NORTH FALLS

Offshore Wind Farm

HABITATS REGULATIONS ASSESSMENT

Annex 3A Outline Red-Throated Diver Compensation Implementation and Monitoring Plan (~~Clean~~Tracked)

Document Reference:	7.2.3.1
Volume:	7
Date:	~~February~~ June 2025
Revision:	~~1~~2

Project Reference: EN010119

NORTH FALLS
Offshore Wind Farm

Project	North Falls Offshore Wind Farm
Document Title	Habitats Regulations Assessment Annex 3A Outline Red-Throated Diver Compensation Implementation and Monitoring Plan (Tracked)
Document Reference	7.2.3.1
Supplier	Royal HaskoningDHV
Supplier Document ID	PB9244-RHD-ZZ-OF-RP-YE-0261

Revision	Date	Status/Reason for Issue	Originator	Checked	Approved
0	July 2024	Submission	RHDHV	NFOW	NFOW
1	Feb 2025	Deadline 1	MacArthur Green RHDHV	NFOW	NFOW
~~2~~1	June 2025	Deadline 6	MacArthur Green RHDHV	NFOW	NFOW

Contents

Glossary of Acronyms

AEoI	Adverse Effect on Integrity
CIMP	Compensation Implementation and Monitoring Plan
DCO	Development Consent Order
DESNZ	Department ~~of~~for Energy Security and Net Zero
GGOW	Greater Gabbard Offshore Wind Farm
HRA	Habitats Regulations Assessments
MRF	Marine Recovery Fund
NFOW	North Falls Offshore Wind Farm Limited
OTE	Outer Thames Estuary
OWF	Offshore Wind Farm
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
RTD	Red-throated diver
RTDCSG	Red-throated Diver Compensation Steering Group
RWE	RWE Renewables UK Swindon Limited
SPA	Special Protection Area
SSER	SSE Renewables Offshore Windfarm Holdings Limited
SoS	Secretary of State
UK	United Kingdom

Glossary of Terminology

The Applicant	North Falls Offshore Wind Farm Limited (NFOW)
The Project Or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.

1 Revision ~~1~~ 2 Updates at Deadline ~~16~~

1. This document has been updated at Deadline 6 to provide updates and clarifications, along with further information on adaptive management in line with information provided in the Applicant's Response to ExQ2 [REP5-054].~~This document has been updated at Deadline 1 to provide content regarding the delivery of the compensatory measures, as requested by the Planning Inspectorate and Natural England.~~

2 Introduction

2.1 Background

2. The North Falls Offshore Wind Farm (OWF) (hereafter 'North Falls' or 'the Project') is an extension to the existing Greater Gabbard Offshore Wind Farm (GGOW), located over 40km off the East Anglian coast in England. When operational, North Falls would have the potential to generate renewable power for approximately 400,000 United Kingdom (UK) homes from up to 57 wind turbines.

3. The Applicant, North Falls Offshore Wind Farm Ltd (NFOW), is a joint venture between SSE Renewables Offshore Windfarm Holdings Limited (SSER) and RWE, both of which are highly experienced developers.

4. As part of the Development Consent Order (DCO) application, the Applicant must provide information to support the Habitats Regulations Assessment (HRA) to be completed by the Competent Authority, the Secretary of State for the Department ~~of~~for Energy Security and Net Zero (DESNZ).

5. With respect to red-throated diver (RTD) from the Outer Thames Estuary Special Protection Area (OTE SPA), the Applicant's Report to Inform Appropriate Assessment (RIAA) [APP-178] concludes that there will be no adverse effect on integrity (AEoI) of the red-throated diver features of the OTE SPA from North Falls alone or in-combination with other plans and projects.

6. In the event that the Secretary of State concludes an AEoI in the Appropriate Assessment, the Applicant has developed compensatory measures that could be applied to fully compensate for the predicted effects, which are detailed in the ~~(~~RIAA Part 4 Offshore Ornithology (**Document Reference: 7.1.4, [APP-178])** and summarised in the RTD Compensation Document **[7.2.3, Rev 2]**.

2.2 Purpose of document

7. The Red-throated Diver Compensation Implementation and Monitoring Plan (CIMP) will be produced post-consent and will set out the detailed delivery proposals for the agreed compensatory measure(s). This document provides an outline of the measure(s) which would form the basis of the final RTD CIMP. As described in the sections below, for the project-led measure to be implemented the CIMP will include details of the:

   - Scale
   - Location;

- Design;
- Delivery programme;
- Permits and licenses;
- Arrangements for monitoring, maintenance and adaptive management;
- Reporting requirements;
- Implementation and delivery programme; and
- How the RTD CIMP can be approved.

