# Tom na Clach Wind Farm Extension

Appendix 11.E

Outline Habitat Management Plan

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BSG | ecology

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# Contents

# 1 Introduction

### Background to commission

1.1 An Outline Habitat Management Plan (OHMP) has been prepared for the proposed Tom na Clach Wind Farm extension site, in support of an application to extend the consented Tom na Clach Wind Farm (hereafter referred to as the Operational Scheme) which is located to the north-west. The site, which is located approximately 22 km to the south-east of Inverness, has an approximate central Ordnance Survey Grid Reference (OSGR) of NH 86563 34600. The Proposed Development boundary is shown in Figure 1, Section 5.

1.2 This OHMP has been produced as a working document that will be updated, as required, following grant of planning permission. It will be informed by any necessary pre-construction and other relevant surveys, and will be subject to consultation with NatureScot, The Highland Council (THC) and other relevant stakeholders. It describes outline management objectives proposed to reduce potential impacts on existing habitats from the Proposed Development, and management objectives for the restoration and enhancement of retained habitats.

### Aims and objectives

1.3 This OHMP identifies a range of opportunities for enhancing the habitats within the site of the Proposed Development, and for the maintenance or enhancement of any protected species' populations supported by them. These opportunities will result from the requirement to remove peat to accommodate the Proposed Development, but with the resultant peat being retained on site.

1.4 Reference has been made to relevant plans and policies including local biodiversity initiatives set out in the Highland Biodiversity Action Plan (2021-2026) when defining these aims. Consideration has also been given to the future management requirement for the site as part of a larger working estate.

1.5 The main aims of the OHMP are:

1. To improve the biodiversity and condition of bog habitats within the site boundary;
2. To enhance watercourse and riparian habitats for water vole, otter and fish;
3. To retain and enhance heathland and acid flush habitats within the site boundary;
4. To minimise the collision risk to birds and bats around the turbines.

1.6 The following actions are identified to achieve the above aims:

- Actions to achieve Aim 1:
    - Reuse excavated peat within the site as the basis for habitat enhancement / restoration.
    - Reduce the rate of peat drying and erosion where possible.
    - Implement measures to re-wet the retained areas of peat including the re-use of extracted peat, for example, to block gullies.
    - Encourage the re-growth of peat-forming species and wet heath species in areas where bare peat is currently present.
- Actions to achieve Aim 2:
    - Reduce grazing pressure along selected sections of watercourse.
    - Maintain habitat connectivity for otter and water vole throughout the site.
- Actions to achieve Aim 3:
    - Restrict construction activities so that sensitive habitats are safeguarded
    - Design a programme of habitat restoration works on suitable areas where heathland and acid flush habitats are to be retained.

- Actions to achieve Aim 4:
    - Maintain a maximum vegetation height of 30 cm around each turbine.
    - Monitor vegetation around each turbine and implement measures to prevent the development of habitats that might attract species at risk of colliding with turbines.

# 2 Baseline Conditions

2.1 The site and its environs have been subject to Phase 1 habitat survey, National Vegetation classification (NVC) survey, and protected species surveys in 2014 and 2020/21. The survey methods and results are detailed in Appendices 11.A to 11.D of the Environmental Statement for the Proposed Development (BSG Ecology, 2022a,b; PlantEcolo, 2021; Waterside Ecology, 2021). The results of these surveys have been used to inform this OHMP.

**Designated sites**

2.2 The site of the Proposed Development is not subject to any statutory designations; however, desktop study has identified a number of statutorily designated sites within 5 km of the site, including sites of European importance (Special Areas of Conservation - SACs, Special Protection Areas - SPAs and Ramsar sites) and sites of National importance (Sites of Special Scientific Interest - SSSIs). These sites are listed in Table 1 together with details of their proximity to the Proposed Development.

***Table 1**: Statutorily designated sites within 5 km of the Proposed Development*

| Site name | Reasons for designation | Location of nearest section of site | Contextual comments |
|---|---|---|---|
| Carn nan Tri-tighearnan SAC | Blanket bog habitats | c.2.4 km north-west | Separated from the Proposed Development site by the River Findhorn and therefore not likely to be hydrologically connected to it. |
| Carn nan Tri-tighearnan SSSI | Blanket bog and subalpine dry heath habitats | c.2.4 km north-west | Separated from the Proposed Development site by the River Findhorn and therefore not likely to be hydrologically connected to it. |
| Findhorn Terraces SSSI | Fluvial geomorphology interest | c.2.2 km north-west | No cited ecological interest. |
| Allt a' Choire SSSI | Geological interest | c.1.3 km north | No cited ecological interest. |

**Site description - habitats**

2.3 The Proposed Development covers an area of approximately 300 ha and will be accessed using the existing 11.5 km track which leads to the Operational Scheme from the B9007 to the east. Habitats either side of the existing access track are dominated by blanket bog; watercourses cross under the track in a small number of locations.

