Glenburnie Wind Farm

AEI Technical Appendix 8.6

Outline Biodiversity Enhancement and Restoration Plan

Author	SLR
Date	28/04/2025
Ref	405.065663.00001

Contents

1 Introduction

1.1.1 SLR Consulting Ltd (SLR) was commissioned by Renewable Energy Systems (RES) (the applicant) to produce a revised outline Biodiversity Enhancement and Restoration Plan (OBERP) to accompany the additional environmental information (AEI) for the proposed Glenburnie Wind Farm (the revised proposed development) (formerly known as Longcroft Wind Farm), located in the Scottish Borders.

1.1.2 The original proposed development is defined as all infrastructure proposed to be constructed or installed within the site as per the original planning application. The original proposed development was named Longcroft Wind Farm, however, the revised name of Glenburnie Wind Farm shall be used henceforth.

1.1.3 The revised proposed development refers to all of the permanent and temporary civil, electrical, environmental infrastructure proposed to be constructed or installed within the site included as part of the AEI submission. The site is defined as the area bounded by the site boundary (see **AEI Figure 1.2**) and not that referenced in the original application within this AEI.

1.2 Site Description

1.2.1 The site is located north-east of the A697, approximately 9.9 km north-east of Lauder in the Scottish Borders. The site is within the administrative boundary of Scottish Borders Council.

1.2.2 The topography of the site is undulating, ranging from approximately 215 metres (m) Above Ordnance Data (AOD) within the river valley at the site entrance, to approximately 490 m AOD near the summit of Hunt Law within the north-east of the site. Topography within the site is defined by two main watercourses and associated river valleys, the Soonhope Burn and Whalplaw Burn, which intersect in a north-east to south-west direction. Upland areas within the site are managed primarily as active grouse moor, while lower elevations are managed largely for livestock grazing.

1.2.3 The habitats are predominantly upland dry heath, blanket bog/degraded blanket bog and carbon rich soils (peat <50 cm).

1.3 Details of the Revised Proposed Development

1.3.1 The proposed development is for:

- up to 12 three-bladed horizontal axis wind turbines of up to 220 m tip height. The wind turbines would be nominally rated at 6.6 MW;
- at each wind turbine, associated low to medium voltage transformers and related switchgear;
- wind turbine foundations;
- hardstand areas for erection cranes at each wind turbine location;
- a network of access tracks including watercourse crossings, passing places, turning heads and site entrance from the public road network;
- borrow pits (dependent on availability of stone within the site);
- a substation compound containing electrical infrastructure, control building, welfare facilities and a communications mast;

- a battery energy storage system (BESS), rated at 50MW and associated compound;
- a transfer station;
- public road widening of the D124;
- a network of buried electrical and communication cables;
- temporary construction compounds;
- signage; and
- habitat management and biodiversity enhancement (as described in this outline OBERP).

1.3.2 The revised proposed development is expected to operate for up to 50 years following which decommissioning of the wind turbines and other infrastructure would be undertaken as required.

1.4 Purpose and Scope of this Document

1.4.1 The OBERP fulfils two main objectives:

i Firstly, it outlines the habitat restoration, management and monitoring measures proposed to compensate for the direct and indirect loss of sensitive natural/semi-natural habitats, including Annex I habitat (i.e. blanket bog and dry heath), and to mitigate for potential impacts to protected and notable species as a result of construction and operation of the revised proposed development.

ii Secondly, it functions as a plan for the delivery of biodiversity enhancement as required by national planning policy, the National Planning Framework 4 (NPF4).

1.4.2 This OBERP is intended as a precursor to a more detailed Biodiversity Enhancement and Restoration Plan (BERP), which would be produced and agreed with the Scottish Borders Council and other key stakeholders including the landowners and RSPB Scotland prior to commencement of construction.

1.4.3 The BERP will be a live document in place throughout the lifetime of the revised proposed development (anticipated to be 50 years), with monitoring results and unexpected developments adapting the plan to ensure the enhancement of habitats and species on the site.

1.5 Evidence of Technical Competence

1.5.1 This OBERP has been prepared by Rowan Smith MSc BSC (Hons). Rowan is a senior ecologist with over 6 years professional experience in the environmental sector specialising in aquatic/riparian ecology and impact assessment. Rowan has a proven track record of project managing ecological elements of large scale (2000 MW) energy infrastructure projects, including pump storage hydro schemes, wind farms and solar farms across Scotland where she compiled a range of assessments including EIA, Ecological Impact Assessments (EcIAs) and Habitats Regulations Appraisals.

1.5.2 The OBERP submitted with the original application was conducted by Beth Hanlon, Senior Ecologist at SLR Consulting Ltd. with support from Ida Bailey, Natural Capital & Nature Lead - Europe at SLR Consulting Ltd., who has provided technical review of this OBERP and other advice throughout.

1.6 Planning Policy

National Planning Policy

National Planning Framework 4

1.6.1 NPF4 was adopted by Scottish Ministers on 13 February 2023. In order to accord with the biodiversity provisions of NPF4, development proposals should demonstrate that they contribute to the enhancement of biodiversity. Of particular relevance to this project, Policy 3 of NPF4 states:

"*a) Development proposals will contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them. Proposals should also integrate nature-based solutions, where possible.*

b) Development proposals for national or major development, or for development that requires an EIA will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention. This will include future management. To inform this, best practice assessment methods should be used. Proposals within these categories will demonstrate how they have met all of the following criteria:

i *the proposal is based on an understanding of the existing characteristics of the site and its local, regional and national ecological context prior to development, including the presence of any irreplaceable habitats*;

ii *wherever feasible, nature-based solutions have been integrated and made best use of*;

iii *an assessment of potential negative effects which should be fully mitigated in line with the mitigation hierarchy prior to identifying enhancements*;

iv *significant biodiversity enhancements are provided, in addition to any proposed mitigation. This should include nature networks, linking to and strengthening habitat connectivity within and beyond the development, secured within a reasonable timescale and with reasonable certainty. Management arrangements for their long-term retention and monitoring should be included, wherever appropriate; and*

v *local community benefits of the biodiversity and/or nature networks have been considered*.

d) Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will be minimised through careful planning and design. This will take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration."

Local Planning Policy

1.6.2 The *Scottish Borders Local Development Plan* 2 (LDP2) was adopted on 22 August 2024 and sets out policies on development and land use within the Scottish Borders up to 2025. Policies of relevance to this OBERP are defined within 'Environmental Promotion and Protection' (EP) and include:

- EP1 – International Nature Conservation Sites and Protected Species;
- EP2 – National Nature Conservation Sites and Protected Species;
- EP3 – Local Biodiversity and Geodiversity; and
- EP13 – Trees, Woodlands and Hedgerows.

1.6.3 In addition to the Scottish Borders LDP2, the *Scottish Borders Local Biodiversity Action Plan*[1] (LBAP) details information regarding biodiversity which should be considered by developers at an early stage. This includes examining opportunities to enhance biodiversity, such as restoring degraded habitats and improving habitat connectivity, as part of proposed developments.

1.6.4 Of particular relevance to the revised proposed development, it sets out priority objectives and actions in relation to:

- Ecosystem restoration;
- Natural Capital;
- Wildlife and Habitats; and
- Sustainable land management and Freshwater Management

2 Methodology

2.1.1 This OBERP has been prepared with reference to relevant habitat management, peatland restoration guidance (NatureScot[2]; Gilbert & Anderson[3]) including the *International principles and standards for the practice of ecological restoration* (Gann et al[4]).

2.1.2 The aim of the OBERP is to establish the key objectives and principles by which parts of the site would be restored and managed to the benefit of biodiversity, which would then form the basis for the more detailed OBERP, post consent. It is not the intention for this document to provide full details of proposed management, much of which cannot be determined fully at this stage.

