetation management.

PRE-IMPLEMENTATION MONITORING

5.3.4 Monitoring will be required for all stages of the proposed predator exclusion program (i.e., pre-, during and post- predator exclusion). The detail of monitoring proposals will be discussed with the OOEG, with key details to be coordinated with the Norfolk Projects monitoring plan to avoid extra disturbance by reducing the numbers of required visits. A full timetable of the monitoring plan can be found in Section 5.4.6.

5.3.5 Pre-implementation monitoring will be undertaken at the selected site to quantify the abundance and distribution of predators. Where possible, this will be further supplemented with the collection of indirect and/or direct evidence of predation on seabirds.

5.3.6 Pre-implementation monitoring will also incorporate other relevant data, such as up-to-date seabird population counts and productivity data where possible. The pre-implementation datasets will be used as a baseline, against which any population and/or productivity changes can be assessed to determine the success of the predator exclusion measure.

5.3.7 A mammal survey will be carried out to inspect the compensation area immediately before the fence is installed to ensure no large mammals are inside the area. A group of surveyors will walk parallel lines across the site at the same time to flush any mammals out the one open side of the fence. This will occur several times during the day prior to the fence being completed to ensure no mammals are present.

5.3.8 Surveys for fox dens, badger sets and otter holts will be conducted prior to this, although the site is considered unsuitable for these, as the presence of these would reduce the effectiveness of the flushing method. If any are found the appropriate actions will be followed prior to the fence installation.

5.4 MAINTENANCE

POST-IMPLEMENTATION TIMETABLE

5.4.1 The maintenance of these compensation measures will include grass cutting to maintain the optimal nesting habitat and vegetation for LBBG. The Norfolk Projects Offshore Wind Farm have suggested the use of a variety of maintenance options to provide the optimal nesting habitats for LBBG (MacArthur Green and Royal Haskoning DHV, 2022a). The selected site will be broken down into habitat classes:

- No management required;
- Minimal management: 1-2 days strimming per year.
- Moderate management: up to 10 days strimming and removal of material per year.

5.4.2 Habitat restoration will follow similar methods used at the Norfolk Projects Offshore Wind Farm. As part of the implementation of the compensation measures, trials of different cutting regimes on both minimal and moderate management areas creating a patchwork effect of sward lengths will help identify the optimum sward height and/or combination of sward heights for optimum breeding success. The habitat management will be adaptive to any new evidence especially from the Norfolk Projects site that will have been managed for least two breeding seasons prior to the VE site. It should be noted that any vegetation management will be undertaken outside of the breeding season. Once a colony has established, and increased nutrients are noted to be the site, consideration may be given to removing cut vegetation from the site, which would therefore help reduce the potential additional nutrients arising from nesting LBBG.

5.4.3 Consultation with the landowner revealed that habitat maintenance at the Norfolk Projects compensation site was challenging in 2024 due to unusually wet weather during the late winter and spring, limiting the access to the site for the equipment. The Applicant has taken note of this and will consult with stakeholders on suitable adaptive management measures to counteract any future problems due to wet weather.

5.4.4 The aforementioned maintenance schedule has been proposed by Norfolk Projects Offshore Wind Farms for its compensatory predator exclusion fencing (MacArthur Green and Royal Haskoning DHV, 2022a). This plan has already achieved stakeholder and Natural England agreement, so it provides a strong foundation to guide the predator exclusion fencing LIMP for VE.

5.4.5 The most important part of the compensation measure is that the fence remains predator proof throughout, therefore regular monitoring and maintenance of the fence will be required. During the initial breeding seasons the fence will be inspected every two weeks as recommended by White and Hirons (2019) and any damage will be repaired quickly to avoid any disturbance. During the non-breeding period the inspections will be undertaken as required, for example after any severe weather events. Any major (non-emergency) repair works (replacing rusting sections, fence posts etc) will be undertaken during this period to avoid disturbance during the breeding season.

5.4.6 If a breach in the fence is found, then mammal survey/monitoring inside the fenced area will be conducted to check for presence inside the fenced area.

MAMMAL MONITORING

5.4.7 Monitoring for mammals will continue as a key biosecurity measure as needed throughout the lifespan of the project, combined with the fence inspections during the breeding season to ensure any breach is detected quickly. A variety of monitoring methods will be adopted, as appropriate, such as sand traps deployed inside the fence to help detect footprints. Camera traps will be deployed as appropriate at potential weak points, for example corners and gateways, and night vision vantage point surveys will be conducted where required.