2.4 Habitats within the Proposed Development include modified blanket bog with smaller areas of wet heath, dry heath, acid flush and acid grassland. A few scattered shrubs occur within the site but there are no trees or areas of woodland.

2.5 Heather *Calluna vulgaris* - hare's-tail cotton-grass *Eriophorum vaginatum* blanket mire (19) occurs extensively within the Proposed Development site. Most of this community had a high abundance of the reindeer lichens *Cladonia arbuscula* and *C. uncialis*. The stands of this vegetation type are best placed in the cowberry *Vaccinium vitis-idaea* – glittering wood-moss *Hylocomium splendens* sub-community (M19c) and possibly the crowberry *Empetrum nigrum nigrum* variant as described in Rodwell *et al*., (1992a).

2.6 The remaining areas of the M19 vegetation are not easily placed in either the cross-leaved heath Empetrum nigrum or crowberry sub-communities (M19a and M19b, respectively). Some of the stands of this vegetation were on shallow peat, i.e., less than 50 cm deep, and were therefore classified as wet heathland rather than blanket bog.

2.7 Much of the area of blanket bog on the site is not in good condition. The combination of moor drains, erosion, muirburn and sheep grazing has resulted in this habitat being significantly modified, including the extensive drying of the peat. There are no areas of intact active blanket bog vegetation present within the survey area.

2.8 The next most widespread plant community is the heather - blaeberry *Vaccinium myrtillus* heath (H12), which covers less than 10% of the ground within the Proposed Development. This community is represented by the heather sub-community (H12a), which has a high cover of heather. It is most abundant on the slopes of the various valleys within the survey area.

2.9 Small area of the following acid heath communities are also present:

- heather – wavy hair-grass *Deschampsia flexuosa* heath (H9), which is in an area where evidence of recent burning was noted.
- Heather - blaeberry - bog-moss *Sphagnum capillifolium* heath (H21) was found on north- to east-facing slopes of the stream valleys.
- Blaeberry – cloudberry *Rubus chamaemorus* heath (H22) was found on north to north-west facing slopes at the western side of the Proposed Development.
- Heather – reindeer lichen *Cladonia arbuscula* heath (H13) and heather – bearberry *Vaccinium uva-ursi heath* (H16) were found on the summits of small hillocks on the higher ground towards the west of the Proposed Development.

2.10 Acid flush communities are the most common wetland community on the site and are strongly associated with features such as springs, burns, and drains but can spread out into depressed basins along these features. The areas of star sedge *Carex echinata* – bog-moss *Sphagnum recurvum/S. auriculatum* mire are dominated by soft rush and consequently best placed in the M6c sub-community.

2.11 In some places the acid flushes have relatively extensive carpets of *Sphagnum fallax* where soft rush is totally absent. These areas are better matched to the feathery/flat-topped *S. cuspidatum/S. fallax* bog-moss bog pool (M2) community.

2.12 Small areas of acid grassland are present within the Proposed Development, restricted to better drained soils within the stream valleys and associated with the burns and acid flush communities. The sheep's fescue *Festuca ovina* - common bent *Agrostis capillaris* - heath bedstraw (U4) and mat-grass *Nardus stricta* - heath bedstraw (U5) grassland communities are common types of acid grassland community found in the uplands of Britain.

2.13 A small area of juniper *Juniperus communis* scrub (W19) is present in the valley which forms the headwaters of the Allt Seileach.

2.14 The site is drained largely by the headwaters of Rhilean Burn, including the following named watercourses: Allt Carn an t-Sean-liathanaich (the upper reach of the main stem of Rhilean Burn), Allt an t-Slugain Mhoir and Caochan Tom nan Clach. The entire site lies within the catchment of the River Findhorn.