2.2 Terminology

2.2.1 The following terms have been taken from guidance produced by *International principles and standards for the practice of ecological restoration* and have been used to structure this OBERP:

- The **Scope** is the broad geographic or thematic focus of the revised proposed development.

[1] Scottish Borders Council (2018), Scottish Borders Local Biodiversity Action Plan, Available at: https://www.scotborders.gov.uk/downloads/file/5132/local-biodiversity-action-plan-spg-2024

[2] NatureScot. (2023). Advising on peatland, carbon-rich soils and priority peatland habitats in development management. [Online] Available at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management

[3] Gilbert, O. L. and Anderson, P. (1998). Habitat Creation and Repair. [Online] Available at: https://academic.oup.com/book/51074

[4] Gann, G. D., McDonald, T., Walder, B., Aronson, J., Nelson, C. R., Jonson, J., Hallett, J. G., Eisenberg, C., Guariguata, M. R., Liu, J., Hua, F., Echeverria, C., Gonzales, E. K., Shaw, N., Decleer, K., Dixon, K. W. (2019). International principles and standards for the practice of ecological restoration. Second edition. Restoration Ecology S1-S46

- The **Vision** is a general summary of the desired condition one is trying to achieve through the work of the revised proposed development.
- The **Targets** identify the native ecosystems to be restored at a site as informed by a reference model, along with any social outcomes or constraints expected of the revised proposed development.
- **Goals** are formal statements of the medium to long-term desired ecological or social condition, including the level of recovery sought. Goals must be clearly linked to targets, measurable, time-limited, and specific.
- **Objectives** are formal statements of the interim outcomes along the trajectory of recovery. Objectives must be clearly linked to targets and goals, and be measurable, time-limited, and specific.
- **Indicators** are specific, quantifiable measures of attributes that directly connect longer-term goals and shorter-term objectives. Ecological indicators are variables that are measured to assess changes in the physical (e.g., turbidity units), chemical (e.g., nutrient concentration), or biotic (e.g., species abundance) ecosystem attributes as guided by the reference model. Social-ecological or cultural indicators measure changes in human wellbeing such as participation in traditional practices, governance, language and education.

2.3 Baseline Data Collection

2.3.1 This OBERP has been informed through baseline data collected during ecological studies carried out to inform the AEI for the revised proposed development, for details of survey methodology and results see:

- EIA Technical Appendix 8.1: Longcroft Wind Farm Ecological Desk Study Report.
- EIA Technical Appendix 8.2: Longcroft Wind Farm Vegetation Survey and Habitat Mapping Report.
- EIA Technical Appendix 8.3: Longcroft Wind Farm Protected Mammal Survey Report.
- EIA Technical Appendix 8.4: Longcroft Wind Farm Bat Survey Report.
- EIA Technical Appendix 8.5: Longcroft Wind Farm Fish Habitat Assessment.
- AEI Technical Appendix 8.7: Habitats Regulations Appraisal Shadow Stage 1 Screening Report.
- AEI Technical Appendix 8.8: Habitats Regulations Appraisal Shadow RIAA

3 Baseline Data Summary

3.1.1 The baseline information summarised in this section focuses on information of particular relevance to the OBERP. Full details relating to baseline data can be found in **AEI Chapter 8: Terrestrial Ecology** and **AEI Chapter 9: Ornithology** of the AEI Report and associated technical appendices.

3.2 Designated Sites

Statutory Sites

3.2.1 The following watercourses associated within the River Tween Special Area of Conservation (SAC) are present within the site or immediately outwith:

- Soonhope Burn; and
- Whaplaw Burn.

3.2.2 Jocks Burn, a tributary of the Earnscleugh Water, of which also forms part of the River Tweed SAC, intersects a small section of the eastern boundary of the site.

3.2.3 While no significant impacts to the River Tweed SAC have been predicted within **AEI Chapter 8: Terrestrial Ecology** or **AEI Technical Appendix 8.7** and**8.8**, opportunities for enhancing ecological features associated with the SAC are addressed within this OBERP.

Non-Statutory Sites

3.2.4 Three non-statutory designated nature conservation sites, are present within the site itself:

- Soonhope Burn Upper, The Howe – Local Biodiversity Site (LBS)
- Soonhope Burn, Lower – (LBS)
- Whalplaw Burn, Upper – (LBS)

3.2.5 While no significant impacts to these sites have been predicted within Chapter 8 of the EIA Report October 2023, opportunities for enhancing ecological features associated with these sites are addressed within this OBERP.

3.3 Protected and Notable Species

3.3.1 Protected and/or notable mammal species recorded during 2023 field surveys, of which are considered to be of at least local importance, are displayed in **Table 1**.

3.3.2 While no significant impacts have been predicted for any species listed within **Table 1** as a result of the proposed development, opportunities for enhancing habitats that may support such species have been considered within this document.

Table 1: Protected and Notable Species

Species	Protection
Mammals	
Eurasian otter, *Lutra lutra*	HabRegs2, HSD2, HSD4, WCA5, SBL, SB LBAP
Common pipistrelle bat, *Pipistrellus pipistrellus*	HabRegs2, SBL, SB LBAP
Soprano pipistrelle bat, *Pipistrellus pygmaeus*	
Brown long-eared bat, *Plecotus auritus*	
Daubentons bat, *Myotis Daubentonii*	
Natterer's bat, *Myotis nattereri*	
Noctule bat, *Nyctalus noctula*	
Leisler's bat, *Nyctalus leisleri*	
Mountain hare, *Lepus timidus*	

Reptiles	
Adder, *Vipera berus*	SBL, WCA5, SB LBAP
Common lizard, *Zootoca vivipara*	SBL, WCA5
Fish	
Atlantic salmon, *Salmo salar*	HabRegs3, HSD2, OSPAR, SBL, SFFA, SB LBAP
Brown trout, *Salmo trutta*	SBL, SFFA
River lamprey, *Lampetra fluviatilis*	SFFA, SBL, SB LBAP
Brook lamprey, *Lampretra planeri*	SBL, UKBAP, SB LBAP
Sea lamprey, *Petromyzon marinus*	SBL, UKBAP, SB LBAP, OSPAR

Table notes:

HSD2 – Species listed in Annex II of Council Directive Habitats Directive 92/43/EEC on the conservation of natural habitats of wild fauna and flora (The Habitats Directive);

HSD4 – Annex IV of the Habitats Directive; HabRegs2 - Schedule 2 of the Habitat Regulations; HabRegs3 - Schedule 3 of the Habitat Regulations;

SBL – Scottish Biodiversity List; SB LBAP – Scottish Borders Local Biodiversity Action Plan;

WCA9 – Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (non-native species);

OSPAR – The Convention for the Protection of the Marine Environment of the North-East Atlantic;

SFFA – Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003.

3.4 Protected and Notable Bird Species

3.4.1 Key bird species identified by NatureScot as being at potential risk of impact from wind farms included six species breeding within the potential disturbance zone: greylag goose (28 pairs), golden plover (15 pairs), lapwing (18 pairs), curlew (27 pairs), merlin (1 pair) and short-eared owl (1 pair, 2022 only).

3.4.2 Key species recorded using the potential disturbance zone outside the breeding season included red kite, hen harrier, goshawk, golden eagle, golden plover, lapwing, curlew, peregrine and merlin.

3.4.3 Key species recorded at risk of collision (i.e. flying through the site at rotor height) included whooper swan, pink-footed goose, greylag goose, red kite, marsh harrier, goshawk, golden eagle, curlew, golden plover, lapwing, peregrine and merlin.

3.4.4 Overall, there are not likely to be any significant impacts on ornithology resulting from the revised proposed development, assuming that the mitigation measures referred to within **AEI Chapter 9: Ornithology**, are adopted.