8. The purpose of this document is to set out the outline of the RTD CIMP, which will in due course be developed in consultation with stakeholders through the Red-throated Diver Compensation Steering Group (RTDCSG) and later submitted to the Secretary of State (SoS) for approval.

9. The document outlines the without prejudice Project level compensatory measure, however all or some of the approach described in this document may be substituted by a collaborative or strategic measure (see Section 12 of the RTD Compensation Document [**7.2.3, Rev 1**].

10. It is expected that should RTD compensation be required, the CIMP would be secured through the DCO and that it would require to be submitted to the Secretary of State for approval prior to construction.

2.3 Consultation

11. Pre-consent consultation is described in the Compensatory Measures Overview [**Document Reference 7.2.1, Rev ~~1~~2**] and the Habitats Regulations Assessment Compensation Consultation [**APP-185**].

12. This section will provide a summary of the consultation that has taken place through the RTDCSG during the creation of the RTD CIMP (including, any relevant consultation undertaken prior to formal inception of the RTDCSG), which will include:

- Key decisions;
- Agreements; and
- Outstanding issues that remain under discussion.

13. Where any of these outstanding issues occur, information on proposed steps toward resolution will be provided. Additionally, details of proposed future engagements will also be detailed, including the sharing of and further action on monitoring outcomes.

14. Matters of discussion for inclusion within the RTDCSG, and therefore the group's purpose, will be regarding:

- Compensation design and site selection;
- Monitoring;
- Adaptive management options; and

- Associated triggers.

15. The specific focus of the RTDCSG will be to oversee the delivery of the compensation measures for North Falls.

3 Provision of Breeding Enhancement

3.1 Implementation and Delivery Roadmap

16. The Applicant's preferred compensatory measure (if required) is to increase productivity of breeding RTD by provision of artificial nesting rafts and/or breeding habitat management/restoration in Scotland.

17. The steps that would be followed by the Applicant to deliver the RTD raft or habitat management/restoration compensation measures are as follows:

- Selection of the locations for deployment of compensation (Section 3.3);
- Detailed design of the measures (Section 3.4);
- Secure necessary permits (Section 3.6);
- Development of the RTD CIMP in accordance with this document and in consultation with the RTDCSG (Section 3.10);
- Deploy the measures in accordance with the RTD CIMP;
- Undertake regular inspections and maintenance of rafts or habitat restoration measures (Section 3.7);
- The effectiveness of compensatory measures, in terms of augmenting RTD breeding success, will be monitored (Section 3.8) and the results reported to stakeholders;
- Adaptive management measures (Section 3.8.3.2) would be adopted should the rafts/habitat management be shown to be unsuccessful. Consultation will be undertaken with the RTDCSG to help determine the most appropriate course of action.

18. Amendments to or variations of the RTD CIMP would be in accordance with the principles and evidence base set out in the RTD Compensation Document [**7.2.3, Rev 1**] or informed by new evidence which may emerge. This would be discussed with the RTDCSG and agreed with the SoS.

3.2 Scale

19. This section will detail the scale of compensation and how this conforms with the consent decision made by the SoS.

20. The Applicant considers that if compensation is required, artificial nesting rafts and/or habitat management measures at ~~up to~~ 20 RTD breeding lochs would be appropriate to boost breeding productivity.

21. Where required, control lochs will be considered to facilitate monitoring. The success of raft provision will be evaluated by comparing breeding success between lochs with rafts and control lochs, i.e. with no rafts or natural islands.

Breeding success at control lochs, as well as other information on breeding success on mainland Scotland, will be used as a baseline, against which success of the compensatory measure (rafts) will be assessed. As far as possible, control lochs will be matched with lochs at which compensation rafts (where applicable) have been implemented, e.g. close by, of a similar size and surrounding habitat, likely to be subject to similar egg/chick predation risks, etc.

22. The success of the measure to restore breeding lochans for RTDs through peatland management is unlikely to require control lochs. This is because peatland restoration is likely to be carried out on lochs which are currently unsuitable for breeding RTDs (i.e. baseline breeding success is zero).

~~20.~~23. ~~paired with up to 20 control sites with no rafts/habitat management measures deployed.~~ The base of evidence for this scale of compensation is detailed in Section 5 of the Red-throated Diver Compensation **Document (Document Reference**: [**7.2.3, Rev ~~1~~2**]).

3.3 Location

~~21.~~24. This section will detail the specific locations where compensation will be delivered, the suitability of the sites for the delivery of the compensation measure, and how the required land rights at the locations have been secured.