**Site description – fauna**

***Otter***

2.15 Several otter *Lutralutra* footprints, a spraint and a potential couch were recorded during the walkover survey in 2014; however, with the exception of a single footprint, all of these field signs were located outside the Proposed Development site to the west and south.

2.16 Survey in 2020/21 identified a single otter spraint on a rock along the Allt Carn an t-Sean-liathanaich at approximate OSGR NH 87577 34656. No other evidence of otter presence was recorded during the surveys of the Proposed Development site.

***Water vole***

2.17 The 2014 survey work recorded water vole *Arvicola amphibius* signs along the upper section of the Allt Carn an t-Sean-liathanalch, and along the upper section of the Caochan Tom nan Clach burn, both sections of which fall within the Proposed Development site.

2.18 No evidence of water vole was identified during either the 2020 or 2021 survey.

***Pine marten***

2.19 During the surveys carried out in 2014 fresh prints that were considered to have been made by a pine marten *Martes martes* were found in wet peat approximately 500 m to the south-west of the Proposed Development site, in close proximity to Glenkirk Forest. No other field signs were recorded at that time.

2.20 No evidence of pine marten was recorded during the 2020/21 survey.

***Bats***

2.21 There are no roosting opportunities for bats within the Proposed Development site.

2.22 Static bat detector surveys in 2020 and 2021 found that only common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus* and *Myotis* sp. bats used the site. Most of the recorded bat passes were common pipistrelle.

2.23 Bat activity within the site was low and so it is concluded that the area is of limited importance for roosting, foraging and commuting bats.

***Wildcat***

2.24 No evidence of Scottish wildcat *Felis silvestris* was recorded during survey work in 2014.

2.25 No evidence of wildcat was recorded during the 2020 or 2021 survey.

***Fish and fish habitats***

2.26 Survey during 2014 found that the reaches of Rhilean Burn and Allt Seileach within the Proposed Development are inaccessible to migratory salmonids (due to the presence of a high >5 m waterfall near the confluence of the Rhilean Burn with the River Findhorn).

2.27 Survey findings in 2020 are consistent with 2014 and suggest that resident (non-migratory) brown trout *Salmo trutta* are the only fish species present within the Proposed Development.

2.28 The largest areas of suitable trout habitat are along the Allt Carn an t-Sean-liathanaich, which also provides the best quality rearing habitats for this species. Electric fishing survey found trout fry densities in the stream were generally poor and were lower than parr densities. The majority of parr were aged 1+ and this cohort was relatively strong.

2.29 Good numbers of trout parr were recorded in the lower reaches of Caochan Tom nan Clach; fry were outnumbered by older year classes, mainly 1+ parr. This stream is moderately productive for trout and little suitable spawning habitat was found to be present. The better quality habitat was found to be restricted to the lower 300 m of the stream.

2.30 Trout was widespread in most other watercourses within the Proposed Development, albeit in low densities at some locations. Densities of trout fry were generally low, but parr densities were mainly fair to excellent by regional standards. This may suggest that there is substantial, natural year-to-year variation in trout recruitment.

***Other species***

2.31 Mountain hare *Lepus timidus* was recorded within the Proposed Development site. Signs of red deer *Cervus elaphus* were encountered during the surveys, predominantly in the form of droppings.

**Land Use**

2.32 It is understood that the estate is managed for game shooting. It is subject to periodic muirburn on a rotational basis. Sheep graze the site.

**Prediction of Future Baseline**

2.33 It is widely accepted that the UK's climate is changing as a result of anthropogenic influences. Although the exact effects of climate change are not known, computer models that simulate the climate suggest that, as a result of warming, extremely wet winters could become more likely in the future, with more intense downpours in the winter months driving a greater risk of flash floods and river flooding. Conversely, the models suggest that the UK could experience warmer, drier summers in the future.

2.34 Within the Site, any effects arising as a result of climate change are not predicted to have a significant effect on the biodiversity of the Site and adjacent area. Although more intense rainfall events may occur, run-off from the Proposed Development would be balanced by the existing landform and habitat types (mostly degraded bog), thereby ensuring that the flow within any receiving watercourse does not deviate significantly from the existing regime.

2.35 It is possible that over an extended period of time certain species my change their range in response to climatic changes. This may either result in species moving away from the site or onto the site.

2.36 The remnant blanket bog habitats within the site are in poor condition and are unlikely to improve without management intervention. It is therefore likely there would be no significant future change in these habitats unless measures are implemented to change the current management (muirburn and grazing) and to block drains and reduce erosion.

