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Technical Report

Appendix 6.4 Lochluichart BESS Biodiversity Net Gain Report

Boralex

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Contents

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1. Introduction

1.1 Terms of Reference

Atmos Consulting Ltd (Atmos) were commissioned by Boralex Ltd to produce a biodiversity net gain (BNG) report in relation to a 36MW BESS project at Lochluichart in the Highlands; hereafter referred to as the 'Site'.

The Site (approximate central nation grid reference NH 34178 63847) is located to the north of Loch Luichart, 6km northwest of Garve. The habitats within the wider area consist of Loch Luichart to the south of the Site and forestry, semi-natural woodland, and various grasslands.

1.2 Site Location and Description

The majority of the Site consists of conifer plantations of various age classes and with different management interventions, leading to a contrast between dense plantations dominated by spruce and more open woodland structures. Some of the thinned plantations are broadleaved dominated, mainly by silver birch *Betula pendula*, and others are conifer dominated. Habitats on Site are frequently mixed with INNS Rhododendron. Habitats within the site boundary also include degraded blanket bog and wet heathland with cross-leaved heath.

Within the 50m survey buffer, there are areas of conifer plantation, Scots pine *Pinus sylvestris* woodland, upland birch woodland, and other broadleaved woodland. The grassland along the access track is heavily grazed and predominantly classed as other neutral grassland with areas of modified grassland and acid grassland.

1.3 Objectives

The objectives of this report are:

- To summarise the policy requirements for biodiversity net gain;
- To summarise the habitat baseline and condition of the Site;
- To demonstrate the process followed in line with the mitigation hierarchy; and
- To quantify the baseline biodiversity value of the Site and the measures required to achieve a potential minimum of 10% biodiversity net gain.

2. Planning Policy and Guidance

2.1 National Planning Framework 4

National Planning Framework 4 (NPF4) (Scottish Government, 2024) sets out Scotland's national spatial strategy, spatial principles, regional priorities, national developments and nation planning policy. Policy 3 includes the following requirements for development proposals:

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 Environmental Impact Assessment 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.*
c) *Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity, in accordance with national and local guidance. Measures should be proportionate to the nature and scale of development. Applications for individual householder development, or which fall within scope of (b) above, are excluded from this requirement.*
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.*

2.2 NatureScot Guidance

The Developing with Nature guidance (NatureScot, 2025) outlines how development proposals should address policy 3(c) of National Planning Framework 4. The present report has been produced within cognisance to this guidance.

2.3 The Highland Council Biodiversity Planning Guidance

Based on NPF4 Policy 3, The Highland Council (2024) has issued a Biodiversity Planning Guidance document which includes the following requirements:

- *A minimum 10% biodiversity enhancement is required. It is the developer's responsibility to demonstrate to the satisfaction of the Planning Authority that this threshold has been achieved. Until a Scottish metric is available and to assist the smooth passage of the application, it is recommended that England's Statutory Metric is used to demonstrate and to justify the type and extent of biodiversity enhancement proposed. Until a Scottish metric is available, applicants may wish to use an alternative metric, adapt or amend England's Statutory metric or utilise a different methodology. Where these or other alternative approaches have been taken the rationale must be clearly justified and set out in a supporting statement.*
- *Where habitat enhancement measures cannot be accurately taken into account through a metric, such as INNS* [invasive non-native species] *removal, this will still be given consideration by the planning authority as contributing towards enhancement. It is the developer's responsibility to ensure that all relevant sections of Policy 3 have been fulfilled.*

2.4 Conservation Priorities

Habitats of conservation interest are those listed as priorities on the Scottish Biodiversity List (Scottish Government, 2020) and the Highland Nature: Biodiversity Action Plan 2021-2026 (Highland Environment Forum, 2021).

3. Methodology

3.1 Reasoning for Approach

3.1.1 Mitigation Hierarchy

A planning application to THC must demonstrate that steps have been taken to meet the mitigation hierarchy, as follows:

- Avoid – by removing the impact at the outset;
- Minimise – by reducing the impact;
- Restore – by repairing damaged habitats;
- Offset – by compensating for the residual impact that remains, with preference to onsite over off-site measures; or
- A combination of all four, in that order.

In their planning guidance, THC state that they expect a high percentage of biodiversity offsetting and enhancement to be delivered onsite. However, where all the biodiversity offsetting and/or enhancement cannot be delivered onsite, despite iterative design or the minimum 10% enhancement threshold (where applicable) cannot be met onsite, it can be delivered offsite to make up any shortfall. Their preferred option is that offsite offsetting and/or enhancement is delivered on land within the control of the developer. Another option is that the developer pays THC a financial payment in exchange for the Council taking on the responsibility for securing the delivery of the biodiversity offsetting and/or enhancement, off-site. However, this option is not currently available. A further option is that a third-party broker or provider such as an NGO is used to deliver biodiversity offsetting and/or enhancement, offsite. However, such options appear to be very limited at the time of writing.