~~22.~~25. Recognising that it is the Applicant's position that RTD compensation should not be required, landowner agreements will be secured post consent, if the SoS's decision determines that compensation is required. Therefore. the sites selected for compensation and as control sites will be finalised post consent, taking into account ability to reach voluntary agreements with landowners, where possible and results of surveys. Given the extensive long list identified (Section 9.4 of the RTD Compensation Document [**7.2.3, Rev ~~1~~2**], the Applicant is confident that suitable sites at the scale of compensation outlined below, will be securable. Surveys have commenced in 2025 which confirm the presence of suitable locations for RTD compensation (see Section 9.5.4.1 of the Red-throated Diver Compensation Document (**Document Reference:** [**7.2.3, Rev 2**] and site selection will be informed by further surveys in 2025 and post consent.

~~23.~~26. The Applicant's preferred regions of Scotland which are under consideration are Shetland and along the north mainland coast of Scotland (Caithness and Sutherland).

~~24.~~27. Should the required scale of compensation not be achievable in these regions, the Applicant will consider other regions and/or revisit the initial criteria used in identifying the initial long list to ensure the required scale can be delivered. This process would be completed, in consultation with the RTDCSG.

~~25.~~28. The short listing process will consider:

- Preferred regions;
    - Preferred regions are Shetland, and along the north mainland coast of Scotland. The base of evidence for this approach is detailed in Section 9 of the Red-throated Diver Compensation Document **(Document Reference:** [**7.2.3, Rev ~~2~~1**]).

- Stakeholder feedback;
  - Consultation during site selection will be undertaken with relevant stakeholders in Scotland, e.g. NatureScot and the Royal Society for the Protection of Birds (RSPB). Additionally, local knowledge from ornithologists and information on historic RTD breeding in the area will be sought.
  - Consultation will be undertaken with the Local Planning Authority once the final region(s) are confirmed.
- Landowner feedback;
  - Landowners will be consulted and consideration given to loch access, both for installing rafts or management/restoration measures and for subsequent monitoring.
- Site visits to confirm ecological suitability;
  - Once land access has been confirmed for each loch, the site will be visited to confirm the suitability of the loch for breeding RTDs. This can only be done in the breeding season (April to September) as it is not possible to confirm whether a loch is used by RTDs outside of the breeding season. As discussed above, site visits have commenced in 2025.

3.4 Design

~~26.~~29. This section will detail the selected method of breeding habitat enhancement e.g. raft design and installation and maintenance requirements and/or habitat management methods. The method(s) selected will be determined by the selected location and relevant pressures on RTD breeding success at each location.

3.4.1 Provision of artificial nesting rafts

~~27.~~30. Artificial nesting rafts will be installed in lochs in areas already used by RTDs.

~~28.~~31. Raft construction will follow successful methods used previously in Scotland, Finland and North America. Advice will be sought on how best to construct durable rafts, both from published literature and from contacting those with experience of constructing and deploying nesting rafts in Scotland and Finland.

~~29.~~32. Nummi et al. (2013) used the following method for raft construction in southern Finland:

- A piece of peat with vegetation was taken from the edge of the breeding loch and placed on a platform that was approximately 1m x 1m. Below the raft were two 20 litre plastic canisters to provide buoyancy;
- The raft was anchored to the bottom of the waterbody by a rope attached to a heavy rock;

- The raft needed to be at least 15cm above the water level but not so high that divers could not easily enter and exit the nest on the raft;
- The vegetation on the raft continued to grow, providing cover for nesting divers.

~~30.~~33. Care will also be given to where rafts are sited within breeding lochs, taking into account prevailing wind conditions with the aim of placing rafts in sheltered areas. Also, consideration will be given to any human disturbance, looking for areas with least disturbance.

3.4.2 Habitat management to reduce peat erosion and draining of breeding lochs

~~31.~~34. Habitat management may include (Plantecol Ltd, 2019):

- Blanket bog restoration in proximity to lochans by:
- Blocking eroding gullies;
- Reprofiling gullies and peat haggs (single vertical cliffs of peat);
- Re-vegetating the blanket bog habitat surrounding the lochan/loch to improve stability;
- Raising the water level at former or potential breeding lochans by reducing the size of outflow channels and allowing rainwater to accumulate; and/or
- Enlarging small lochans that are considered to be at, or just below the minimum size required for successful RTD breeding.

3.5 Delivery programme

~~32.~~35. This section will lay out the programme for the application and long-term delivery of the compensation. It will confirm the programme for securing land access agreements, and any other relevant approvals that are necessary to enable the enactment of the compensation measures, as well as detail the programme for delivery.

~~33.~~36. The compensatory measure would be installed one breeding season prior to construction of the North Falls array area.