2.37 The range of faunal species present within the site is not expected to vary significantly over time. For example, otter presence is likely to be dictated by prey availability and the presence of suitable habitats for the establishment of holts and resting places. Taking this into account it would be expected that otter numbers would remain relatively stable. Similarly, pine marten numbers would also be expected to remain relatively stable as the number and quality of den sites is unlikely to change significantly. Prey densities are likely to remain stable and this may become a key factor in limiting population expansion.

2.38 Water quality would be expected to remain stable as long as there are no pollution events, although watercourses may be affected by peat erosion if this continues, potentially resulting in some small-scale changes in biological water quality.

# 3 Aims, Objectives and Recommended Actions

### Roles and Responsibilities

3.1 The Applicant will be responsible for meeting the commitments made in the (detailed) HMP, which will be based on the objectives and principles set out in this OHMP. At this stage it is envisaged that these activities will be managed by contractors employed by the Applicant of the Proposed Development.

3.2 It is envisaged that the implementation of the detailed HMP will be a condition of the planning consent for the Proposed Development, following agreement of the (detailed) HMP post-consent by the consenting authority in consultation with appropriate consultees, notably NatureScot and Scottish Environment Protection Agency (SEPA).

3.3 Management actions and monitoring results will be reviewed annually by the HMP Stakeholder Group. The precise remit and structure of the Stakeholder Group will be agreed post-consent but at this stage it is considered that, as a minimum, the following organisations are likely to be represented:

- Applicant;
- NatureScot;
- SEPA.

### Management objectives

3.4 This OHMP has been based on the guidance originally published by SNH (now NatureScot – see SNH, 2016). This guidance states that the HMP should "*incorporate flexibility and be subject to periodic review. This will ensure that works/actions can be altered in response to monitoring results over time, evolving guidance or unexpected events. Any alterations would be subject to approval of the HMP steering group*."

3.5 In situations when habitat management activities are implemented but there may be some uncertainties about their effects, monitoring will be is the process undertaken to measure and evaluate the effects of the management, and the results are used to inform future management decisions. In other words, relevant, appropriately timed monitoring is therefore important to enable the success of the HMP tasks to be determined and to identify opportunities for further development of habitat management tasks.

3.6 Monitoring objectives are outlined for each conservation feature in the sections below. Each monitoring objective will be 'SMART' (acronym explained below) and cost effective:

- S – Specifically address the feature;
- M – Measurable, i.e., quantified (for example, in terms of definitive numbers of individuals or proportionate growth of a population);
- A – Achievable;
- R – Relevant, and in compliance with, the overarching HMP aims (which encompass legal, policy and best practice requirements); and
- T – Time-based to ensure that success rates or alternatively remedial actions can be ascertained.

3.7 Monitoring results will be reported to the HMP Stakeholder Group. Reporting of monitoring results and the review of management prescriptions will be undertaken by suitably qualified and experienced ecologists. The HMP Stakeholder Group will be responsible for reviewing the results of the monitoring and agreeing amended management prescriptions if necessary.

**Management measures**

3.8 Proposed management measures are set out in Table 2 for each of the objectives identified in Section 1.6.

***Table 2:*** *Proposed management measures*

| Objective | Management Measure |
|---|---|
| **Aim 1:** | |
| Reuse excavated peat within the site as the basis for habitat enhancement / restoration. | Identify areas where excavated peat can be placed and use as the basis for habitat enhancement / restoration. Peat reuse should take into account published guidance (Scottish Renewables & SEPA, 2012; SEPA, 2017).<br><br>The following principles will be adopted for peat extraction, storage and reuse:<br><br>Areas of peat within the footprint of any excavation will have the top layer of vegetation stripped off as turf prior to construction by an experienced specialist contractor.<br><br>Excavated turfs will be as intact as possible, which will typically be achieved by removing large turves up to 500 mm thick.<br><br>Peat will be excavated and stored in separate horizons.<br><br>Turves will be stored so that the vegetation is uppermost in a way that ensures they remain moist and viable.<br><br>Peat will be kept damp.<br><br>Peat will be reinstated as soon as practicable following excavation.<br><br>Low ground pressure excavators will be used for both extraction and reinstatement of the peat to minimise the risk of peat compression and damage to vegetation. |
| Reduce the rate of peat drying and erosion where possible. | Identify areas where habitat restoration may be feasible taking into account the location and extent of existing habitats, together with the topography of the site. |
| Re-wet the retained areas of peat where opportunities exist. | Implement measures to re-wet the retained areas of peat including the re-use of extracted peat, for example, to block gullies. |
| Encourage the re-growth of peat-forming species and wet heath species in areas where bare peat is currently present. | Create suitable conditions to encourage the re-growth of desirable species. Monitor progress and implement measures to encourage re-growth if natural regeneration is unsuccessful.<br><br>Any areas of bare peat, where vegetation is not re-growing, will be seeded with a seed mixture obtained from the existing habitat or commercial seeds of local genetic provenance.<br><br>The re-vegetated areas will be monitored. |