3.4.5 Consultation with the RSPB advised that nest boxes should be removed from this OBERP, as such they have not been suggested as enhancement measures.

3.5 Habitats

Habitats

3.5.1 The site is comprised predominantly of upland dry heath and blanket bog (corresponding to Annex I habitats H4030 European dry heath and H7130 blanket Bog), with large areas of acid grassland and bracken also present. The blanket bog is largely on carbon rich soil rather than deep peat and is degraded due to a history of muir burning for grouse management. Small areas of conifer plantation and upland birchwood are also present as are areas of scrub, purple moor grass and rush pasture, flushes, and neutral grassland. Watercourses, including two which are part of the River Tweed SAC, the Soonhope Burn and Whalplaw Burn are also present within the site.

3.5.2 One Annex I aquatic habitat 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation is present within the lower extent of the Whalplaw Burn; this is a qualifying interest of the River Tweed SAC.

3.5.3 In accordance with the EIA Report October 2023, habitats considered to be of local importance or greater, for which opportunities for biodiversity restoration and enhancement have been considered within this outline OBERP are:

- upland acid grassland;
- upland birchwoods;
- upland heathland;
- blanket bog;
- purple moor grass and rush pasture;
- upland fens, flushes and swamps; and
- rivers and streams.

3.5.4 Habitat loss calculations are provided in **Appendix A**. Without the compensation measures set out within the OBERP, significant impacts on these habitats in particular dry heath and blanket bog could result from the construction of the revised proposed development (see **AEI Chapter 8: Terrestrial Ecology**).

Notable Plants

3.5.5 Two notable plant species were identified during the habitat and vegetation survey conducted during May 2023 (EIA Technical Appendix 8.2), for which opportunities for biodiversity restoration and enhancement have been considered within this OBERP:

- Common juniper *Juniperus communis*; and
- Wild pansy *Viola tricolour*.

4 Habitat Loss

4.1 Direct Habitat Loss

4.1.1 Where existing habitat would be replaced by with the infrastructure of the revised proposed development, it would be permanently lost from the site at least for the duration of the operation of the revised proposed development. This includes habitats present under the footprint of the revised

proposed development and areas that would be subject to cut and fill, grading and excavation for cables.

4.2 Indirect Habitat Loss

4.2.1 Indirect loss has been calculated for blanket bog habitats (>50 cm in depth) that lie within 30 m of the direct habitat loss areas (as per guidance outlined in NatureScot, 2023); this is to allow for drying effects and hydrological and vegetation changes as a result of excavation and installation of infrastructure during construction. Where carbon rich soils (<50 cm in depth) are present a 10 m buffer has been applied.

4.2.2 For all other habitats, an allowance for indirect loss of 5 m has been included to allow for temporary loss resulting from damage during construction and the potential for increased drought vulnerability.

4.2.3 For the purposes of assessment, a precautionary approach has been taken which assumes that direct and indirect loss represents a permanent, irreversible negative effect, although in practice some areas indirectly affected may be able to be restored, e.g. during reinstatement following construction. Temporary loss of heath habitat caused during construction, for example by vehicles driving around the construction footprint and storage of materials, is anticipated to recover following reinstatement works within 5 years[3].

4.3 Summary of Predicted Habitat Loss

4.3.1 Direct and indirect habitat loss calculations for all natural and semi-natural habitats of local or greater value are provided in Appendix A. Direct and indirect losses for peatland and Annex 1 habitats are provided in **Table 2**.

4.3.2 Loss of priority and degraded peatland is based on NatureScot, 2023 guidance. Of the habitats on site only those containing M19 communities are considered likely to be priority peatland in areas where peat is >50 cm. M20 and M25 (only where M25 is on deep peat) are considered to represent degraded peatland where peat is >50 cm.

4.3.3 Calculations are separated to reflect blanket bog communities (those on deep peat >50 cm) and habitats supporting blanket bog vegetation on carbon-rich soils based on peat depth (<50 cm).

4.3.4 A summary of direct and indirect losses of Annex I habitats, blanket bog and carbon-rich soils are provided in **Table 2**.

4.3.5 There is no direct loss of Annex I 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. The AEI **Technical Appendix 8.7** and **8.8** concluded no adverse effect to this habitat, as such indirect loss (resulting from water quality, sedimentation etc) has not been calculated.

Table 2 Direct and Indirect Habitat Loss of Annex I and Peatland/Carbon-rich soils

Habitat	Area (ha)	Direct Loss (ha)	Indirect Loss (ha)	Overall Loss (ha)

Annex I H4030 European dry heath	508.43	10.48	6.66	17.14
Annex I H7130 Blanket bog >50 cm	5.90	0.07	0.58	0.65
Degraded Blanket Bog (f1a6) (Non-priority) >50 cm	28.46	0.10	1.16	1.26
Blanket bog / Carbon-rich soil (f1a5) <50cm	10.15	0.39	0.66	1.05
Degraded blanket bog / Carbon-rich soil (f1a6) <50cm	249.17	8.79	9.98	18.77

4.3.6 No priority peatland communities that should be completely avoided under NatureScot guidance[2] were identified within the site (includes M1, M2 and M3 NVC communities).

5 BERP Working Group

5.1.1 A group of key stakeholders would be invited to form a BERP working group. Their role would be to provide input into and comment on the detailed BERP and subsequent revisions to the BERP during the lifetime of the revised proposed development.

5.1.2 It is envisaged that the working group may include the following stakeholders:

- the operator of the revised proposed development and their ecologist(s);
- the landowners;
- Scottish Borders Council;
- The Local Fisheries Trust (River Tweed Commission);
- SEPA; and
- NatureScot.

5.1.3 Further details, including terms of reference for the BERP working group, would be provided in the detailed BERP, post consent.

5.1.4 The BERP will be reviewed and amended appropriately on a regular basis to enable assessment of progress toward achieving goals and objectives and to inform active management.

6 OBERP

6.1 Vision

6.1.1 To enhance the extent and condition of target habitats and protected and/or notable species within the site.

6.2 Targets

6.2.1 This section details target species and habitats (features) recorded within the site that require compensation, mitigation or monitoring via the OBERP based on the assessment in the **AEI Chapter 8: Terrestrial Ecology**.

6.2.2 Additional targets have been selected based on opportunities for biodiversity enhancement in line with NFP4 in particular for features of at least local nature conservation importance for which restoration and/or enhancement measures would serve to improve overall conditions within the site. Targets features are listed in **Table 3** with an accompanying rationale.

Table 3 Features Targeted for Biodiversity Enhancement

Feature	Rationale
Peatlands	Construction of the revised proposed development with result in direct and indirect loss of blanket bog. Intact blanket bog (M19) is considered a priority peatland type of national importance. Degraded blanket bog (M20 and M25) is not considered priority peatland, however, is listed as a priority habitat within the SBL and is valuable in terms of maintaining connectivity with blanket bog habitat in the wider area. As such degraded blanket bog within the site has been assessed as regional importance. Peatlands on peat <50 cm deep (carbon-rich soils) are considered of regional to local importance. In additional these peatlands are valuable to nesting waders including: merlin, golden plover, greenshank, curlew, dunlin and snipe.
Upland dry heath and acid grassland	Construction of the revised proposed development with result in direct and indirect loss of upland dry heath and upland acid grassland. Upland dry heath is an SLB priority habitat and a European Annex I habitat. The examples of this habitat on site are species poor and significantly modified from their more species rich state, and ground condition dependant on distribution of grazing and muir burning.
Wild pansy	Upland acid grassland (NVC U4) within the site has been found to support wild pansy *Viola tricolor,* of which is a SBL and Scottish Borders LBAP species. Construction of the revised proposed development with result in direct and indirect loss of U4 upland acid grassland, with potential additional losses resulting from bracken encroachment. Opportunities for restoration of this habitat and enhancement of conditions for supporting wild pansy should therefore be considered.
Juniper	Juniper is an SBL and Scottish Borders LBAP species. It is also a qualifying feature of the nearby by (1.5 km north) Lammer Law SSSI. On-site juniper recorded as scattered occurrences along the banks of Whaplaw Burn within the south of the site. No impacts on juniper are anticipated, however, there are opportunities to enhance the population of this species on-site within existing stands without creating connectivity to the Lammer Law SSSI. Increasing connectivity may facilitate the speed of spread of juniper dieback to the SSSI, in part designated for juniper, resulting in an adverse effect.
Native and	Native woodland (upland birch woodland - an SBL priority habitat) occurs as two small stands on-site. Such woodland was likely more extensive in the past having been replaced by heath and grassland following felling and grazing.

