

Appendix 7.4

Outline Habitat Management Plan

Contents

A7.4.	Outline Habitat Management Plan	1
	Introduction	1
	Baseline Description	1
	Aim and Objectives	2
	Implementation of the HMP	3
	Pre-commencement Survey	3
	Objective 1: Restoration of Habitats Damaged During Construction	4
	Objective 2: Increase the extent of peatland habitats within the Proposed Wind Farm Development Area	4
	Prescriptions	5
	<i>Conifer Regeneration Management</i>	5
	<i>Forest to Bog Restoration</i>	6
	<i>Ditch Blocking</i>	6
	Objective 3: Increase extent and connectivity of existing semi-natural broadleaved woodland	7
	Prescriptions	7
	<i>Rhododendron Control</i>	7
	<i>Tree Planting</i>	8
	<i>Protection of Young Trees</i>	8
	<i>Replacement of Failures</i>	9
	Objective 4: Retention of tree belt to screen red-throated diver breeding lochs	9
	Prescriptions	9
	<i>Retain existing conifer plantation</i>	9
	Objective 5: Minimise bats colliding with operational turbines	9
	Prescriptions	10
	<i>Tree and Scrub Clearance</i>	10
	Objective 6: Enhance nesting habitat for red-throated divers	10
	Prescriptions	10
	<i>Artificial Raft for Divers</i>	10
	Work Programme	11
	Monitoring Methods	11
	Hydrological Monitoring	11
	<i>Ditch Block Monitoring</i>	12
	<i>Dipwell Monitoring</i>	12

Habitat Monitoring	12
Vegetation Monitoring	13
<i>Monitoring of Broadleaved Tree Planting</i>	13
<i>Rhododendron and Bracken Monitoring</i>	14
Carcass Searches	14
<i>Carcass Detection Surveys</i>	14
<i>Bird Carcass Search Criteria</i>	15
<i>Additional Trials</i>	15
<i>Carcass Searching Analysis</i>	15
Ornithological Monitoring	15
<i>Breeding Raptor Surveys</i>	15
<i>Diver Surveys</i>	16
Reporting and Review	16
Amendments	17

Glossary

Term	Definition
Applicant	RWE Renewables UK Onshore Wind Limited
Application Site Boundary	The red line boundary that encompasses the Proposed Development.
EIA Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of drawing together by the developer, in a systematic way, a description of the development and information relating to the likely significant environmental effects arising from a proposed development.
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.
Natural Power	Natural Power Consultants Limited, the lead EIA Co-ordinator
Proposed Development	The Proposed Development comprises the Deucheran Hill 2 repowering and extension, including up to 14 wind turbines (three with a maximum tip height of 220 m, four at 200 m and seven at 180 m), and associated ancillary infrastructure.
Proposed Wind Farm Development Area	The area within which the proposed wind farm will be located.

List of Abbreviations

Abbreviation	Description
A&BC	Argyll and Bute Council
cm	Centimetres
CSM	Common Standards Monitoring
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
FLS	Forestry and Land Scotland
ha	Hectares
HMA	Habitat Management Areas
HMP	Habitat Management Plan
IEF	Important Ecological Feature
IOF	Important Ornithological Feature
JNCC	Joint Nature Conservation Committee
km	Kilometre
LPA	Local Planning Authority
MSG	Management Steering Group
NGR	National Grid Reference
oHMP	Outline Habitat Management Plan
oPMP	Outline Peat Management Plan
RSPB	Royal Society for the Protection of Birds
RWE	RWE Renewables UK Ltd

A7.4. Outline Habitat Management Plan

Introduction

- A7.4.1. In line with the Environmental Impact Assessment Report (EIAR) **Volume 1, Chapter 7: Ecology** and **Volume 1, Chapter 8: Ornithology**, this outline Habitat Management Plan (oHMP) has been prepared by Natural Power Consultants on behalf of RWE Renewables UK Onshore Wind Ltd (RWE) (the Applicant) for the Proposed Development.
- A7.4.2. This oHMP includes the recommendations of the EIAR, based on the pre-submission surveys undertaken for the Proposed Development. The oHMP has been prepared in line with NatureScot guidance¹ and in accordance with the Royal Society for the Protection of Birds (RSPB) scoping response, which advised that an oHMP should be prepared for stakeholder consideration. The proposals outlined within this document have taken into account the aims, activities, outcomes and lessons-learned from delivery of biodiversity-related mitigation and enhancement measures associated with the existing operational Deucheran Hill Wind Farm which is due to be decommissioned in 2026.
- A7.4.3. Operational ecological and ornithological monitoring is included in the oHMP, both to monitor the success of prescriptions and to outline operational monitoring requirements for the Proposed Development as set out in **Volume 1, Chapter 7** and **Volume 1, Chapter 8** of the EIAR.
- A7.4.4. This oHMP should be considered a draft document that is subject to change. The oHMP will be finalised as part of a planning condition, to be submitted to the local planning authority for approval in consultation with relevant statutory consultees post consent. More detail on the prescriptions which will be implemented to deliver these objectives and the monitoring methods which will be used to measure their success will be included in the final Habitat Management Plan (HMP). Once finalised, the HMP will remain a working document that may require changes to be made over its lifetime to best achieve the objectives.
- A7.4.5. This oHMP includes measures for good practice mitigation during operational maintenance and habitat management throughout the operational lifetime of the Proposed Development.