~~34.~~37. It is expected that monitoring of RTD breeding success will be required annually for the first three years or until the measure is deemed to be operating successfully. Thereafter, the frequency of monitoring over the life of the Project ~~The need for ongoing monitoring~~ will be discussed with the RTDCSG and agreed with the SoS.

~~35.~~38. The compensatory measure(s) would remain in place for the operational lifetime of the Project.

~~36.~~39. The final CIMP will detail the timetable for implementation of the compensatory measure.

3.6 Permits and licenses

3.6.1 Landowner permission

~~37.~~40. Placing a raft in a Scottish loch or undertaking habitat management/restoration, would require permission from the landowner. This is expected to be secured via lease for the operational life of the Project, alternatively land purchase could be considered.

3.6.2 Statutory Permits

~~38.~~41. In most cases small-scale nesting rafts or habitat management/restoration outside European Sites will not necessitate permits, other than the right to use, and access the loch from the landowner (discussed above).

~~39.~~42. No permits are anticipated to be required for breeding enhancement in Scotland.

~~40.~~43. The habitat management measure is such that it would avoid triggering the following permit requirements (Plantecol Ltd, 2019):

- Water-level would not be raised by more than 0.5 metres above present levels and therefore no CAR licence under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) would be required; and
- The works would not increase the amount of stored water above the existing level by equal to or greater than 10,000m^3 and therefore the loch could not be considered a controlled reservoir Reservoirs (Scotland) Act (2011).

3.7 Routine Maintenance and Management

~~41.~~44. Rafts will be checked during the non-breeding season to ensure they are in a good state. Any repairs to maintain the rafts will be made each non-breeding season to ensure that they are in good condition for the following breeding season. This will be done for the duration of the Project operation, i.e. for the period over which compensation is required.

~~42.~~45. Lochs at which habitat management has been undertaken will also be checked during the non-breeding season to ensure the measure continues to provide a stable water level and that further peat erosion has not occurred. Any further erosion which is causing water levels to drop will be rectified.

3.8 Monitoring and adaptive management

3.8.1 Licenced surveyors

~~43.~~46. RTD are listed as 'Birds which are Protected by Special Penalties', under Schedule 1 of the Wildlife and Countryside Act 1981. This means that it is an offence to intentionally or recklessly disturb these birds whilst they are building a nest, or in, on or near a nest containing eggs or young; or to disturb dependent young even if not in the nest and licences are required to:

- Disturb a Schedule 1 species during the breeding season to monitor breeding performance and ring adults or young; and/or
- Visit the nest of a Schedule 1 species during the breeding season (to record the contents only).

44.47. North Falls will therefore ensure all surveys/monitoring is undertaken by a specialist(s), licenced to undertake this work. All management work will be undertaken outside of the breeding season to avoid any disturbance to breeding RTDs which spend the non-breeding season at sea, far from breeding lochs.

3.8.2 Monitoring

45.48. To demonstrate that the compensatory measure of raft installation/habitat management is successful, it will be necessary to demonstrate higher productivity at lochs in which rafts have been installed or habitat management measures implemented, compared with control lochs with no rafts or habitat management, i.e. the compensation will be considered to be 'successful' if mean productivity on managed lochs is higher than lochs with no management. Previous studies have shown increases in RTD productivity following raft installation of 0.3-0.4 large chicks per pair per year (Merrie et al. 1996; Nummi et al. 2013). As above, the success of the measure to restore breeding lochans for RTDs through peatland management is unlikely to require control lochs. This is because peatland restoration is likely to be carried out on lochs which are currently unsuitable for breeding RTDs (i.e. baseline breeding success is zero.

46.49. As discussed in Section 3.2, rafts or habitat management measures will be implemented at up to 20 lochs. In order to determine the success of rafts, bBreeding success will be monitored at a further 20 control sites, at which no rafts ~~or habitat management has been undertaken~~have been deployed~~, will be monitored~~. Managed and control sites will be within suitable habitat for breeding red-throated divers, and monitoring of productivity at each of the raft/habitat management sites and control sites will be the same, to ensure data are comparable. Control lochs will be as close as possible to lochs at which compensation is implemented, where applicable, with the aim of all monitored lochs being subjected to similar levels of predation risk. Lochs with a raft installed will also be checked carefully for breeding attempts on the edge of the lochs as well as on the rafts. Monitoring will record occupancy of sites, breeding attempts, breeding success and ultimately the number of chicks fledged.