Feature	Rationale
riparian woodland	While construction and operation of the proposed development is unlikely to impact existing stands of native woodland, opportunities for creation and expansion of native woodland habitat exist within the site. This in turn would serve to enhance the biodiversity value and carbon sequestration ability of the site. In addition, when planted in riparian zones trees can benefit fish, and macroinvertebrate prey species, by shading and cooling the water. They also provide shelter for protected species such as otter. Atlantic salmon, lamprey spp. and otter are qualifying species of the nearby River Tweed SAC and therefore habitat enhancement on-site may benefit the SAC populations of these species.
Otter	Otter are a qualifying feature of the nearby River Tweed SAC. Although no significant impacts are anticipated on otter, the site presents opportunities to enhance their habitat.
Mountain hare	Mountain hare were recorded on-site. Although no significant impacts are anticipated to mountain hare, the site presents opportunities to enhance their habitat.
Bats	Seven species of bat (common and soprano pipistrelle, brown long-eared, Daubenton's, Natterer's, Leisler's and noctule), have been recorded within the site. No significant impacts on bat populations are anticipated, however, some collision mortality is possible and curtailment of wind turbines at certain times of year in certain weather conditions is recommended in the EIA Chapter 8: Terrestrial Ecology to mitigate this along with bat activity and carcass searching to monitor and inform mitigation require. Limited foraging habitat impact is expected due to lack of foraging features within 200 m of the wind turbines, however, and the site presents opportunities to enhance bat habitat away from wind turbines.
Fish	A fish monitoring plan will be developed as per the EIA Chapter 8: Terrestrial Ecology in collaboration with the local fisheries trust. Fish including Atlantic salmon and lamprey spp. are qualifying features of the River Tweed SAC. Although no significant impacts are anticipated on these species, the site presents opportunities to enhance their habitat.

6.3 Goals and Objectives

6.3.1 The goals associated with restoration and biodiversity enhancement for the site are:

- **Goal 1**: Re-wetting of degraded peatland habitats.
- **Goal 2**: Restoration of dry heath and other open up-land habitats.
- **Goal 3**: Enhancement of riverine habitat.
- **Goal 4**: Maintain or enhance the population of wild pansy on site.
- **Goal 5**: Enhancement of existing woodland and creation of riparian woodland and juniper scrub.
- **Goal 6**: Provision of breeding and resting sites for protected and notable species.
- **Goal 7**: Monitor bat activity and collision mortality

6.3.2 The goals and objectives of the OBERP are set out in **Table 4**. These have been designed as SMART targets (specific, measurable, achievable, relevant and timebound) to facilitate monitoring of BERP progress.

6.3.3 The total area of each habitat type to be restored (target habits), have been based on relevant guidance and professional judgement such that they are considered to be proportionate to

predicted impacts from the revised proposed development and the biodiversity enhancement requirement of NFP4.

Blanket Bog and Other Peatland Vegetation

6.3.4 Compensation for loss of blanket bog on deep peat follows recent NatureScot guidance. In June 2023 NatureScot published new guidance, '*Advising on peatland, carbon-rich soils and priority peatland habitats in development management*', on expected compensation extents for impacts to peatland (NatureScot, 2023). This guidance includes that:

6.3.5 "*… outline HMP, should be sufficiently detailed and should identify restoration areas for offsetting and enhancement, using site survey data to demonstrate the areas are appropriate and are likely to result in the outcomes proposed. Our current recommendation is that restoration to achieve offsetting (i.e. compensation rather than biodiversity enhancement) would be in the order of 1:10 (lost: restored), i.e. 1 ha loss of peatland should result in measures to restore 10 ha of peatland, using the same buffer to assess loss and restored areas (e.g. 30 m).…*"

6.3.6 "*A significant level of enhancement is required in relation to developments considered under NPF4…. For priority peatland habitats, this would mean that additional restoration measures beyond those required to achieve the 1:10 offsetting ratio (lost: restored) are required for enhancement. We would expect this to be in the region of an additional 10%...*"

6.3.7 Loss of blanket bog (peat >50 cm), including degraded blanket bog, will therefore be compensated for at a ratio of 1:10 +10% (area lost directly and indirectly: area restored). This large ratio is in part due to the difficulty and time requirements of restoring the hydrology of these ecosystems. The buffer used for indirect loss was 30 m. This equals: 1.91 x 10 = 19.10 ha

6.3.8 Areas of blanket bog/carbon-rich soil (peat <50 cm) are considered to be less valuable in terms of carbon stocks and other ecosystem services than similar habitats on deep peat. The buffer used for indirect loss was 10 m. A loss to restoration ratio of 1:3 is recommended for these habitats. This is the same ratio suggested by Scottish Borders Council during consultation for the loss of trees. This equals 19.82 x 3 = 59.46 ha

6.3.9 The total area of peatland restoration required in compensation for the loss of these habitats is considered to be: 78.56 ha.

6.3.10 NatureScot require an additional 10% in enhancement giving total restoration area objective of: 86.42 ha.

Other Habitats

6.3.11 Loss of other habitats of local or above value such as heathland should be compensated for at least on a 1:1 basis, preferably taking to total to include for loss of habitats of less than local value: 27.71 ha. Habitat restoration should focus on habitat of similar or higher biodiversity value specifically heathland and peatlands.

6.3.12 Total habitat loss for blanket bog and peatland is 21.73 ha, combined with other losses 27.71, provides an overall habitat loss of 49.44 ha (including direct and indirect losses).

6.3.13 Loss of natural watercourse bottom should be avoided where practical. In particular watercourse crossing 11 should be bottomless to prevent loss on bog pool communities.

6.4 Site Constraints

6.4.1 Tree planting may increase predation risk to ground nesting birds within 500 m including red listed waders such curlew which breed on site. Care should also be taken not to attract bats into areas which would increase their collision risk. Therefore, tree planting must be designed in collaboration with a suitably experienced ornithologist and bat specialist.

Table 4 OBERP Goals

Goal	Objective	Target feature(s)	Recommended Quantity (ha)	Location	Timescales	Indicators
1. Re-wetting of peatland	1.1. Re-wet degraded peatland to raise its water table and condition	Peatlands and Breeding birds	86.42 ha	Indicative areas are illustrated on **AEI Figure 8.6.1**. May be offsite if required	Implementation as soon as possible, but at least within 3 years of completion of construction.	Increase in water table.
	1.2. Avoid loss of bog pools, via watercourse crossing design	Peatland	N/A	Watercourse crossings	With maintenance and monitoring as required for the lifetime of the revised proposed development.	Increase in the distribution and abundance of mire forming species.
2. Restoration of dry heath and other open up-land habitats	2.1 Cessation of muir burning within agreed land areas to improve condition of heathland habitat	Dry heath Acid grassland Breeding birds Bats Mountain hare	At minimum 17.14 ha to compensate for direct and indirect losses.	Indicative areas are illustrated on Figure 8.6.1. To be refined in agreement with the landowner and other stakeholders	Implementation as soon as possible, but at least within 3 years of completion of construction. With monitoring and adaptive management as required for the lifetime of the proposed development.	No signs of muir burning in these areas.