Baseline Description

- A7.4.6. The Proposed Development site comprises of the existing Deucheran Hill Wind Farm, which is due to be decommissioned in 2026. As shown in **Volume 2a, Figure 1.1: Site Location** of the EIAR, the Application Site Boundary is located approximately 7 kilometres (km) north-west of Carradale, on the Kintyre Peninsula in Argyll and Bute and comprises 14 proposed turbines with tip heights of 180 metres (m), 200 m and 220 m, and associated infrastructure. The

¹ NatureScot (2016) Planning for Development: What to consider and include in Habitat Management Plans. Advice Note. Version 2.

Application Site Boundary is centred on National Grid Reference (NGR) NR 779 435 and occupies an area of 33.8 km² (3,384 hectares (ha)).

- A7.4.7. As shown in **Volume 2a, Figure 7.5: Phase 1 Survey Results**, habitats within the Proposed Wind Farm Development Area (where the proposed infrastructure is located) predominantly comprise plantation coniferous woodland. There are areas of semi-improved neutral grassland and blanket bog along the existing access track, and patches of broadleaved woodland and recently felled coniferous woodland in the wider area within the Application Site Boundary.
- A7.4.8. Evidence of protected species was found within the Study Area. The Proposed Wind Farm Development Area is used by bats species for foraging and commuting, and field signs also confirmed presence of otter (*Lutra lutra*), pine marten (*Martes martes*), red squirrel (*Sciurus vulgaris*), and water vole (*Arvicola amphibius*). Fish surveys confirmed presence of Atlantic salmon (*Salmo salar*) and brown trout (*Salmo trutta*) in the upper Carradale Water and several tributaries within the Proposed Wind Farm Development Area. Greenland white-fronted goose (*Anser albifrons*), black grouse (*Lyrurus tetrix*), red-throated diver (*Gavia stellata*), golden eagle (*Aquila chrysaetos*) and hen harrier (*Circus cyaneus*) were Important Ornithological Feature (IOF) species considered in relation to the Proposed Development. Further details can be found in **Volume 1, Chapter 7** and **Volume 1, Chapter 8**.

Aim and Objectives

- A7.4.9. The overall aim of the oHMP is to compensate and provide enhancement of the habitats impacted by the Proposed Development, and to mitigate the impact on important features such as bats, black grouse, hen harrier and red-throated diver.
- A7.4.10. The following objectives are proposed in order to address the above aim:
- **Objective 1:** Restoration of habitats damaged during construction.
 - **Objective 2:** Increase the extent and improve the condition of peatland habitats within the Proposed Wind Farm Development Area;
 - **Objective 3:** Increase extent and connectivity of existing semi-natural broadleaved woodland along the Carradale Water;
 - **Objective 4:** Retention of tree belt to screen red-throated diver breeding lochs;
 - **Objective 5:** Reduce the risk of bat collisions by removing trees within the specified buffer of turbine bases; and
 - **Objective 6:** Provide additional nesting area for red-throated divers.
- A7.4.11. Habitat Management Areas (HMAs) based on these objectives are proposed. The HMAs encompass approximately 91.68 ha of peatland habitats and 1.65 ha of woodland habitats, as shown in **Volume 2a Figure 7.8: Proposed Habitat Management Areas**

Implementation of the HMP

- A7.4.12. As described within **Volume 3, Appendix 4.1: Forestry Report**, it is recognised that the current Land Management Plan (LMP) for management of the commercial plantation does not account for the Proposed Development. Since project inception, the Applicant has therefore engaged in ongoing consultation with Forestry and Land Scotland (FLS) during the preparation of **Volume 3, Appendix 4.1** as well as this HMP to fully consider any potential impacts of the Proposed Development on the management of the Carradale Forest in relation to the current LMP. Through this process, it has been identified that two small areas proposed for habitat management within this HMP are located in areas not scheduled for felling until post 2043 within the current LMP. All other management areas of the HMP will be felled prior to or during construction. Consultation with FLS is ongoing, and the HMP is therefore considered an evolving and live document that will be further informed by that consultation, the final detailed design and further survey work. The final HMP will also be subject to review and approval and will set out monitoring methods and a timetable for both management prescriptions and monitoring surveys. Accordingly, the Applicant is confident that all areas of the HMP will be implemented in due course.
- A7.4.13. An outline schedule for the first 10 years of operation is provided in **Table A7.1 in Annex 1** of this document. As the lifetime of the Proposed Development could extend up to 40 years and the HMP is considered a live document, it is proposed that a review of the objectives and the success of management measures is undertaken in Year 10, before a proposed schedule of future management measures and monitoring is agreed.
- A7.4.14. The results of monitoring and any recommendations will be included in a summary report after each monitoring year and shared with the following stakeholders who will form part of the Management Steering Group (MSG):
- The Applicant (RWE);
 - The Landowner (FLS);
 - The Local Planning Authority (LPA): Argyll and Bute Council (A&BC);
 - NatureScot; and
 - The RSPB.
- A7.4.15. Following review of the monitoring reports, the MSG will be able to respond and discuss recommendations for the revision of the HMP.