3.8.2.1 Monitoring productivity

47.50. RTD productivity tends to be reduced in nesting attempts that occur later in the season (Gomersall, 1986; O'Brien *et al.* 2020; Hulka, 2010; Dahlen & Erikkson, 2002; Rizollo *et al.* 2014; Bundy, 1978). RTDs that fail on their first breeding attempt, e.g. due to egg predation, will re-lay but the success of that second attempt is likely to be reduced. Therefore, it is important to start monitoring sufficiently early in the breeding season to be sure of recording the early nesting attempts as otherwise breeding success may be underestimated.

48.51. Nest failure can be increased by human disturbance, including nest site visits to assess breeding status. For example, flushing adults from their nests can increase the probability of egg predation or chilling of eggs and death of the

embryos. Consequently, it is preferable to use remote monitoring techniques where possible. For example, Hulka (2010) used temperature probes in nests to determine when a nest failed. Cameras could also be used to monitor nests which would be helpful for determining the cause of any nest failure.

~~49.~~52. Ideally, productivity monitoring should be undertaken using as few nest site visits as possible. Hulka (2010) used just two visits in a breeding season to determine productivity. Ideally, sites for monitoring productivity should be visible from a distance, to be able to look for chicks on a waterbody without needing to approach close to the site and disturbing birds.

~~50.~~53. RTD sometimes move their flightless chicks over land from the waterbody on which they fledged to a nearby, often larger, waterbody (Dahlen & Erikkson, 2002; Hulka, 2010; *pers. obs.* S. O'Brien) so neighbouring lochs (within 100m) will also be checked when monitoring for RTD chicks, subject to landowner access agreement.

~~51.~~54. RTD productivity will be monitored from late April to late August or possibly September, for any late nesting broods. Following methods used in Fraser et al (2009), Hulka (2010) and O'Brien et al (2020), an initial site visit will take place to determine whether any RTDs are attempting to nest at a loch. Where possible, remote technology (nest temperature probes, remote cameras) will be used, once it has been established that breeding is taking place. At least one further visit will be made to each compensation and control loch during the breeding season to determine whether the breeding attempt was successful or not.

~~52.~~55. The number of site visits will be limited to the minimum necessary (i.e. normally two unless a further follow up visit is needed) in order to establish breeding status. Where possible, sites will be checked at a distance with a telescope and/or binoculars. The feasibility of using drones to assess RTD breeding status will also be investigated. When no evidence of an adult sat on a nest is seen from a distance, the perimeter of the waterbody will be walked to search for any nest scrapes. Any nests found will have the contents of the nest recorded, e.g. no eggs, number of eggs, any remains of egg shell including whether the shell suggests a chick hatched or the egg was predated. Any eggs found in nests will be floated in water to determine the stage of embryo development (O'Brien et al., 2018; van Päässen et al. 1984). This information will help predict when eggs can be expected to hatch and when to return to check on breeding success, while avoiding disturbing adults with newly hatched young.

~~53.~~56. For nests on rafts it may be necessary to use a small boat to visit the nest (a small inflatable that can be carried to site will be used).

~~54.~~57. A temperature probe will be placed in nests with eggs in to monitor when eggs hatch or whether the nest fails prior to hatching. The probe will record when nest temperature drops to ambient temperature, indicating that an adult is no longer sitting on the nest regularly. A follow up visit to the site will be made within one week of expected hatch date to look for chicks on the loch. The temperature probe will also be collected at this point.

~~55.~~58. At a subset of nests, cameras will be installed to monitor the outcome of the nesting attempt. Sites which cannot be viewed from a distance with a telescope

will be preferentially selected for monitoring by cameras. This is because these sites would require flushing the adults off nests to establish breeding status, rather than monitoring breeding status from a distance.

~~56.~~59. For each nesting attempt, the following potential outcomes will be recorded:

a) Eggs disappeared, presumed predated;

b) Egg shell present showing evidence of predation;

c) Evidence of nest flooding or water levels dropping;

d) Evidence of trampling or other disturbance at the nest site;

e) Egg shell present showing evidence of hatching;

f) Whole eggs present but cold, presumed abandonment of the nesting attempt by parents;

g) No chicks seen on any visit;

h) Small chicks seen but not present at a later visit; and

i) Large chicks (3/4 the size of adult) present.

~~57.~~60. Only nests with at least one ¾ grown chick will be recorded as 'successful'. RTD typically lay two eggs and can produce two large chicks, but more commonly only successfully raise one chick to fledging. It is difficult to document fledging in RTDs but once a chick reaches ¾ the size of an adult bird, survival is usually high and this provides a consistent measure of breeding success.

~~58.~~61. RTD will re-lay if a nesting attempt fails early in the breeding season. Following nest failures, the loch and nearby lochs will be visited again to look for any re-lay nests. The same methods for monitoring breeding success will be used on any re-lay nesting attempts, as for first attempts.