3.1.2 Irreplaceable habitats

A development proposal should seek to avoid the loss of any Irreplaceable Habitat present. The definition and list of irreplaceable habitats for BNG are set out in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. The list includes:

- Ancient woodland;
- Ancient and veteran trees;
- Blanket bog;
- Limestone pavements;
- Coastal sand dunes;
- Spartina saltmarsh swards;
- Mediterranean saltmarsh scrub; and
- Lowland fens.

The presence of any irreplaceable habitats on Site should be recorded in the DEFRA Biodiversity Metric. However, the 10% BNG requirement does not apply when irreplaceable habitats are lost. Instead, bespoke compensation would be required, and planning permission for development resulting in the loss or deterioration of irreplaceable habitat will only be granted in wholly exceptional circumstances and where a suitable compensation strategy exists.

It is worth noting that the above regulations apply only to England and Wales and not to Scotland. However, as the DEFRA Metric was developed for England and Wales and it is the DEFRA Metric

which is being used in this instance, the abovementioned list of irreplaceable habitats has been adhered to and included.

3.1.3 Site Survey and Habitat Condition Assessment

A habitat survey following UKHab was undertaken on the 6th and 7th of March 2025. The condition of the habitats present was assessed based on the standard methodology (DEFRA, 2025b).

3.1.4 Strategic Significance

To determine the 'strategic significance' of the habitats as part of the BNG assessment any habitats refenced within the Highland Nature: Biodiversity Action Plan 2021-2026 and the Scottish Biodiversity List (Scottish Government, 2020) have been classified as 'Formally identified in local strategy'. Habitats that have not been specifically listed within the local habitat initiatives but have been deemed as important habitats within the local area have been classified as 'Location ecologically desirable but not in local strategy' and all other habitats have been classified as 'Area/compensation not in local strategy/no local strategy'.

3.1.5 Biodiversity Net Gain Calculations

In order to calculate the baseline biodiversity unit (BU) value of the Site, the effects of the Proposed Development and to quantify the proposed mitigation, enhancement and habitat creation measures, the latest DEFRA Statutory Biodiversity Metric (DEFRA, 2025a) was populated. It followed three steps:

1. First, the existing baseline habitat data, in UKHab format, was entered into the Metric by selecting the relevant drop-down option. This included area-based habitats (such as grassland) as well as linear habitats (hedgerows and lines of trees). Watercourses are absent from within the Site boundary and this habitat module was therefore not completed. The extent, condition and strategic significance of habitats were entered as well. This determined the baseline BU value of the Site;
2. Second, the proposed habitat enhancements were entered, based on measures appropriate for the location, with the extent, target condition and the strategic significance all added; and
3. Finally, the proposed habitat creation measures were entered based on realistic measures for the location, their extent, target condition and their strategic significance.

The result of Steps 2 and 3, when compared to the baseline (Step 1) minus the habitat loss, indicate the overall biodiversity net gain (or loss). Although it is not an explicit requirement under the THC (2024) guidance, the DEFRA (2025c) guidance states that the minimum 10% net gain applies to three habitat modules separately: Area habitats, hedgerows & lines of trees, and watercourses.

Further details are provided in Section 4 and Appendix A including the assumptions and metric results.

4. Results

4.1 On-Site Habitat Baseline

The majority of the Site consists of conifer plantations of various age classes and with different management interventions, leading to a contrast between dense plantations dominated by spruce and more open woodland structures. Some of the thinned plantations are broadleaved dominated, mainly by silver birch *Betula pendula*, and others are conifer dominated. Habitats on Site are frequently mixed with INNS Rhododendron. Habitats within the site boundary also include degraded blanket bog and wet heathland with cross-leaved heath, although these areas are small and localised to the east of the Site. The grassland along the existing access track is heavily grazed and predominantly classed as other neutral grassland with areas of modified grassland and localised patches of acid grassland.

4.1.1 Irreplaceable Habitats and Habitat Distinctiveness

There are very small, localised areas of degraded blanket bog within the Site boundary. These have been avoided where practically possible through the design and proposed placement of the BESS. Irreplaceable habitats are considered very difficult to recreate once destroyed, and/or recreation of said habitats would take a significant amount of time.

Table 1: Baseline Habitat Distinctiveness

Habitats	Distinctiveness
Blanket bog	Very high
Upland acid grassland	Medium
Other neutral grassland	Medium
Modified grassland	Low
Upland heathland	High
Developed land, sealed surface	Very low
Artificial unvegetated, unsealed surface	Very low
Upland birchwoods	High
Other woodland mixed	Medium
Other coniferous woodland	Low

Distinctiveness is defined as a measure based on the type of habitat and its distinguishing features. This includes:

- Consideration of species richness and rarity;
- The extent to which the habitat is protected by designations; and
- The degree to which a habitat supports species rarely found in other habitats.