Pre-commencement Survey

- A7.4.16. In order to apply the most appropriate and current techniques/prescriptions for habitat management and enhancement, a pre-commencement walkover survey will be undertaken within the Proposed Wind Farm Development Area in advance of the start of management works. The walkover survey will cover all areas proposed for restoration and enhancement.

A7.4.17. The walkover survey will aim to:

- Identify areas damaged by construction and in need of restoration;
- Agree final areas for peatland restoration and suitable measures such as extent of conifer regeneration to be removed and drainage ditches to be blocked within the peatland habitats;
- Assess the extent of rhododendron and bracken in specified areas for native broadleaved tree planting;
- Confirm suitability for native broadleaved tree planting in the search areas, finalise the locations, extent and species list; and
- Assess the quality of the lochans suitable for red-throated divers and the feasibility of enhancing diver nesting habitats.

A7.4.18. The pre-commencement survey will also include a hydrological walkover in line with the outline Peat Management Plan (oPMP) (**Volume 3. Appendix 10.2: Outline Peat Management Plan** of the EIAR). The aim of the hydrological walkover is to confirm the suitability of the chosen peatland restoration methods and identify the need for any additional restoration works following the construction phase.

Objective 1: Restoration of Habitats Damaged During Construction

A7.4.19. During the construction phase there will be temporary loss to habitats within the Proposed Wind Farm Development Area including areas of Annex 1 heathland habitats. These areas will be restored using best practice measures following completion of construction, for small areas this may mean leaving them to naturally recolonise from the surrounding seed bank, for large areas reseeded with seed gathered within the Application Site Boundary may be required. Additional works may also be required to reduce impacts associated with compaction. The areas of works will be confirmed during the pre-commencement walkover survey. This survey will also inform the necessary method of restoration. If after 5 years of operational phase monitoring the habitats are not recovering additional measures will be required.

Objective 2: Increase the extent of peatland habitats within the Proposed Wind Farm Development Area

A7.4.20. A key aim of the HMP will be the restoration of peatland habitats within the Proposed Wind Farm Development Area. The blanket and modified bog restoration will provide compensation on a 1:10 ratio for the habitats directly lost and 1:5 ratio for temporary loss and the buffers, as well as providing the 10% baseline enhancements in line with NatureScot guidance². This

² NatureScot (2023). Advising on peatland, carbon-rich soils and priority peatland habitats in development management. Available online: <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#Mitigation+Measures> [Accessed 20/06/26].

increase will also enhance foraging and nesting habitat for species such as hen harrier, for which **No Significant** effects were predicted within **Volume 1, Chapter 8**.

- A7.4.21. In total, the baseline Phase 1 habitat surveys (see **Volume 2a Figure 7.5**) identified 98.82 ha of peatland blanket and modified bog habitats within the Study Area. Following construction, 5.97 ha of blanket and modified bog habitats would be directly impacted by the Proposed Development due to permanent and temporary habitat loss, 4.32 ha of which would be as a result of temporary infrastructure and would therefore be restored at the end of the construction period. A further 8.52 ha of blanket and modified bog habitats would be potentially impacted by hydrological changes resulting from the Proposed Development. The indirect impacted blanket and modified bog habitats include areas within 30 m from permanent infrastructure and reduced to 15 m for temporary infrastructure as detailed in **Volume 1, Chapter 7 paragraph 7.4.10**
- A7.4.22. The area of bog restoration within the Proposed Wind Farm Development Area are shown in **Volume 2a Figure 7.8: Proposed Habitat Management Areas**. The works will be undertaken in accordance with the technical compendium³ or best practice at the time of works. Compensation and enhancement will result in an overall net increase of 91.68 ha of bog habitat and will assist in the recovery of damaged and degraded bog areas within the Proposed Wind Farm Development Area from the long-term effects of afforestation.

Prescriptions

- A7.4.23. To achieve the 91.68 ha of continuous bog habitat within the Proposed Wind Farm Development Area, the following management prescriptions are anticipated to be required. The areas of works will be confirmed during the pre-commencement hydrology assessment.
- A7.4.24. The following management prescriptions are proposed to achieve Objective 2:
- Conifer regeneration management;
 - Forest to bog restoration; and
 - Ditch blocking.