Goal	Objective	Target feature(s)	Recommended Quantity (ha)	Location	Timescales	Indicators
	2.2 Implementation of a grazing management scheme within agreed land parcels to improve habitat condition	Dry heath Acid grassland Breeding birds Bats Wild pansy Mountain hare	TBC	To be refined in agreement with the landowner and other stakeholders	Implementation as soon as possible, but at least within 3 years of completion of construction.	Habitat condition improved.
3. Enhancement of riverine habitat	3.1 Introduction of woody debris structures	Aquatic macroinvertebrates Fish Otter	TBC Further Consultation to be held with Tweed River Trust	Periodically long Soonhope and Whalplaw Burn	Implementation as soon as practical, but at least within 3 years of completion of construction.	Macroinvertebrate diversity and abundance increases
	3.2 Reduced access of livestock in watercourses	Water quality Macrophytes Fish	At minimum exclusion of the Whalplaw Burn within the River Tweed SAC (440 m section) that lies within the site	Periodically along Soonhope and Whalplaw Burn	Implementation as soon as possible, but at least within 3 years of completion of construction.	Improved or stabilised water quality and increases in bankside vegetation
4. Maintain or enhance the population of wild pansy on site	4.1 Seed locally sourced wild pansy to reinstatement areas and other areas as appropriate	Wild pansy Pollinator species	TBC	U4 acid grassland and other suitable soils	During construction and on-going as appropriate	The population of wild pansy is stable or increasing within areas of relocation and seeding.

Goal	Objective	Target feature(s)	Recommended Quantity (ha)	Location	Timescales	Indicators
	4.2 Rescue and relocate wild pansy ahead of construction where appropriate.		TBC	Where present within potential habitat loss areas to suitable areas of reinstatement/ no impact.	Prior to and during construction and on-going as appropriate	
5. Enhancement of existing woodland and creation of riparian woodland and juniper scrub.	5.1 Plant areas of native riparian woodland to shade watercourses (see).	Ripiarian woodland Riverine habitat Water Quality (including temperature) Macrophyte growth (QI of River Tweed SAC)	TBC see map Tree mix inclusive of food opportunities for red squirrel to move on to site and support bird foraging	TBC - In blocks along riparian corridors on site (avoiding areas within 100m of peatland habitats and calcareous grassland).	Implementation as soon as possible, but at least within 3 years of completion of construction. With monitoring and adaptive management as required for the lifetime of the proposed development.	Establishment of native riparian woodland parcels within the site. Ha new woodland. Woodland condition. Water temperature.
	5.2 Plant areas of native scrub to provide riparian buffer	Fish Water Quality (Including temperature) Otter	TBC	To be refined in agreement with the landowner and other stakeholders		Water quality improvements from baseline conditions Increases in number of otter resting locations Decrease in water temperature over time
	5.3 Create a native woodland ecotone around coniferous shelterbelt plantation	Birds	TBC	Within at least some of the riparian planting areas -TBC		Ha new woodland. Woodland condition.

Goal	Objective	Target feature(s)	Recommended Quantity (ha)	Location	Timescales	Indicators
6. Provision of breeding and resting sites for protected and notable species	6.1 Creation of artificial otter holts/ couches	Otter	At least 3	Artificial otter features to be created at the edge of watercourses e.g. along the Whalplaw Burn and Soonhope Burn. To be refined in agreement with the landowner and other stakeholders	Implementation as soon as possible, but at least within 3 years of completion of construction. With monitoring and adaptive management as required for the lifetime of the proposed development.	Signs that artificial couches/ holts are in use by otter
	6.2 Install bat boxes suitable for the species recorded on site	Bats	TBC	TBC in suitable habitat		Occupation of bat boxes by bats
7. Monitor bat activity and collision mortality	Undertake bat activity carcass search surveys	Bats	N/A	Around six wind turbine locations	Annually – July-September (see Section 5.4.7)	Monitoring completed and reported

6.5 Outline Implementation Methods

6.5.1 This section sets out high-level methodology for the implementation of objectives where additional information is considered useful to supplement that in Table 4. For indicative locations where appropriates see **AEI Figure 8.6.1**.

6.5.2 No biodiversity enhancement measures or restoration is proposed within 500 m of Historic Environment Scotland scheduled monuments.

Goal 1: Re-wetting of Peatland

Objective 1.1 Re-wet degraded peatland to raise its water table and condition

6.5.3 The methods for re-wetting peatland should follow the guidance provided by Peatland Action[5]. Which methods are suitable will depend on the nature of degradation and opportunities for re-wetting and the restoration site which has not yet been identified. The approach should be discussed with key stakeholders including NatureScot and the chosen contractor. The agreed approach would be set out in detail in the finalised BERP post-consent.

6.5.4 The area for peatland re-wetting may be fully or partially off-site due to lack of sufficient, suitable bog restoration opportunities within the site. Enhancement of bog condition via reduced grazing and muir burning is specifically excluded within NatureScot 2023 guidance[2] as an acceptable approach to compensating for loss of bog habitats, only methods that improve bog hydrology/ result in re-wetting are acceptable.

6.5.5 Drain blocking of open peatland is mentioned within the recommended management measures within the River Tweed SAC Conservation Advice Package with regards to managing sediment load for salmon and lamprey spp. habitats.

Control Area

6.5.6 A control plot of good condition blanket bog that the habitats within the peatland re-wetting area could reasonably be expected to revert to following re-wetting should be identified within the wider landscape nearby and monitored to aid in monitoring bog restoration success and the setting of site-specific vegetation targets for bog habitats (e.g., % cover of sphagnum etc.).

Goal 2: Restoration of dry heath and other open upland habitats

Objective 2.1: Stop muir burning to increase heathland habitat

6.5.7 Cessation of muir burning at key locations on site would allow dry heath, blanket bog and other open habitats to recover to a higher condition. The areas indicated for restoration on **AEI Figure**

[5] NatureScot. (2025). Peatland ACTION – Peatland Restoration and Management Guidance. [Online] Available at: https://www.nature.scot/climate-change/nature-based-solutions/nature-based-solutions-practice/peatland-action/peatland-action-how-do-i-restore-and-manage-my-peatland

8.6.1, have been selected as they include some of the few areas of deep peat on site as well as good coverage of heathland and peatland habitat.

Objective 2.2: Implement grazing management to improve habitat condition

6.5.8 Fencing of open moorland areas at key locations on site to allow regulation of grazing by sheep in line with good practice guidance for moorland and heathland conservation may be necessary.

Goal 3: Enhancement of riverine habitat

Objective 3.1: Introduction of woody debris structures

6.5.9 Introduction of large woody debris (LWD) structures within watercourses will provide enhancements to the riverine habitat to support fish, improve food source availability, water quality and help regulate flows in spate events. Retainment of coarse woody debris is listed as a management priority within the River Tweed SAC Conservation package[6].

6.5.10 LWD would be introduced throughout the Soonhope Burn and Whalplaw Burn, concentrating on lower sections within the site to coincide with greater fish presence.

6.5.11 LWD provide shelter for fish and their prey species (macroinvertebrates) during periods of high flow, provide instream shade, refuge from predators (avian and mammalian) and rearing habitat for juvenile fish. Improved survivability will increase the number of salmonids reaching the smolt life stage. Depending on conditions at sea and in lower reaches of the river etc, as well as other factors such as climate change this has the potential to increase the number of returning adults compared to the future baseline population in the absence of intervention, resulting in potential population increases over time. This in turn improves otter food source availability.