5.4.8 Prior to the construction of the fence monitoring will be carried out during the non-breeding season (approximately once a month but subject to review as results are gathered) to determine what predators and mammals are present. After implementation of the fence biosecurity measures will remain in place and surveys of the site will continue. In February, prior to the breeding season, a more concerted monitoring programme may be required to ensure that there are no mammals present in the site. The timing of this is critical as by March the LBBG will be setting up territory so it is key to have this concerted monitoring just prior to this (February) to ensure the site is at an optimal position to encourage nesting LBBGs

MAMMAL REMOVAL AND MAINTENANCE

5.4.9 The presence of fox, otter, badger, mink, hare and Chinese water deer are the main targets of the predator/mammal monitoring and should any of these species be found inside the fenced enclosure protocols will be in place to ensure the safe and timely removal of the predator or mammal causing disturbance. A separate protocol will be designed for each species following consultation with the relevant stakeholders.

5.4.10 The protocol will vary depending on the time of year with a focus during breeding season and the two months prior to breeding season (February – August) and lower urgency away from these months. Where a mammal has been detected a full inspection of the fencing will be conducted to avoid further ingress.

5.4.11 The protocol following detection of a mammal in the enclosure will follow these steps:

- Identify the species involved using remote survey equipment available (camera traps) and/or manned surveys;
- Assess the enclosure to see if the mammals are still in the fenced off area;
- Establish next steps: Follow mammal removal protocol; identify and fix entry point in the fencing; monitor to ensure no further ingress has occurred.

5.4.12 Cases of mammal entry to the enclosure will be noted, communicated to the OOEG and included in the annual reporting.

5.5 MONITORING AND REPORTING

MONITORING PLAN

5.5.1 Following implementation of the predator exclusion fence, monitoring of both targeted predators and LBBG populations will be undertaken and compared to data collected during pre-implementation monitoring. Monitoring will be undertaken at regular intervals throughout the operational life of VE as set out in Section 5.4.5 for the non-breeding season and Section 5.5.3 for the breeding season.

5.5.2 The following monitoring plan has had regard to that developed by the Norfolk Projects Offshore Wind Farms for their compensatory predator exclusion fencing (MacArthur Green and Royal Haskoning DHV, 2022a).

5.5.3 The following requirements will be undertaken annually following the erection of the predator exclusion fencing and will continue throughout the lifetime of the project, following the recommendations in Gilbert *et al*. (1998):

- Annual counts of breeding pairs/apparently occupied nests (AON) inside the fencing. One visit in March, April and August and two visits in May, June and July should be undertaken for a least the first three years after installation. Following

consultation with relevant stakeholders/OOEG this monitoring programme may reduce in number of visits subject to data quality not being effected.

- Productivity will be monitored at marked nests that can be easily observed until chicks can no longer be reliably associated with the nest. It is unlikely that all nests will be viewable so this will present a minimum productivity rate.
- Monitoring will be conducted outside the fenced enclosure to minimise disturbance with the use of portable hides where disturbance may be an issue. Monitoring will take place at a number of designated vantage points (VP) providing the best views of the enclosure.
- All nests will be mapped out to avoid any double counting between the various VPs.
- Monitoring of the breeding pairs will be carried out during daylight hours, preferably between 0800 and 1600 and will be conducted in good visibility and favourable weather conditions. Surveying in poor/wet weather conditions will be avoided.
- Any avian predation and/or other disturbance events will be opportunistically recorded during the surveys.
- With the agreement of the land owner adjacent land, especially building roofs will be monitored to collect the same data as the enclosure at the same time as the enclosure monitoring.

5.5.4 Further details of the monitoring methods outlined above can be found in Gilbert *et al*. (1998).

5.5.5 The following additional monitoring will be undertaken subject to agreement with relevant stakeholders (and providing there is no HPAI in the colony):

- A programme to colour ringing of chicks to help resighting and tracking efforts;
- Diet studies through opportunistic collection of pellets and/or regurgitated food collected during ringing activities;
- Look into colour ringing schemes for chicks at other regional colonies to help establish potential origins of new recruits to the compensation population.

5.5.6 Additional monitoring studies may be undertaken throughout the project lifetime of the fencing enclosure and following consultation with relevant stakeholders.

5.5.7 All monitoring and bird handling will be undertaken by qualified and experienced ornithologists to ensure it is conducted to a high standard and causes the minimum of disturbance. All monitoring will be closely observed by VE to ensure the methods are followed consistently and efficiently, minimising disturbance wherever possible.