Conifer Regeneration Management

- A7.4.25. Conifer regeneration will be managed and removed as needed from 39.10 ha of the existing modified bog within the Proposed Wind Farm Development Area. As described previously, an initial walkover survey will be undertaken prior to commencement in order to map the location and severity of existing regenerating conifers within the areas targeted for peatland restoration.
- A7.4.26. Removal of conifers will be undertaken by a suitably qualified contractor. Regular assessments of non-native conifer regeneration within these areas will be undertaken throughout the operational lifespan of the wind farm and removal will be scheduled as needed. The

³ NatureScot, Peatland Action (2024) Technical Compendium - good practice for peatland restoration techniques. <https://www.nature.scot/doc/peatland-action-technical-compendium> [Accessed 20/06/26].

methodology for removal will depend on the quantity, density and size of trees to be removed. The following removal methods are commonly used for the removal of conifer regeneration:

- Hand pulling: Physical removal of scattered small seedlings by hand. Seedlings over 30 centimetres (cm) tall can be difficult to remove by hand pulling. Secateurs or a small hacksaw useful as standby for larger seedlings. Typical removal method for scattered small/medium trees at low to moderate densities.
- Lopping: Physical removal of seedlings using a hand tool. Used commonly to remove widely scattered individuals and denser growing seedlings under 50 cm.
- Brushcutting: Physical removal using a power tool. Commonly used for dense growing seedlings under 50 cm and most effective on areas of denser trees up to 15 cm in diameter at base.
- Chainsawing: Physical removal using a power tool. Most common means for removing medium size trees, scattered individuals to densely growing seedlings greater than 1 m. Cut trees are usually left on site.
- Mulching: Using a 360-degree excavator fitted with a mulching head. Recommended removal method for dense patches of small trees under 50 cm and medium size trees over 1 m. The aim of the clearance method is to convert all above-ground tree biomass into chip material and spread over the peat soil. This method removes all tree material leaving no brash on the ground.

Forest to Bog Restoration

- A7.4.27. Conifer plantation will be felled with the aim of restoring 51.48 ha of bog habitat within the Proposed Wind Farm Development Area.
- A7.4.28. Techniques that will be considered for raising the water table after felling are stump and root plate mulching, ground smoothing, furrow blocking and ditch blocking, following forest-to-bog restoration guidance as advised in NatureScot Technical Compendium³. A walkover survey to assess which techniques are the most appropriate and in which areas will be completed following felling and construction of the Proposed Development. Works will be undertaken by a suitably qualified contractor.

Ditch Blocking

- A7.4.29. Within target areas for peatland restoration, the most appropriate methods for ditch blocking within each area will be investigated via a ditch blocking assessment carried out post-consent. This assessment will identify ditches and drains to be blocked and outline recommendations for methods to be employed. Works will be undertaken by a suitably qualified contractor in accordance with the technical compendium³ or best practice at the time of works.

Objective 3: Increase extent and connectivity of existing semi-natural broadleaved woodland

- A7.4.30. Native woodlands support black grouse populations by providing shelter and nesting sites, particularly those on the edge of open habitats as this provides a food source. The habitats within the Application Site Boundary include 196.33 ha of broadleaved woodland, representing 5.80 % of the Proposed Wind Farm Development Area. Individual male black grouse were recorded during baseline surveys, and it is anticipated that native broadleaved tree planting will benefit black grouse and other woodland dependent species. In addition, broadleaved woodland in riparian habitats will create favourable habitat to migratory fish species along the Carradale Water, by providing shelter and refugia from predators.
- A7.4.31. Two semi-natural broadleaved woodland planting areas (1.01 ha and 0.64 ha) have been identified in the north-east of the Proposed Wind Farm Development Area. Two areas of 1.01 ha and 0.64 ha will be planted with native broadleaved trees along the Carradale Water. The areas will connect the existing semi-natural broadleaved woodland along the Carradale Water. The broadleaved planting area has been included in **Volume 2a, Figure 7.8: Proposed Habitat Management Areas**.
- A7.4.32. Removal and control of rhododendron and bracken will be undertaken ahead of planting of broadleaved trees. An assessment of the presence and extent of rhododendron and bracken will be undertaken during pre-commencement surveys.

Prescriptions

- A7.4.33. The following management prescriptions are proposed to achieve Objective 3:

- Rhododendron control;
- Bracken management;
- Tree planting;
- Protection of young trees; and
- Replacement of failures.

Rhododendron Control

- A7.4.34. An initial walkover survey to map bushes/areas of rhododendron will be undertaken in the tree planting areas following guidance from the Non-native Species Secretariat⁴. The tree planting areas are shown in **Volume 2a, Figure 7.8**. Methods of control likely to be considered include:
- Hand-pulling of seedlings;
 - Mechanical flailing of bushes in locations accessible to machines (i.e. not on steep slopes next to the river);

⁴ Non-native Species Secretariat (2019) Rhododendron Fact Sheet [Online] Available at: <https://www.nonnativespecies.org/non-native-species/information-portal/view/3004> [Accessed 20/06/2026].

- Manual cutting of bushes; and
- Application of herbicide to stumps, stems and/or leaves.