~~59.~~62. Additional information of relevance to breeding success will also be collected during each year of monitoring. This will include weather information (e.g. rainfall, temperature) and changes to hydrology and peat structure/erosion in the vicinity of the loch. Also, evidence of the presence of predators (including scats, visual observations and other information, e.g. from local ringers and fieldworkers) will be gathered. Great skua are known to predate RTD eggs and chicks in some parts of Scotland. This species was badly affected by Highly Pathogenic Avian Influenza, with very large declines in the populations recorded. Consequently, predation on RTD eggs and chicks may have decreased recently. However, assuming the great skua population recovers, this source of predation may become more frequent again. In other words, during the course of the compensation monitoring, RTD breeding success may decline as predation may become more frequent due to recovery of the great skua population. If this does occur, productivity at the control nests would be expected to decrease, i.e. monitoring of control nests will be important.

3.8.3 Adaptive management

3.8.3.1 Success criteria/ Circumstances under which adaptive management may be needed

~~60.~~63. RTD can have years of poor breeding success, e.g. due to poor weather or a lack of prey. Consequently, monitoring of breeding success needs to be carried out for at least three consecutive years before concluding that the measure is not successful and moving to adaptive management.

~~61.~~64. Each year, following the breeding season, the RTDCSG will be provided with a summary report describing RTD breeding success that year, at all the monitored sites (compensation and control lochs). RTDs can take up to three years to start using rafts. Therefore, it is anticipated it may take up to three years before seeing an increase in breeding success at lochs with rafts.

~~62.~~65. After three consecutive years of monitoring breeding success, the RTDCSG will be presented with a detailed report describing breeding success at lochs with rafts and control sites, including information on causes of nest failure, where known. The report will include any other information available on potential causes of nest failure (e.g. circumstantial evidence of prey availability, weather conditions, changes to populations of potential predators, etc.).

~~63.~~66. If breeding success is demonstrated to be higher at lochs with rafts installed or habitat management undertaken (i.e. the compensation aim has been achieved), no adaptive management will be required. Instead, the RTDCSG, in discussion with the Project, will agree a programme of ongoing monitoring which balances collection of necessary data whilst minimising unnecessary disturbance (e.g. annual monitoring may no longer be required, or only conducted at a subset of sites).

~~64.~~67. If breeding success at lochs at which compensation measures have been implemented is the same or lower than lochs without compensation measures, i.e. the compensation aim has not been met, the RTDCSG, in discussion with the Project, will consider options for alternative compensation measures and whether to continue with monitoring breeding success at lochs with and without compensatory measures. Consideration ~~should~~ would be given to whether a particular set of circumstances may have driven a short-term reduction in breeding success and whether further monitoring of the effectiveness of compensation is warranted, before instigating adaptive management measures.

3.8.3.2 Adaptive management measures

68. Adaptive management is necessarily responsive to circumstances and therefore cannot be specified at this stage. Given the range of factors that can reduce RTD breeding success, adaptive management will need to be tailored to address the likely cause of the compensation failing to produce more RTD juveniles.

69. As installation of nesting rafts and peatland habitat management to maintain water levels in lochs are measures that have been demonstrated to increase RTD breeding success, it is expected that rather than the entire measure failing and a whole new measure being implemented, adaptive management, if required, is more likely to be on a loch-by-loch basis. There may be some

specific lochs where breeding success remains low, despite implementation of the compensatory measure. If monitoring of breeding success shows that a particular loch continues to fail to fledge chicks, investigations will be made into the cause of this. Using remote cameras to observe the nest and monitoring water levels in the lochs will help with determining the cause of nest failure.

65. For example, rRafts used successfully to date in Scotland and Finland have no protection over the nest. However, in Scotland, aerial predators such as skuas, corvids and gulls are known to take RTD eggs and chicks. Consequently, nesting on rafts rather than the shoreline may only provide limited increased nest survival. If rafts do not produce an increase in productivity, compared with control lochs with no rafts, a new design of rafts with a roof could be deployed. However, this would only be proposed if there was sufficient evidence that predation by birds was reducing productivity at diver nests on rafts.

66.70. In North America, rafts with roofs have increased great northern diver productivity (de Sorbo et al. 2008; Furness 2013). The roof material could be chicken wire, which would stop corvids and great skuas from taking eggs from the RTD nest from above, while not acting as a 'sail' and causing the raft to blow around in the wind.

67.71. Other potential reasons why installation of rafts and/or peat management could fail to increase RTD productivity are:

- Disturbance from geese, including geese displacing RTDs on nesting rafts
- Disturbance by anglers in boats, on larger lochs
- Excessive growth of emergent vegetation due to lochs drying or eutrophication
- Scrub/willow encroachment
- A lack of vegetation on the loch edge to provide sufficient cover for RTDs nesting on the shore of a loch, e.g. due to overgrazing (not an issue for rafts)
- Trampling of nests on the shore by deer or sheep (not an issue for rafts)
- Mink or otter predation.