6.5.12 Placement of LWD can aid in protecting riverbanks from erosion by providing resistance to flow and deflecting it/changing direction, slowing down water velocity. In spate events the reduction in velocity will aid in extending the lag time of the sub-catchment reducing peak river levels. Deflection of flows helps create new sediment pathways resulting in an increase in in-stream features including pools, exposed sediment bars and variation in water velocity across the profile which provide micro-habitats for a number of macrophyte and macroinvertebrate species. Additionally, LWD will trap sediments and organic matter providing improved water quality.

Objective 3.2: Reduced access of livestock in watercourses

6.5.13 Ensuring minimal poaching or trampling by deer and livestock is mentioned within the recommended management measures within the River Tweed SAC Conservation Advice Package[6] with regards to managing sediment load and improving water quality.

6.5.14 Excluding sections of the watercourses via fencing, in conjunction with riparian planting, will allow vegetation (existing and proposed) to establish by preventing suppressing from grazing and or

[6] NatureScot. (2005). River Tweed Special Area of Conservation (SAC): Conservation Advice Package. [Online] Available at: https://www.nature.scot/sites/default/files/special-area-conservation/8369/conservation-advice-package.pdf

damage, strengthening the banks with increased vegetation and reducing sediment input into the watercourse. Exclusion by fencing will prevent livestock from accessing the river and river margins. Where and if appropriate a gravity-fed water system may be introduced to provide livestock access to water (if required).

Goal 4: Maintain or enhance the population of wild pansy on site

Objective 4.1: Seed locally sourced wild pansy into reinstatement areas and other areas as appropriate

6.5.15 Wild pansy is an SBL and Scottish Borders LBAP species that has been recorded within upland acid grassland in several locations within the site.

6.5.16 On-site seed collection for use in re-seeding wild pansy along access track edges, or in areas where soil conditions are suitable for growth of such species, is therefore recommended. Wild pansy prefers sandy, stony and infertile soils, pH range 5–7.

Objective 4.2: Rescue and relocate wild pansy ahead of construction where appropriate

6.5.17 To mitigate and compensate for the loss of any wild pansy plants during construction, plant rescue and relocation should be carried out prior to construction. Translocation should follow best practice including methods for rescue, storing, planting site selection, timing of re-panting, plant care and aftercare e.g. watering. Ideally, this will be carried out early or late in the growing season to avoid time of peak plant growth/ stress and likely periods of drought.

Goal 5: Enhancement of existing woodland and creation of riparian woodland

Objective 5.1: Plant areas of native riparian woodland to shade watercourses

6.5.18 The term ‘riparian’ refers to the interface between a waterbody and adjacent land. Riparian habitats serve as natural filtration systems, protecting aquatic environments from sedimentation or pollution events, while root systems act to reduce erosion through binding soil together. They also provide shelter and foraging opportunities for a range of protected mammal species, such as otter, birds and bats, and provide suitable conditions populations of invertebrates to flourish. Furthermore, riparian trees act to regulate instream temperatures through shading effects, thereby improving conditions for fish species.

6.5.19 Opportunities for creation of native riparian habitat exist along the two main watercourses present within the site (the Whaplaw Burn and Soonhope Burn) and associated tributaries, the details of which are discussed below.

6.5.20 Tree planting design should be informed by suitable bat and ornithological specialists to avoid unintended negative impacts on bats and ground nesting birds. No tree planting should be undertaken within 100 m of peatland habitats to avoid potential de-watering of peat.

6.5.21 Trees would be planted in small compartments, and each would be fenced off to prevent grazing impacts by herbivores. Fencing each area would in turn allow for marginal wetland species (in damp riparian areas at lower elevations), and heathland species (along slopes of tributaries on steeper gradients) to recover in the absence of grazing. Where necessary, trees should also be supported using biodegradable tree tubes and stakes, attached with adjustable tree ties.

6.5.22 Potential areas within which tree planting compartments could be located are illustrated on **AEI Figure 8.6.1**.

6.5.23 Areas of native woodland plantation, and associated tree species, should be selected based on suitability of soil and ground conditions for tree growth and the potential of tree planting in the area to cool water (typically greater in the headwaters), and suitability of the watercourse for supporting fish.

6.5.24 Compartments shall be planted at a moderate density with native species and allowed to naturally regenerate. Trees for Life should be consulted on regionally appropriate tree planting practices and native species mix for the site, however species likely to be included (dependant on ground conditions) are birch *Betula* sp., rowan *Sorbus aucuparia*, sessile oak *Quercus petraea*, alder *Alnus glutinosa*, holly *Ilex aquifolium*, and juniper *Juniperus communis*. Juniper is only to be planted where existing stands have been identified to reinforce existing individuals and not facilitate the spread of juniper dieback (*Phytophthora austrocedri*) across the site.

6.5.25 Consideration should also be given to tree species favoured by terrestrial mammals that may move into the site during the operational phase or after decommissioning such as red squirrel, *Sciurus vulgaris* (present 330 m from southern boundary). Tree species would include those suitable for provision of a suitable food source such as Scots pine, *Pinus sylvestris* and crab apple, *Malus sylvestris*. Planting of Scots pine should not occur immediately adjacent to watercourse but on the outside of the riparian plantations to avoid needle shed into watercourse that may adversely effect pH.

6.5.26 Where suitable aspen should be included in the planting mix in relation to LBAP objective ER2.3.

6.5.27 A programme of bracken monitoring and management may also be required in order to limit the bracken regeneration in areas of woodland plantation.

6.5.28 If field drains are present within proposed tree planting compartments, blocking or breaking these may facilitate the creation of wet woodland which is or particularly high biodiversity value.

Objective 5.2: Include juniper in riparian planting.

6.5.29 Juniper is a SBL and Scottish Borders LBAP species and has been recorded on site on steep slopes where there is limited/no grazing. Juniper should be planted in new areas of riparian woodland within the site, with a suitable buffer from other newly planted trees to prevent overshading, and in areas protected from grazing herbivores.

6.5.30 Juniper should only be planted around existing clusters, or in isolated clusters, to safeguard current distribution. Planting should not aim to improve connectivity of the species throughout the site or to the Lammer Law SSSI at the risk of spreading *Phytopthora austrocedri.*

Objective 5.3: Create a native woodland ecotone around coniferous shelterbelt plantation.

6.5.31 Small areas of coniferous shelterbelt plantation exist within the site. Development of 'ecotone' edge habitat around these stands would in turn create transitional vegetation that better connects stands of coniferous woodland with the wider landscape. This could be achieved though planting scattered broadleaved trees (such as oak Quercus sp., rowan and birch) along the perimeter of coniferous woodland stands, interspersed with native scrub and shrub species (such as hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and hazel *Corylus avellana*).

6.5.32 The development of ecotone edge habitat would not only enhance the visual amenity of existing stands of coniferous woodland within the site but would also provide increased commuting and foraging opportunities for bat species that utilise the site, suitable habitat for breeding bird species, and enhanced cover for a range of other protected species.

Goal 6: Provision of breeding and resting sites for protected and notable species

Objective 6.1: Creation of artificial otter holts/ couches

6.5.33 Watercourses within the site (Whaplaw Burn and Soonhope Burn) form part of the River Tweed SAC, for which otter is a primary feature. Installation of carefully sited artificial resting features (holts) in banksides and riparian areas may in turn encourage an increase in otter activity and populations within the site and surrounding area.

6.5.34 Artificial holts would be placed in an undisturbed area, free from flooding and close to a good food supply, as far away from access tracks as possible. The holts could be developed in a variety of forms, from connecting pipes creating underground tunnel systems or log piles with ample entrance points leading into a secluded cavity, to living holts created in the root systems of scrubs and trees.