Bracken Management

- A7.4.35. A bracken survey would be undertaken in the broadleaved tree planting areas, as shown in **Volume 2a, Figure 7.8**. The survey will include mapping important features for reptiles within the bracken, such as hibernating areas and ditches. These areas will be avoided when undertaking management.
- A7.4.36. Management would consist of mechanical and/or chemical treatment, depending on the results of the bracken survey. Treatment would be undertaken in Years 1-5 in order to ensure that bracken does not continue to spread into the area. The frequency of treatment in years following year five would be assessed and agreed with consultees following a Year 5 bracken survey. Management will be timed to reduce the risk of harm to reptiles – cutting and rolling will not be undertaken in late summer/early autumn as this could harm slow moving gravid females⁵.

Tree Planting

- A7.4.37. A planting plan will be completed and implemented at the beginning of the operational phase of the Proposed Development with the exact planting coupes, stocking density and species mix agreed prior to planting, based on a detailed walkover survey. A range of native broadleaf tree and shrub species suitable to the site-specific conditions will be used.
- A7.4.38. The following species are likely to be suitable in the proposed area:
- Sessile oak (*Quercus petraea*);
 - Ash (*Fraxinus excelsior*); and
 - Hazel (*Corylus avellana*).
- A7.4.39. The final species list, density and proportions will be agreed with the MSG prior to implementation.

Protection of Young Trees

- A7.4.40. Saplings will be protected against damage through appropriate measures such as tree guards, stock-, deer- or rabbit-proof fencing, and will be adequately weeded until established (approximately 10 years from planting). If stock-proof fencing is required then gates will be added to the fences to permit maintenance access and the fencing will be marked with grouse

⁵ Julian, A.J. & Hand, N.K. (2018) Amphibian and Reptile Groups of the UK Advice Note 11: Managing habitat for adders: advice for land managers. Amphibian and Reptile Groups of the UK.

droppers, as recommended in the Forestry Commission technical note⁶. The location of the fencing will be identified during the walkover survey.

Replacement of Failures

A7.4.41. Monitoring of tree planting will be carried out to assess growth and record the extent of any failures (see Monitoring Methods). The following management measures will be undertaken as required in Years 1-5 to facilitate the success of planting:

- Following monitoring, replacement of failed trees may be required in October - March, following the above tree planting methodology, to maintain the minimum density outlined in best practice/industry standard guidance at the time of planting; and
- During the monitoring in Year 3 or 5 (depending upon growth of the saplings), all tree guards will be checked, maintained and replaced as appropriate.

Objective 4: Retention of tree belt to screen red-throated diver breeding lochs

A7.4.42. As identified in **Volume 1, Chapter 8** there are red-throated diver breeding lochs within 750 m of the Proposed Wind Farm Development Area. As such there is the potential for disturbance to this species during the breeding season. The existing plantation habitat will be retained around the breeding lochs to provide screening, from construction areas and potential operational phase disturbance e.g. use of the access track.

Prescriptions

A7.4.43. The following management prescriptions are proposed to achieve Objective 4:

- Retention of conifer plantation around breeding lochs.

Retain existing conifer plantation

A7.4.44. The existing conifer plantation in the vicinity of the red-throated divers breeding lochs will be monitored for areas of windfall and restocked if required to ensure appropriate screening remains for the red-throated divers throughout the operation of the Proposed Development.

Objective 5: Minimise bats colliding with operational turbines

A7.4.45. The habitats within the Proposed Wind Farm Development Area are considered of moderate value to foraging and commuting bats overall. Bats were considered as an Important Ecological Feature (IEF) in **Volume 1, Chapter 7**, and it was concluded that the Proposed Development would have a minor negative impact on bats.

⁶ Forestry Commission (2012) Technical Note: Fence marking to reduce grouse collisions. [Online] Available at: <https://cdn.forestryresearch.gov.uk/2012/12/ftn019.pdf> [Accessed 20/06/2026].

A7.4.46. Although, not a significant effect, mitigation measures will be adopted to minimise the risk of bats colliding with operational turbines, reflecting NatureScot published guidance⁷. A separation distance will be maintained around the proposed turbines. The following separation distance from turbine bases is proposed using the formula:

$$b = \sqrt{(50 + bl)^2 - (hh - fh)^2}$$

A7.4.47. Where bl = blade length; hh = hub height; and fh = feature height (i.e. height of trees assumed at 25 m). Full details of the formula are available in **Volume 1, Chapter 7**.

A7.4.48. The separation distances from blade tips were proposed within the **Volume 1, Chapter 7**, as 64 m, 90 m and 93 m based on the representative candidate turbines of 180 m, 200 m and 220 m tip respectively. These buffers will be created as part of the construction of the wind farm and keyholing of turbines in forestry.

Prescriptions

A7.4.49. The following management prescriptions are proposed to achieve Objective 5:

- Tree and scrub clearance.

Tree and Scrub Clearance

A7.4.50. Regular assessments of tree and scrub regeneration within the buffer areas will be undertaken throughout the operational lifespan of the wind farm. Removal of tree and scrub will be scheduled as needed. Possible removal methodologies for regenerating trees and scrub are hand pulling, lopping, brushcutting or chainsawing.