REPORTING PLAN

5.5.8 Following the breeding season an annual report will be produced and provided to the relevant stakeholders by the end of the year.

5.5.9 If requested, an OOEG/stakeholders meeting will be organised following each years' monitoring to present any findings and will discuss any reporting issues or any adaptive management measures that may be required.

5.5.10 The planned timelines for the annual reporting will follow the stages below:

- Monitoring data collected from the season received by the end of August;
- Findings from the data presented to the OOEG/stakeholders by end of September;
- Draft report circulated by mid-October;

- Finalised report submitted to relevant stakeholders by start of December;
- Approval/final comments by end of year.
- Adaptive management begins where required in January. See Section 5.6.

5.6 ADAPTIVE MANAGEMENT

5.6.1 Should post-implementation monitoring demonstrate that the predator exclusion program is not meeting predicted colony growth expectations, an assessment will be undertaken to determine the reasons underlying the lack of success, and to inform the next steps. Next steps will consist of identifying potential improvements (or extensions) to the implemented measure, based on potential issues discovered during the assessment.

5.6.2 The key measure to the success of the compensation measure will be productivity however it is important to determine the reasoning if there is a shortfall in the expected rates for the compensation site. Status from other regional LBBG colonies should be taken into consideration when determining the performance of the compensation colony. For example, if the compensation colony has poor productivity over a period of time and the same trend is replicated throughout other regional colonies it will be indicative of wider issues beyond predation, such as food availability, disease etc. Once VE has identified the reasons for poor productivity rates the project will engage with other organisations across the region to determine how the wider knowledge could be used to support the compensation scheme.

5.6.3 Conversely, if the compensation colony performs less well than other monitored sites, this would be a strong indicator that action is required to identify and address the causes.

5.6.4 Assessments will be made following the first five years after installation of the fence focussing on and understanding the colonisation of the site. Data will be collected to evidence any activity or non-activity at the enclosure, including for example:

- If no birds are prospecting the area.
- Birds are prospecting but not settling
- Birds are settling but abandoning before egg laying

5.6.5 Each of the above examples will require separate remedial measures and data from the monitoring will aim to help understand the reason, such as disturbance or habitat issues and VE will correspond with the appropriate remedial actions.

5.6.6 During the nest monitoring specific nests will be identified for further survey work where attendance rates and trip duration of foraging will be recorded to help understand potential reasons for poor productivity. Similar studies at other locations would be beneficial to understand if this a local or regional issue.

5.6.7 Annual monitoring of the adaptive management measures will be conducted until it is agreed the colony is self-sustaining and the reproductive performance matches other nearby colonies.

5.6.8 The adaptive management measures to be considered will depend on the circumstances, however actions may include:

- Additional habitat management, conducted over winter to enhance the attractiveness for LBBG based on the preferred habitat observed at the site or

nearby and placement of old sleepers (or similar) to provide structures for birds to nest against;

- If avian predation is identified as resulting in a significant loss of eggs (e.g. corvids or other gull species) then options for minimising this which are not detrimental either to other conservation objectives or have a risk to the LBBG themselves will be investigated;
- If recruitment is low in the first years then attraction methods could be deployed including call playback and placement of more decoy birds (this method will be used from year one, so this will be an enhancement of this) within the enclosure;
- Supplementary feeding will be considered where productivity is low to help improve chick health and survival. Careful consideration must be taken for this measure as it may encourage predators such as rats, foxes or corvids to the area and may cause more problems than benefits.

5.6.9 A detailed adaptive management plan will be agreed within the final LIMP which will clearly set out the conditions for the requirement of adaptive management. This will be approved by the SoS and only conditions out with these agreed boundaries will require reapproval from the SoS. This will ensure that delays to adaptive management are minimal.

6 OUTER TRIAL BANK

6.1 AIM

6.1.1 This section outlines the implementation plan for predator eradication and habitat restoration at OTB. The appropriate measures, along with the corresponding timeline and plans, are site-specific to maximise successful implementation at this site. This section sets out the measure's design, scale, layout, implementation timetable, maintenance, monitoring, reporting, and adaptive management. It is expected the compensation measures will be carried out by the site managers and funded by the Applicant directly or possibly through the Marine Recovery Fund. The Applicant expects to be a lead member of the OOEG for this site if it is taken forward and would work closely with the site managers to ensure the compensation is implemented in line with the details set out below.