72. Therefore, the adaptive management would be tailored to mitigate the pressures on the RTD at the relevant location(s), for example:

- Predator control or mitigation
- Measures to reduce disturbance
- Further peatland restoration/ management
- Vegetation management

3.8.3.2.1 Predator control or mitigation

73. Predator control or mitigation would need to be tailored to the particular predators causing breeding failure at a particular loch. If evidence shows avian predation is the cause of repeated nest failure, a new design of rafts with a roof

could be deployed. However, this would only be proposed if there was sufficient evidence that predation by birds was reducing productivity at diver nests on rafts.

74. In North America, rafts with roofs have increased great northern diver productivity (de Sorbo et al. 2008; Furness 2013). The roof material could be chicken wire, which would stop corvids and great skuas from taking eggs from the RTD nest from above, while not acting as a 'sail' and causing the raft to blow around in the wind.

75. Otter predation cannot be prevented but should mink predation be an issue, this may require predator control.

3.8.3.2.2 Measures to reduce disturbance

76. Efforts will be made to select lochs for implementing compensation that are not likely to be subject to human disturbance, as far as possible. However, should this be found to be an issue, adaptive management to mitigate disturbance would be considered.

77. For lochs in Shetland where peatland habitat management is implemented as the compensatory measure, it may be that installation of a raft could provide suitable adaptive management to move the RTD away from the source of disturbance around the bank of the loch.

3.8.3.2.3 Further peatland restoration/ management

78. At some sites, peatland habitat restoration may fail to stabilise water levels in lochs due to unforeseen issues with the local topography and habitat. If this occurs, expert peat management advice will be sought on whether further intervention (peatland management) would be beneficial or whether a new loch needs to be found at which to undertake further compensation.

3.8.3.2.4 Vegetation management

79. Vegetation management may be required, e.g. removal of excessive vegetation in order to maintain a sufficient capacity of the loch for RTD.

3.8.3.2.5 Summary of Adaptive Management

~~68.~~80. Adaptive management will be based on evidence collected on the cause of breeding failure and used to identify the optimal approach to addressing any of these factors, if they are believed to be inhibiting RTD reeding success. ~~Vegetation management may be required, e.g. removal of excessive vegetation. Otter predation cannot be prevented but mink predation may require predator control.~~

81. Specific measures to address these factors, if they occur, will be discussed and agreed with the RTDCSG.

~~69.~~

~~70. Where habitat management is used as the primary compensation measure, adaptive management could include the addition of nesting rafts, if evidence suggested this would increase RTD breeding success.~~

3.9 Reporting

~~71.~~82. This section will set out the necessary reporting points in connection with the monitoring and adaptive management. This will therefore set out the objectives and timescales for the reporting.

~~72.~~83. It is expected that a monitoring report will be submitted to the RTDCSG for comment and to the SoS for sign-off annually during each year of monitoring. This monitoring report will present annual breeding success at lochs at which compensation has been deployed and at control sites as well as other information relevant to RTD breeding success.

3.10 Governance for post-consent phase

~~73.~~84. Following project consent and the identification that RTD compensation as detailed here is required, a RTDCSG will be convened, with relevant stakeholders and experts invited to be members. This group will oversee the finalisation of the RTD CIMP which will build on the information in this outline CIMP and set out the steps to be taken to put the measures in place. The RTDCIMP will then be submitted to the SoS for sign-off.

~~74.~~85. It is envisaged that in the run up to submitting the RTDCIMP to the SoS, the steering group will meet at regular intervals (e.g. 3-4 per year). An independent chair will be appointed to oversee these meetings.

~~75.~~86. Following ratification of the RTDCIMP the project will begin the steps as outlined and provide updates and reporting to the RTDCSG as agreed. As a minimum, this is likely to comprise an annual meeting following the breeding season at which the results of the monitoring will be presented and discussed and the next steps agreed.

3.10.1 Approval of the Red-throated Diver CIMP

~~76.~~87. This section will detail how the SoS can approve the RTD CIMP, to which the delivery of all agreed compensatory measures must be compliant.

4 Collaborative or Strategic Compensation

~~77.~~88. If a feasible opportunity for a collaborative compensatory measure arises within the required timescales for North Falls, this will be considered and if applicable, this section will confirm how the collaborative compensatory measure/s will be delivered.