Objective 6: Enhance nesting habitat for red-throated divers

A7.4.51. Breeding red-throated diver breeding sites are within 750 m of the Proposed Development, as detailed in **Volume 1, Chapter 8**. Without additional mitigation there is the potential for two breeding/nesting pairs within 750 m to be disturbed/displaced during operation of the wind farm.

Prescriptions

A7.4.52. The following management prescriptions are proposed to achieve Objective 6:

- Artificial nesting raft for divers.

Artificial Raft for Divers

A7.4.53. As stated in **paragraph A7.4.16**, a walkover survey extending up to 1 km from the Proposed Wind Farm Development Area, where access permitted, will be undertaken to identify potential lochans suitable for breeding red-throated divers.

⁷ NatureScot (2021) Bats and onshore wind turbines - survey, assessment and mitigation. Version August 2021.

- A7.4.54. An artificial raft will be deployed for the benefit of red-throated divers in a suitable waterbody over 750 m from proposed infrastructure, where possible. This will aim to encourage divers away from waterbodies closer to the Proposed Development, particularly within the turbine area.
- A7.4.55. It is proposed that a one raft is installed. However, the location of the raft will be determined after a survey and confirmed in the final HMP.
- A7.4.56. Raft construction, siting and maintenance will consider the most updated guidance and expert knowledge gathered from other projects.

Work Programme

- A7.4.57. A detailed work programme will be developed in consultation with the MSG and the landowner as part of the development of the final HMP. The proposed HMP schedule is provided in **Table A7.1** in **Annex 1** of this appendix.

Monitoring Methods

- A7.4.58. This section outlines the proposed monitoring strategy to assess the success of management prescriptions in delivering the aims and objectives of the HMP. Details of monitoring, including for species highlighted within **Volume 1, Chapter 7** and **Volume 1, Chapter 8**, are provided below.
- A7.4.59. Once the details of management measures have been finalised, the programme of monitoring and reporting will be updated. This is likely to include:
- Hydrological monitoring (e.g. dipwell monitoring);
 - Habitat monitoring (e.g. Common Standards Monitoring (CSM)),
 - Vegetation monitoring (e.g. rhododendron and bracken monitoring in restoration areas as applicable); and
 - Ornithological monitoring (breeding raptor and diver surveys).
- A7.4.60. It is proposed that monitoring would be undertaken at reasonable intervals during the operational phase of the Proposed Development, including an initial baseline survey prior to management taking place. A draft timetable of all works is provided in **Annex 1** of this appendix. In each monitoring year a report of the findings will be produced along with any recommendations for changes to the HMP. Should changes to the management prescriptions or monitoring measures be required these would be discussed and agreed with the MSG.

Hydrological Monitoring

- A7.4.61. Hydrological monitoring will be undertaken within areas of bog restoration to determine the effectiveness of management measures and to identify potential remedial actions.

Ditch Block Monitoring

A7.4.62. A walkover survey will be undertaken in Year 1 and Year 5 to assess the following indicators:

- By Year 1, the ditch blocks should hold back water;
- By Year 1, there should be no erosion occurring from any ditch over-flow;
- By Year 5, the ditch blocks should be actively silting behind the blocks;
- By Year 5, standing water should be evident behind ditch blocks after periods of rain; and
- By Year 5, vegetation should be colonising the ditches both upstream and downstream of the blocks.

Dipwell Monitoring

A7.4.63. As stated in the oPMP, **Volume 3 Appendix 10.2** of EIAR, dipwell monitoring will be undertaken across the Proposed Wind Farm Development area.

A7.4.64. Dipwells will be installed prior to peatland restoration works, to monitor groundwater levels and quantify changes in the water table level. This will allow assessment of the effectiveness of rewetting within the targeted areas. Dipwell monitoring will be carried out in transects at a number of locations surrounding ditch blocking areas as well as at appropriate locations for control dipwells.

A7.4.65. Monitoring will be conducted monthly for a minimum of six months prior to restoration works, and on a monthly basis in Year 1 following restoration. Monitoring will then be undertaken once every two months during Year 2-5. This would then be reviewed, and further monitoring would be agreed if required. Frequency and duration would be dependent on the success of the restoration.

Habitat Monitoring

A7.4.66. Habitat monitoring will be undertaken in areas of bog restoration to assess habitat quality and determine the success of bog restoration prescriptions.

A7.4.67. Two methods will be used in order to provide robust monitoring data of the different areas:

- CSM; and
- Fixed-point photography.

A7.4.68. The CSM would broadly follow the methods as set out in Joint Nature Conservation Committee (JNCC) CSM for upland habitats⁸. CSM allows a simple, quick assessment of feature condition, using criteria such as frequency of taxa which are indicators of favourable condition, cover of taxa which are indicators of unfavourable condition, etc. The monitoring will use a combination of walkover and fixed-point sampling survey methodologies (quadrats). The survey will aim to

⁸ JNCC (2009) Common Standards Monitoring Guidance for Upland Habitats [Online] Available at: <https://data.jncc.gov.uk/data/78aaef0b-00ef-461d-ba71-cf81a8c28fe3/CSM-UplandHabitats-2009.pdf> [Accessed 08/06/2026].

visually assess the vegetation present, determine the condition of vegetation communities using target indicator species, and identify any obvious effects of the HMP management prescriptions. The location, distribution and number of quadrat locations will be designed prior to the survey. This will include the restored peatland areas.