6.2 DESIGN

PREDATOR ERADICATION

6.2.1 For the rat eradication and monitoring measure at the OTB there will be no requirement for any installation of infrastructure. The presence of rats will be determined using trailcams, footprint tunnels and wax blocks. If presence is confirmed (the RSPB confirmed presence of rats in their 2023 surveys) then the eradication programme will begin. An experienced professional with a background in rat eradication projects will set out the methods, the most common practice being the placement of bait boxes in a 50m x 50m grid across the island, baited with poison. The methods follow the Island Biosecurity Manual (Thomas & Varnham, 2016).

6.2.2 Once the eradication programme is successful, there will be ongoing monitoring throughout the project life time (using trailcams, footprint tunnels and wax blocks) in the lead up to the breeding season to ensure there is no reinfestation of the island. On-going monitoring will also help detect if other predators (e.g. fox) make it on to the islands.

VEGETATION MANAGEMENT

6.2.3 During site visits and predator monitoring the vegetation will also be surveyed to ensure that the breeding areas for LBBG are not overgrown. Where it is deemed that some vegetation management is required, strimming will be undertaken before the breeding season to avoid disturbance, ideally by February. It must be noted that a range of sward lengths is advantageous to LBBG nesting so it will not be necessary to strim all the vegetation back.

6.3 IMPLEMENTATION TIMETABLE

6.3.1 These compensatory measures are to be implemented at least three years before the first operation of VE. Therefore, these sites will potentially receive a net benefit from compensation measures by the time VE becomes operational. It is proposed that with the cooperation of Natural England, the site managers and RSPB to achieve the compensation requirements.

6.4 MONITORING AND REPORTING

6.4.1 Monitoring will be required for all stages of the proposed predator exclusion program (i.e., pre- and post- predator exclusion).

PRE-IMPLEMENTATION MONITORING

6.4.2 Pre-implementation monitoring will be undertaken at OTB, with the goal being to quantify the abundance and distribution of predators using materials such as trailcams, footprint tunnels and wax blocks, and would take place in midwinter (December or January) and checked after a fortnight where feasible. If confirmed, eradication can then be carried out.

6.4.3 Where possible, this will be further supplemented with the collection of indirect and/or direct evidence of predation on seabirds. Pre-implementation monitoring will also incorporate collection of other relevant data, such as up-to-date seabird population counts and productivity data where possible. It is envisaged that population data can be obtained from the SMP database, but this could be supplemented with local or more recent datasets - consultation with site managers can be used to identify such additional data sources. Where needed, additional pre-implementation in-field monitoring of LBBG could take place. The pre-implementation datasets will be used as a baseline, against which any population and/or productivity changes can be assessed to determine the success of the predator exclusion measure.

PREDATOR ERADICATION

6.4.4 The methods for the predator eradication are outlined in Section 6.2.1 and will be confirmed in the OOEG. The predator eradication programme will be carried out prior to the breeding season (November – February), first establishing the presence of rats (and/or other predators) and then carrying out the eradication programme if necessary.

MAINTENANCE

6.4.5 The maintenance for the compensation measures on OTB will include regular (where reasonably feasible and weather permitting) checks of the bait boxes by trained professionals in the lead up to the breeding season. The maintenance of all bait boxes will be carried out during the winter with no baiting during the breeding season. Other forms of monitoring such as camera traps and footprint tunnels can be left out all year and will be monitored every visit to the island, where possible causing minimal disturbance during the breeding season.

6.4.6 Should the eradication be successful monitoring will still be undertaken every winter to ensure there is no re-infestation of the islands due to the inter-tidal nature of the island. Should a re-infestation occur then baited traps with poison will be set again as soon as is safe i.e. non-breeding season.

6.4.7 The other maintenance for this compensation measures may include some habitat management such as strimming any vegetation that is prohibiting breeding. This varies annually and will be assessed during the winter visits to determine whether it is necessary or not prior to the breeding season.

POST-IMPLEMENTATION MONITORING PLAN

6.4.8 The eradication programme will be carried out by a trained professional over the winter period, following the methods set out in the Island Biosecurity Manual (Thomas & Varnham, 2016). The design of the eradication will be set out by the professionals but will follow a similar method as set out in Section 6.2.1 and confirmed with the OOEG.

6.4.9 This would be most effective over the winter months when both food supply and the rat population are lowest. Once poison bait is no longer taken, the bait is switched for non-toxic monitoring blocks, which can then be checked for rat recolonisation or continued presence.