6.5.35 While encouraging otter populations to utilise the area would be beneficial to the overall biodiversity of the site, measures to reduce the risk of injury or mortality associated with vehicle collisions would also be required. This could be achieved by implementing a permanent 15 mile per hour (mph) speed limit within the site and installing low-level wildlife warning reflectors either side of watercourse crossing points along the access track.

Objective 6.2: Install bat boxes suitable for the species recorded on site.

6.5.36 The site supports foraging bats however it has a low availability of roosting opportunities. The installation of bat boxes on mature trees that are retained on site is recommended. Boxes should be placed along woodland edges and face onto open clearings or rides. Boxes should be positioned at a variety of aspects, with clear flight lines to the boxes. The installation of bat boxes should be not within 200 m plus rotor radius of the wind turbine locations.

Goal 7: Monitor bat activity and collision mortality.

6.5.37 Chapter 8: Terrestrial Ecology of the EIA Report October 2023 recommends wind turbine curtailment to mitigate bat collision risk, this will apply between 30 minutes post-sunset and 40 minutes pre-sunrise (at certain wind speeds) and will be implemented at each turbine between 1st April – 31st October each year. The mitigation will be implemented for the lifetime of the revised proposed development, unless monitoring results necessitate a change in curtailment regime.

6.5.38 Monitoring would comprise measurement of bat activity and fatality rates and would be undertaken annually until validation of the initial curtailment parameters and any amendments are established in consultation with NatureScot. Bat activity monitoring would comprise the use of static bat detectors (based at ground level) at five randomly selected wind turbines during July – September inclusive which is when most fatalities are found to occur. This represents a precautionary approach, because if bat fatality rates are sufficiently low during this period, they are unlikely to be greater at other times of year. If the mitigation is effective during this period, it will also be effective during periods of lower levels of activity. The use of five wind turbines is considered to provide a representative sample (41.7%) of wind turbines to be sampled and is coincident with the number of wind turbines which can reliably be searched by a dog team in a single day (a maximum of six is standard).

6.5.39 Carcass searching would be undertaken within a 50 m radius at the same five wind turbines every two weeks from 1st July until end of September i.e., seven searches in total. The estimate of two weeks persistence of corpses, and therefore the intervals between search dates will be further confirmed by undertaking a carcass persistence trial at the site prior to undertaking carcass searching. Carcass searching will be undertaken using dogs, so that an effective observer efficiency rate of 80% or more can be achieved.

6.5.40 Following each annual monitoring period, if the number of bat fatalities is less than two bats per wind turbine per year, the operator may propose amendments to reduce the curtailment parameters. If the number of bat fatalities is greater than two bats per wind turbine per year, the operator shall be obligated to propose amendments to strengthen the mitigation. Any changes proposed will be consulted on with NatureScot and implemented the following year with repeated monitoring using the methods described above unless otherwise varied (e.g. to investigate condition in which fatalities are occurring).

7 Monitoring

7.1 Indicators and Indicative Monitoring Methods

7.1.1 Indicators are specific, quantifiable measures of attributes that directly connect longer-term goals and shorter-term objectives. Ecological indicators are variables that are measured to assess changes in the physical, chemical, or biotic ecosystem attributes as guided by the reference model.

7.1.2 The indicators in **Table 4**, are cited in **Table 5** as required to monitor progress toward achieving the OBERP goals and objectives.

Table 5 Indicators and Monitoring Methods

Indicator	Monitoring Methods	Indicative Frequency
Increase in water table.	Dipwells or suitable alternative (TBC)	Quarterly pre intervention Repeated in Years, 1, 3 and then 5 yearly.
Increase in the distribution and abundance of mire forming species.	Habitat condition monitoring (CSM or UKHab)	Pre-intervention May to August Repeated in Years, 1, 3 and then 5 yearly.
Bog pool hydrology and extent is unaffected by the new watercourse crossing (WC12)	Habitat mapping (NVC or UKHab) of relevant areas Habitat condition monitoring (CSM or UKHab)	Pre and post installation of WC12
Signs of muir burning moorland restoration areas.	Habitat condition monitoring (CSM)	Pre-intervention May to August Repeated in Years, 1, 3 and then 5 yearly.
Extent of higher value habitats bog and heath is maintained or increased	Habitat mapping (NVC or UKHab) of relevant areas	
Habitat condition improved.	Habitat condition monitoring (CSM or UKHab)	
Grazing impacts reduced compared to baseline.	Grazing Impact Assessment	
Improved water quality	*In-situ* water quality monitoring	Pre intervention Annually for 3 years then 5 yearly.
Increase in macroinvertebrate abundance and diversity	Kick-sampling	Pre-intervention May to August Repeated in Years, 1, 3 and then 5 yearly.
Stabilised river margins	*In-situ* water quality monitoring Habitat condition monitoring (CSM or UKHab)	Pre-intervention May to August Repeated in Years, 1, 3 and then 5 yearly.
Bracken cover and condition in treated areas	Bracken condition monitoring – to inform treatment requirements	As above
The population of wild pansy is stable or increasing within areas of relocation and seeding.	Species specific plant survey (pansy) e.g. transects and fixed quadrats	As above
Establishment of native riparian woodland parcels within the Site.	Woodland planting mapping Habitat condition monitoring (CSM)	Pre and post implementation
Water temperature	TBC- in stream data loggers	Pre intervention Then 5 yearly.

Indicator	Monitoring Methods	Indicative Frequency
Woodland condition.	Habitat condition monitoring (CSM)	Annually for 3 years and then 5 yearly.
Signs that artificial couches/ holts are in use by otter	Otter survey (artificial holt or couch locations)	Annually for 3 years then 5 yearly.
Occupation of bat boxes by bats	Bird box checks	Annually for 3 years then 5 yearly.
Bat monitoring completed and reported	Carcass searches and static acoustic recorders (See Section 6.5.38-41 Bat monitoring report submitted to client	See Section 6.5.38-41 **Error! Reference source not found.**

7.2 Ongoing Management and Maintenance

7.2.1 The requirement for on-going management and maintenance will be determined based on survey results. Requirements may include:

- repair of dams in the peat restoration area or as required for restoration method;
- repair of any fencing or tree protection;
- replacing dead trees at a sufficient level to attain desired woodland density;
- removal of fencing or tree protection as tree mature if appropriate;
- additional treatments of bracken in bracken control areas; and
- any repair or maintenance of nesting boxes.

7.3 External Factors

7.3.1 It is important to note that external factors such as climate change can influence habitat restoration success. Over the lifetime of the revised proposed development it is possible that climate change will affect the habitats on site and in the surrounding area. This should be taken into account during monitoring and reporting and is another reason why a control site in relation to bog restoration is important.

8 Summary

8.1.1 The habitat management proposed in this OBERP, are expected to compensate for losses of habitat due to the construction of the revised proposed development via peatland re-wetting and heathland restoration (goals 1 and 2). Goal 1 also includes some enhancement as required by NatureScot 2023 guidance[5] (10%). Large areas of degraded blanket bog (>50 cm) and carbon rich soil (<50 cm) remain on site after habitat losses, c. 255 ha, providing on-site compensation and enhancement areas.

8.1.2 Goals 3, 4, 5 and 6 are predominantly designed to provide on-site habitat enhancement focusing on key species on habitats on-site including, riverine habitat (instream), riparian woodland and key species such as pansy, juniper, otter fish and bats.

8.1.3 Goal 4, objective 4.2 is in relation to mitigation for potential loss of wild pansy individuals during construction.

8.1.4 Goal 7 is in relation to mitigation for bats.

8.1.5 In terms of connectivity the proposed management is expected to improve connectivity with the integrated habitat network for wetlands and heathland and acid grassland all of which overlap the site to some extent. It is also expected to connect to adjacent habitats on the site and promote corridors for new species on the site, such as red squirrel recorded nearby.