- A7.4.69. The fixed-point photographs will be taken at a series of locations (to be determined during the pre-works surveys) overlooking each of the survey areas. They will provide permanent records for comparison of the effectiveness of management works.
- A7.4.70. CSM and fixed-point photography will be undertaken between March – September (where possible) in operational Years 1, 3, 5 and 10 to monitor the condition of the bog restoration areas. After Year 10 the need for further monitoring will be reviewed.

Vegetation Monitoring

- A7.4.71. It is proposed that all vegetation monitoring commences in operational Year 1. Monitoring will take place during Years 1, 3, 5 and 10 post construction, after which further monitoring requirements will be reviewed.
- A7.4.72. Vegetation monitoring will be carried out at the Proposed Development to achieve the following aims:
- Tree and scrub regeneration monitoring around turbine bases to assess sapling presence, and enable removal at an early stage, minimising habitat suitability for bats and reducing the risk of bat collisions;
 - Monitoring of planting within the broadleaved tree planting areas to assess regrowth and enable any failures to be identified and replaced;
 - Monitoring of the retained conifer woodland around the red-throated diver breeding lochs to ensure suitable density is maintained; and
 - Rhododendron and bracken monitoring within the broadleaved planting areas to assess where treatment has been partially successful or unsuccessful in control/suppression of growth.

Monitoring of Broadleaved Tree Planting

- A7.4.73. Monitoring of the native broadleaved tree and scrub planting will take place following planting and will include inspections of broadleaved tree planting. Checks will be undertaken in each area, with notes taken on the number and/or proportion of losses (i.e. failed trees and shrubs). Monitoring will take place during Years 1, 3, 5 and 10 post construction, after which further monitoring requirements will be reviewed.
- A7.4.74. The success of broadleaved tree and scrub planting will be measured against the following indicators:
- By Operational Year 3, trees and shrubs are showing sturdy top growth;

- By Operational Year 5, trees and shrubs are showing bushy growth and whether it is necessary to remove any tree guards;
- By Operational Year 10, the minimum density outlined in best practice/industry standard guidance at the time of planting.

A7.4.75. Following monitoring, replacement of failed trees and shrubs will be undertaken to maintain the required survival rate until Year 10. Any remaining tree tubes and stakes will be removed in Year 10 (if not before, following the Year 5 visit).

A7.4.76. Photographic evidence will be taken each monitoring year to provide a visual record, and results will be presented in the final monitoring report.

Rhododendron and Bracken Monitoring

A7.4.77. Monitoring will be undertaken annually in July for the first five years following planting to map rhododendron and bracken present within the broadleaved planting area whilst at full height. The results of this survey will inform the subsequent year's management.

A7.4.78. Rhododendron and bracken will be surveyed and mapped as to record the following information:

- Vegetation height;
- Density; and
- Extent.

Carcass Searches

A7.4.79. Carcass searches with dogs will be undertaken to assess potential rates of mortality for birds. These will be undertaken in conjunction with searcher efficiency and carcass persistence surveys to allow for analysis of predicted overall mortality.

Carcass Detection Surveys

A7.4.80. Carcass searching using trained sniffer dogs will be undertaken around turbines to detect the presence of birds and bat casualties. Surveys will be undertaken within a search area of a minimum of 100 m x 100 m grid (dependent upon the size of the installed turbine blades), centred on turbine locations.

A7.4.81. One week prior to the start of searches, the survey area will be subject to a clean sweep (clearance search) to ensure that any carcasses obtained on search one are from the preceding week only.

A7.4.82. The following information will be recorded:

- Turbine number;
- Date and time of when the carcass was found;

- Ten figure grid reference of carcass location;
- Distance from turbine;
- Orientation (by taking a compass bearing) relative to the turbine;
- Photograph number;
- Species, age and sex if known;
- Condition (i.e. intact, scavenged, any obvious injuries, etc.);
- Pre-defined criteria to describe search visibility; and
- Any other comments/observations.

A7.4.83. Once the required information has been recorded, carcasses will be collected by surveyors wearing latex gloves and placed within plastic containers to be stored in a freezer under licence, for later identification by hand and / or DNA.

Bird Carcass Search Criteria

A7.4.84. Searching for birds will be undertaken at each turbine base once a week for 13 consecutive weeks, between April and July (inclusive). Search intervals at each turbine should be no more than seven days from the previous search at that turbine. Deviation from the search schedule (due to access/safety issues etc) should be clearly recorded and reported back to the project manager.

Additional Trials

A7.4.85. Associated searcher efficiency trials and carcass persistence trials will be undertaken in conjunction with carcass searches for bird species.

Carcass Searching Analysis

A7.4.86. Bird carcass searches will be undertaken in Operational Years 1, 2, 3 and 5 of operation and any years beyond that, as agreed with the LPA and NatureScot.