6.4.10 Post-eradication monitoring will continue, as required, over winter with either or a combination of trailcams, footprint tunnels or wax blocks.

BREEDING MONITORING PLAN

6.4.11 Regular visits will take place to ascertain the timings of breeding, to carry out a census of breeding population, and to monitor the health of the population (ie checking for starvation, disease and/or predation of chicks and adults). The monitoring plan will be carried out as appropriate throughout the life time of the project or until the compensation requirements for the 40 year life span of VE has been reached.

6.4.12 It is proposed that the monitoring of initial breeding seasons during implementation would occur in mid-April, early May, late May and then sometime in June - the actual dates will depend on the timings of egg-laying. Further fortnightly visits (weather and tidal dependent) would be carried out until late July to monitor the progress of the chicks. Rat presence blocks would be checked during each visit. The requirement and scope of ongoing breeding monitoring will be discussed with the OOEG.

BIOSECURITY MEASURES

6.4.13 To help ensure reinfestation does not occur biosecurity measures may be implemented. These biosecurity measures will include vessel control and bait traps at landing points to minimise the chance of reinfestation. The biosecurity measures will follow the methods set out by Thomas and Varnham (2016) in Chapter 1: Biosecurity Planning and Incursion Response. These procedures have been effective in other eradication programmes in the UK.

REPORTING PLAN

6.4.14 The following reporting plan will follow similar plans to other compensation programmes and would be similar to the plan for the AOE site (Section 5.5).

6.4.15 Following the breeding season an annual report will be produced and provided to the relevant stakeholders by the end of the year.

6.4.16 If requested, an OOEG/stakeholders meeting will be organised following each years monitoring to present any findings and will discuss any reporting issues or any adaptive management measures that may be required.

6.4.17 The planned timelines for the annual reporting will follow the stages below:

- Monitoring data collected from the season received by the end of August;
- Findings from the data presented to the OOEG/stakeholders by end of September;
- Draft report circulated by mid-October;
- Finalised report submitted to relevant stakeholders by start of December;
- Approval/final comments by end of year;
- Adaptive management begins where required in January to ensure it is in place before the beginning of the breeding season.

KNOWLEDGE GAPS

6.4.18 Following consultation with the RSPB in February 2024 it was highlighted that there were several knowledge gaps regarding the LBBG colony on OTB.

6.4.19 As part of the compensation measure for the OTB it is envisaged that VE will be able to fill some of these gaps. It is proposed that this will be part of the compensation measure rather than before due to the timescales involved. Natural England have stated the wider benefits the OTB compensation measure will have 'if this site were to be adopted, the results could yield positive outcomes for our understanding of the practicality of rat management on tidal islets, with wider benefits for seabird conservation'.

6.4.20 The following knowledge gaps have been identified:

- Is the population in decline or mid fluctuation? - There have been four colony counts in the past 14 years and all have shown declines in the population. More regular surveying during the pre-implementation stage would confirm this trend, although it is understood that surveys undertaken in 2024 by NE demonstrate continued decline in numbers.
- Is there a rat predation problem? - Surveys on the site found evidence of rats on the island. The pre-implementation monitoring with trailcams would prove whether rat predation was an issue.
- No productivity rates for the OTB. - As part of the compensation measure productivity rates would be recorded, providing a vital baseline.
- Is the decline in population due to predator pressure or other external factors e.g. a decline in food supply? Predator and productivity surveys will determine the potential pressure of predators on the population.

6.4.21 The Applicant understands that NE have conducted surveys during the 2024 breeding season and there was further evidence of rat predation found. Furthermore, the Applicant is working on producing a short report following obtaining Digital Aerial Survey data following a survey which was carried out in the vicinity of OTB this summer.

6.5 ADAPTIVE MANAGEMENT

6.5.1 Should post-implementation monitoring reveal that the predator exclusion program is unsuccessful, or less successful than anticipated, an assessment will be undertaken to determine the reasons underlying the lack of success, and to inform the next steps. Next steps will consist of identifying potential improvements to the implemented measure, based on potential issues discovered during the assessment. Should the assessment determine that the measure cannot be improved or extended sufficiently, then alternatives, such as contribution to the Marine Recovery Fund (or equivalent), may be considered in consultation with the OOEG.

6.5.2 A detailed adaptive management plan will be agreed within the final LIMP which will clearly set out the conditions for the requirement of adaptive management. This will be approved by the SoS and only conditions out with these agreed boundaries will require reapproval from the SoS. This will ensure that delays to adaptive management are minimal.

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