| Objective | Management Measure |
|---|---|
| **Aim 2:** | |
| Reduce grazing pressure along selected sections of watercourse. | Implement measures to reduce grazing pressure, such as reducing livestock numbers or installing stock-proof fencing. |
| Maintain habitat connectivity for otter and water vole throughout the site. | Ensure that all watercourse crossings are designed and constructed in accordance with SEPA's position statement on the culverting of watercourses (SEPA, 2006) and good practice guidance (SEPA, 2010). |
| **Aim 3:** | |
| Restrict construction activities so that sensitive habitats are avoided and protected. | Implement measures to clearly mark the locations of sensitive habitats that are to be avoided. |
| Design a programme of habitat restoration works on suitable areas where heathland and acid flush habitats are to be retained. | Identify areas where habitat restoration may be feasible taking into account the location and extent of existing habitats, together with the topography of the site. |
| **Aim 4:** | |
| Maintain a maximum vegetation height of 30 cm around each turbine. | Maintain vegetation in cleared areas around each turbine at a maximum height of 30 cm, either through grazing or mechanical cutting to dissuade at risk species from collision risk areas. |
| prevent the development of habitats that might attract species at risk of colliding with turbines. | Monitor vegetation around each turbine and implement measures to prevent the development of habitats that might attract species at risk of colliding with turbines. |

# 4 Monitoring

4.1 Monitoring will be undertaken to determine the effectiveness of the management and assess the need to alter management prescriptions, e.g., control of undesirable species, stabilisation of eroding areas with geotextiles, or changes in the grazing regime.

4.2 During the first five years of operation of the Proposed Development, vegetation monitoring will consist of assessments undertaken on a regular basis (annually during the period May to September). This will include recording the percentage cover of indicator species of habitat condition, such as *Sphagnum* mosses, from within fixed quadrats. The results will be used to assess the nature of any change, including vegetation establishment and development, as well as any ongoing problems of erosion. This in turn will inform future management, with prescriptions being altered, if necessary.

4.3 After year five, the need for continued monitoring will be evaluated in consultation with the HMP Stakeholder Group.

4.4 Hydrological monitoring will be carried out in the areas where excavated peat has been deposited. The objective is to monitor the water table level annually within the first five years of the HMP, after which the need for continued monitoring will be evaluated and agreed with the HMP Stakeholder Group.

**Data Collection**

4.5 In line with recommendations and mitigation measures in the Tom nan Clach Wind Farm Extension Environmental Statement, surveys should be undertaken to assess the effects of the Proposed Development on important ecological features, specifically otter, water vole and mountain hare.

4.6 Fixed-point photography may be used to assess changes in vegetation cover in areas where important ecological features may be impacted during the construction phase of the Proposed Development. The precise locations will be recorded by GPS (Global Positioning System). Notes on the field of view, height and direction of the photograph will also be recorded to allow future comparison.

4.7 Fixed quadrats may be used to monitor changes in vegetation composition. The position of the quadrats will be GPS referenced to ensure their relocation in future years of monitoring. As well as data on the species composition of each quadrat, data on the condition of the vegetation will also be recorded.

**Data Analysis**

4.8 The data from the surveys will be used to assess the change from the baseline survey conditions and the fixed-point photographs supplemented by additional observations taken while in the field will be used to provide a subjective assessment.

4.9 If the results indicate that no or negative change is taking place then a review will be undertaken to appropriately revise the management approach.

**Stakeholder Involvement**

4.10 The results of the monitoring programme will be made available to interested parties including relevant employees of the estate stalker whose experiences of the changes arising due to the land management changes shall be taken into account.

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