8.1.6 The improvement of habitat condition on-site is expected to contribute to on-site natural capital (stocks) and ecosystem services including carbon sequestration and storage, and water storage and regulation as well as enhancing biodiversity. This is in line with the objectives of the Scottish Borders LBAP :

- Ecosystem restoration;
- Natural Capital;
- Wildlife and Habitats; and
- Sustainable land management and Freshwater Management.

8.1.7 In particular it contributes in some way towards LBAP objectives:

- ER2.1 Increase coverage of and improve connectivity between native woodlands to enhance the Forest Habitat Network.
- ER2.2 Develop a strategic approach to restore and create cleuch woodland, juniper and montane / heathland scrub in upland areas.
- ER2.3 Promote integration of aspen into action plans for riparian habitats (and other habitats where appropriate) to help mitigate future loss of ash and enhance the Forest Habitat Network.
- ER5.1 Encourage investment in the restoration and appropriate management of species-rich hedgerows, individual tree planting, riparian margins and farm ponds.
- NC1.3 Establish long-term monitoring projects in both previously restored and existing degraded peatland sites.
- LF1.3 Work with partners to ensure effective screening of proposed tree-planting areas to avoid damaging important grassland, heathland and wetland sites.
- LF3.3 Continue local participation in the National Stream Temperature monitoring programme organised by Marine Scotland Science (MSS), who will provide map-based information on where riparian tree planting will be most effective in controlling water temperatures.

Appendices

Appendix A

Table 6 Habitat Areas and predicted habitat losses

UKHab Classification	Area (ha)	Direct loss (ha)	Indirect loss (ha)7	Combined loss (ha)	Corresponding NVC Community	Annex I Habitat	SBL Priority Habitat	Potential GWDTE Status
Cereal crops (c1c)	11.39	0.02	0.22	0.24	N/A	N/A	N/A	N/A
Winter stubble (c1c5)	9.02	0	0	0	N/A	N/A	N/A	N/A
Blanket bog (f1a5) >50cm	5.90	0.07	0.58	0.65	M17, M18, M19, M19/M20	H7130 Blanket bog, priority[8]	Blanket bog	N/A
Blanket bog / Carbon-rich soil (f1a5) <50cm	10.15	0.39	0.66	1.05	M17, M18, M19, M19/M20	N/A	Blanket bog	N/A
Degraded blanket bog (f1a6) >50cm	28.46	0.10	1.16	1.26	M16, M20, M25	N/A	Blanket bog	High in mosaics
Degraded blanket bog / Carbon-rich soil (f1a6) <50cm	249.17	8.79	9.98	18.77	M16, M20, M25	N/A	Blanket bog	High in mosaics
Purple moor-grass and rush pasture (f2b)	6.67	<0.01	<0.01	<0.01	M23	N/A	Purple moor grass and rush pasture	High
Upland flushes fens and swamps (f2c)	0.69	0	0	0	M6	N/A	Upland flushes, fens and swamps	High
Acid grassland (g1)	11.22	0	0	0	M23/Je/H9c	N/A	N/A	High / High in Mosaic
Upland acid grassland (g1b)	6.09	0	0	0	M23/U4/U5	N/A	Nardus stricta – Galium saxatile grassland Juncus squarrosus – Festuca	High / High in Mosaic

[7] Indirect habitat loss was calculated for peatland (f1a5 and f1a6) for habitats within 30 m of built infrastructure, and 5 m for all other habitats

[8] Based on NatureScot definitions of priority peatland and carbon-rich soils within 'Advising on peatland, carbon-rich soils and priority peatland habitats in development management' [Online] Available at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#:~:text=The%20purpose%20of%20this%20guidance%20is%20to%20help,on%20peatland%2C%20carbon-rich%20soils%20and%20priority%20peatland%20habitat.

UKHab Classification	Area (ha)	Direct loss (ha)	Indirect loss (ha)7	Combined loss (ha)	Corresponding NVC Community	Annex I Habitat	SBL Priority Habitat	Potential GWDTE Status
							ovina grassland	
Other upland acid grassland (g1b6)	83.04	0.53	1.06	1.59	H9/H12/U4/U5/ U20/M23	H4030 European dry heaths (upland)	N/A	High / High-Moderate in Mosaic
Bracken (g1c)	124.96	4.21	0.66	4.87	U20	N/A	N/A	Moderate in Mosaic
Other neutral grassland (g3c)	21.03	1.45	1.62	3.07	MG1/MG6	N/A	N/A	N/A
Modified grassland (g4)	23.12	0.10	0.46	0.56	MG6/MG7	N/A	N/A	N/A
Upland heathland (h1b)	20.62	0	0	0	H9/H12/H18/RB	H4030 European dry heaths (upland)	Upland heathland	N/A
Dry heaths – upland (h1b5)	487.81	10.48	6.66	17.14	H9/H12/H18/RB U4/U5/U20 M19/M20/M23	H4030 European dry heaths (upland)	Upland heathland	N/A
Gorse scrub (h3e)	0.71	0	0	0	W23	N/A	N/A	N/A
Mixed scrub (h3h)	5.27	0	0.17	0.17	W23	N/A	N/A	N/A
Standing open water and canals (r1)	9.49	0	0	0	N/A	N/A	N/A	N/A
Developed land -sealed surface (u1b)	0.89	0	0	0	N/A	N/A	N/A	N/A
Buildings (u1b5)	0.63	0	0	0	N/A	N/A	N/A	N/A
Suburban mosaic of developed and natural surface (u1d)	0.35	<0.01	0.06	0.07	N/A	N/A	N/A	N/A
Upland birchwoods (w1e)	1.00	0	0	0	W11	N/A	N/A	N/A
Other woodland; mixed; mainly conifer (w1h6)	1.77	0	0	0	N/A	N/A	N/A	N/A
Coniferous woodland (w2)	1.79	0	0	0	N/A	N/A	N/A	N/A
Other coniferous	0.09	0	0	0	CF	N/A	N/A	N/A

UKHab Classification	Area (ha)	Direct loss (ha)	Indirect loss (ha)7	Combined loss (ha)	Corresponding NVC Community	Annex I Habitat	SBL Priority Habitat	Potential GWDTE Status
woodland (w2c)								
Total:	1121.33	26.14	23.29	49.44				

Appendix B

Figure 8.6.1 - OBERP Indicative Management Areas

Note
Suitable Riparian Planting Zone is Located Outside a 100 m Buffer of Blanket Bog Habitat. All Potential Planting Zones Located Outside of a 500 m Buffer of the Scheduled Monuments.

GLENBURNIE WIND FARM

FIGURE 8.6.1

OBERP INDICATIVE MANAGEMENT AREAS

- Site Boundary
- Proposed Turbine Location
- Survey Area (Site Boundary 250 m Buffer & Access Track 100 m Buffer)
- Site Entrance
- Hardstanding
- Battery Storage Compound
- Watercourse Crossing
- Substation Compound
- Temporary Concrete Batching Plant
- Temporary Construction Compound
- Borrow Pit Search Area
- Exisiting Road
- Proposed Track
- Upgraded Track
- Bottomless Designed Water Crossing
- Scheduled Monument
- Scheduled Monument 500 m Buffer
- Search Area for Locating Riparian Planting (30 m Watercourse Buffer)
- Search Area for Locating Blanket Bog Restoration Opportunities
- Area for Reduced Grazing and Cessation of Muirburn
- Potential Planting Area for Pansies within U4 Acid Grassland Area of U4 Acid Grassland

LAYOUT DWG: 04728-RES-LAY-DR-PE-003
T-LAYOUT NO.: PSCOLCF024
DRAWING NUMBER: 405.065663.00001.0001.0
SCALE - 1:35,000 @ A3

BIODIVERSITY ENHANCEMENT AND RESTORATION PLAN 2025