~~78.~~89. If a viable strategic compensation funding mechanism (e.g. the Marine Recovery Fund (MRF)) were to become available within the required timescales for North Falls and is the option preferred by the Applicant, this section will confirm how a contribution will be made to a Strategic Compensation Fund.

~~79.~~90. In accordance with DESNZ (2025), contribution to the MRF could be made in substitution for the project-led or collaborative measures, once the MRF is operational and if a strategic measure is identified for RTD.

~~80.~~91. Strategic or collaborative compensation would be delivered wholly or partly, replacing the Applicant's initial proposal of project-led measures or as part of adaptive management, if required.

~~81.~~92. Further information on collaborative and strategic compensation is provided in Section 12 of the RTD Compensation Document [**7.2.3, Rev ~~1~~2**].

5 Summary

~~82.~~93. This section will provide a summary of the delivery proposals detailed above for the agreed compensatory measures for RTD.

6 References

Bundy, G. (1978). Breeding Red-throated Divers in Shetland. British Birds 71:199–208.
Dahlén B & Eriksson MOG. 2002. Breeding biology of the Red-throated Diver Gavia stellata in the core area of the Swedish population. Ornis Svecica 12: 1–33.
DESNZ (2025). Guidance Strategic compensation measures for offshore wind activities: Marine Recovery Fund interim guidance. Published 29 January 2025. Available at: https://www.gov.uk/government/publications/strategic-compensation-measures-for-offshore-wind-activities-marine-recovery-fund-interim-guidance/strategic-compensation-measures-for-offshore-wind-activities-marine-recovery-fund-interim-guidance#use-of-offshore-artificial-nesting-structures-ans-for-kittiwake-ahead-of-the-mrf
De Sorbo, C.R., Fair, J., Taylor, K., Hanson, W., Evers, D.C., Vogel, H.S. & Cooley, J.H.Jr. 2008: Guidelines for constructing and deploying Common Loon nesting rafts. Northeastern Naturalist 15 (1): 75–86
Fraser, H., Jackson, D., Madders, M. & Provan, S. 2009. Viking Bird Report. Natural Research Projects Ltd. [redacted]
Furness, R.W., MacArthur, D., Trinder, M. and MacArthur, K., 2013. Evidence review to support the identification of potential conservation measures for selected species of seabirds. Report to Defra.
Gomersall, C.H. 1986. Breeding performance of the red-throated diver Gavia stellata in Shetland Holarctic Ecology, 9 (4): 277-284.
Hulka, S. 2010. Red-throated diver breeding ecology and nest survival on Shetland. PhD thesis, University of Glasgow.
Merrie, T. D. H. 1996. Breeding success of raft-nesting divers in Scotland. British Birds 89: 306–309.
Nummi, P., Väänänen, V.-M., Pakarinen, R. & Pienmunne, E. 2013. The Red-throated Diver (Gavia stellata) in human-disturbed habitats – building up a local population with the aid of artificial rafts. Ornis Fenn. 90: 16–22.
O'Brien, S., Ruffino, L., Lehikoinen, P., Johnson, L., Lewis, M., Petersen, A., Petersen, I.K., Okill, D., Väisänen, R., Williams, J. & Williams, S. (2018) Red-Throated Diver Energetics Project - 2018 Field Season Report. JNCC Report No. 627. JNCC, Peterborough, ISSN 0963-8091. Red-Throated Diver Energetics Project - 2018 Field Season Report (Revised December 2018) (jncc.gov.uk)
O'Brien, S., Ruffino, L., Johnson, L., Lehikoinen, P., Okill, D., Petersen, A., Petersen, I.K., Väisänen, R., Williams, J. & Williams, S. 2020. Red-Throated Diver Energetics Project: 2019 Field Season Report. JNCC Report No. 637, JNCC Peterborough, ISSN 0963-8091. Red-Throated Diver Energetics Project 2019 Field Season Report (jncc.gov.uk)
Plantecol Ltd (2019). Viking Wind Farm LLP (VEWF): Implementation Plan for the Habitat Management Plan (Final November 2019). Available at:

h[redacted]

van Päässen, A.G., Veldman, D.H. & Beintema, A.J. 1984. A simple device for determination of incubation stages in eggs. Wildfowl, 35: 173-178

NORTH FALLS

Offshore Wind Farm

HARNESSING THE POWER OF NORTH SEA WIND

North Falls Offshore Wind Farm Limited

A joint venture company owned equally by SSE Renewables and RWE.

To contact please email contact@northfallsoffshore.com

North Falls Offshore Wind Farm Limited Registered Address: Windmill Hill Business Park, Whitehill Way, Swindon, Wiltshire, SN5 6PB, United Kingdom

Registered in England and Wales Company Number: 12435947