Ornithological Monitoring

A7.4.87. As proposed in **Volume 1, Chapter 8**, the aim of ornithological surveys will be to locate breeding raptors and divers and collect information about the success of any breeding attempts, as well as to assess the requirement for further habitat management.

Breeding Raptor Surveys

A7.4.88. Surveys for breeding ground-nesting raptors will be carried out by a suitably qualified ornithologist under a Schedule 1 licence between mid-March and July and will follow standard

guidance⁹. Surveys will be undertaken from within the Application Site Boundary and public access points, within 1 km of turbines, scanning the visible habitat within the survey area for signs of breeding, such as display behaviour. During the first survey visit, areas of suitable nesting habitat for ground-nesting raptors will be assessed and mapped in order to target survey effort and to assess the suitability of the turbine area for ground-nesting raptors. The aim of these surveys will be to locate breeding raptors and collect information about the success of any breeding attempts, as well as to assess the requirement for habitat management to dissuade ground-nesting raptors from the turbine area. Surveys will take place for at least the first five years of wind farm operation, after which further monitoring requirements will be reviewed.

- A7.4.89. The raptor survey will include one visit to the golden eagle nesting site (and searching for any other establishing nest sites) within 1 km of the Proposed Development to inform disturbance risks for golden eagle.

Diver Surveys

- A7.4.90. Lochs with artificial nest rafts will be surveyed to assess the efficacy of the rafts and the success of breeding divers in these lochans. Rafts will be inspected for damage outside the breeding season and repaired when necessary. Artificial nests will be surveyed in order to confirm presence/absence of divers, and to determine the outcome of any breeding attempts. Survey methods will follow those outlined in Gilbert *et al.*¹⁰, as per current NatureScot guidance¹¹.
- A7.4.91. The survey will include any breeding diver sites and a search for any other establishing breeding sites, within 750 m of the Proposed Development during the operation phase would be undertaken to inform disturbance risks for divers.
- A7.4.92. It is proposed that ornithological monitoring is undertaken annually for at least the first 5 years of operation, with any years beyond that being agreed with the LPA and NatureScot.

Reporting and Review

- A7.4.93. Reports will be submitted to the MSG highlighting the management measures completed to date, the results of the surveys and any measures proposed for the next reporting period. Reports will be submitted annually during Years 1-5, and then every five years following Year

⁹ Hardey, J., Crick, H.Q.P., Wernham, C.V., Riley, H., Etheridge, B. & Thompson, D.B.A. (2013) *Raptors: a field guide for surveys and monitoring* [3rd Edition]. The Stationary Office, Edinburgh

¹⁰ Gilbert, G., Gibbons, D.W. and Evans, J. (1998). *Bird Monitoring Methods*. RSPB, Sandy.

¹¹ NatureScot (2025). Recommended bird survey methods to inform impact assessment of onshore wind farms [Online] Available at: <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms> [Accessed 20/06/2026].

5. The results will be regularly reviewed, to ensure the HMP objectives are being met and to determine any appropriate amendments, where practicable

Amendments

A7.4.94. The final HMP will be a live document and will be updated following monitoring results, unexpected events or changes in guidance. Approval by MSG will be sought for any amendments before revised measures are implemented.

Annex 1: Outline HMP Schedule

Table A7.1: Proposed operational management and monitoring years

Task		Construction	Operational Year									
			1	2	3	4	5	6	7	8	9	10
Habitat creation, restoration and enhancement measures												
	Survey and hydrology assessment	Y										
Objective 1	Restoration of habitats damaged during construction		Y					Y				
Objective 2	Conifer regeneration management		Y									
	Forest to bog restoration		Y									
	Ditch blocking	Y										
Objective 3	Rhododendron control		Y									
	Bracken management		Y	Y	Y	Y	Y					
	Tree planting		Y									
	Protection of young trees		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Replacement of tree failures		Y	Y	Y	Y	Y	To be reviewed				
Objective 4	Maintenance of a tree belt following significant wind fall		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Objective 5	Tree and scrub clearance	Y										
Objective 6	Artificial nesting raft for divers		Y									
	Review of the oHMP and formation of the MSG	Y										
Monitoring												
	Ditch Block Monitoring		Y	Y	Y	Y	Y					

Task	Construction	Operational Year									
		1	2	3	4	5	6	7	8	9	10
Dipwell monitoring and visual inspection of dams	Y	Y	Y	Y	Y	Y					Y
Common Standards Monitoring and fixed-point photography		Y		Y		Y					Y
Monitoring of broadleaved tree planting		Y		Y		Y					Y
Rhododendron and bracken monitoring		Y	Y	Y	Y	Y	To be reviewed				
Bird carcass monitoring		Y	Y	Y		Y	*				
Breeding raptor surveys		Y	Y	Y	Y	Y	*				
Diver surveys		Y	Y	Y	Y	Y	*				
Reporting	Y	Y	Y	Y	Y	Y					Y
Review						Y					Y

Source: Natural Power, 2026

Y = Year task will be undertaken

* To be agreed with the LPA and NatureScot beyond Year 5