Table 1 above sets out the distinctiveness of the baseline habitats; with the high and medium habitats being retained and enhanced where possible as well as the low distinctiveness habitats (modified grassland) being retained and enhanced where practical.

4.2 Biodiversity Calculations

The proposed habitat creation and enhancement measures shown on Figure 6.4.1 were input into the biodiversity metric for the project. Appendix A shows the metric headline results.

Overall, for all three habitat modules (area habitats, hedgerows/lines of trees and watercourses) the 10% biodiversity net gain mark has been met and exceeded, Table 2 below refers.

Table 2: Headline Results

Habitats	On-Site Net Change BU	On-Site Net Change %
Area habitats	15.42	14.64

4.2.1 Trading Rules

The DEFRA trading rules are not met for area habitats, specifically for upland heathland with overall loss in BU of -1.75. However, given the retention of the highest value areas and the proposed high quality post-development habitats, it is considered that real-world, meaningful ecological enhancements will be made through these proposals.

The following summarises the predicted changes:

- Very High Distinctiveness Habitats
  - Blanket bog (degraded), cumulative broad habitat change of +1.36 BU.
- High Distinctiveness Habitats
  - Upland heathland, cumulative broad habitat change of -1.75 BU.
- Medium Distinctiveness Habitats
  - Other woodland, mixed, cumulative broad habitat change of +15.80 BU.
- Low Distinctiveness Habitats
  - Loss of other coniferous woodland means a cumulative broad habitat change of -0.22 BU.
  - SUDS created as part of the development lead to a cumulative broad habitat change of 0.22 BU.

5. Discussion & Conclusions

The biodiversity calculations for the proposed development show an overall significant net increase in biodiversity for area habitat net gain of +14.64%.

This will be achieved through the retention of all higher value habitats and the enhancement of degraded blanket bog and mixed species woodland on Site, through sensitive habitat management and an increase in species diversity throughout the woodland. In addition, Invasive Non-Native Species (INNS) Rhododendron, will be carefully removed from the site in line with the OHMP.

Significant gains for ecology are proposed through retention and enhancement of the woodland, planting native species, suitable for the site. All planted trees and shrubs will be of local provenance and will be planted in line with Forestry Commission Practise Note 8: Using Local Stock for Planting Native Trees and Shrubs (Herbert *et al.*, 1999) and be from provenance area 201 if possible. Protection from grazing will be put in place in the form of a suitable sized tree guard. Planting should preferably be undertaken during the period of 1st November to 31st March, with follow-up maintenance over a 5-year period. Trees will require watering as roots establish, guards will be inspected regularly and adjusted as trees grow, then removed when no longer required. Any trees that fail to establish will be replaced.

A commitment is also made to restore peatland habitat elsewhere within the landownership in addition to the area of peatland restoration required to achieve a minimum 10% biodiversity net gain. This is considered a significant enhancement when considered in the context that guidance defines priority peatlands as peatlands which show ‘evidence of being undisturbed and actively forming peat’; yet the majority of habitat to be lost is not actively peat forming and in fact is being actively drained.

Watercourses on Site consist of artificial ditches which will be retained and remain unimpacted by the proposed development.

Given the retention of the highest ecologically valuable areas and the proposed high quality post-development habitats, it is considered that real-world, meaningful ecological enhancements can be made through the proposals, which is reflected in the significant Biodiversity Net Gain. In addition, the above measures reflect a commitment to enhancing biodiversity on site, in line with NatureScot ‘Developing with Nature Guidance’, as well as to THC ‘Biodiversity Enhancement Planning Guidance’, with the emphasis on strengthening existing areas of connectivity with the wider landscape, as well as retaining the most ecologically important and sensitive habitats in the first instance, in accordance with the Mitigation Hierarchy.

6. References

DEFRA (2025a). Statutory biodiversity metric calculation tool (macro enabled). Department for Environment, Food & Rural Affairs. Available online at: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides

DEFRA (2025b). Statutory biodiversity metric condition assessments. Department for Environment, Food & Rural Affairs. Available online at: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides

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Scottish Government (2020). Scottish Biodiversity List. Version 1.5. Available online at: https://www.nature.scot/sites/default/files/2022-04/Scottish%20Biodiversity%20List.xls

THC (2024). Biodiversity Enhancement Planning Guidance. Adopted May 2024. The Highland Council. Available online at: https://www.highland.gov.uk/download/downloads/id/28840/biodiversity_enhancement_planning_guidance.pdf

Appendices

Appendix A. Biodiversity Net Gain Headline Results

Headline Results

Return to results menu

Scroll down for final results ⚠

On-site baseline	*Habitat units*	105.29	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	120.71	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site net change (units & percentage)	*Habitat units*	15.42	14.64%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Off-site baseline	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	15.42	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

Ensure bespoke compensation has been agreed where stated ⚠

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	15.42
	Hedgerow units	0.00
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	14.64%
	Hedgerow units	0.00%
	Watercourse units	0.00%
Trading rules satisfied?		No - Check Trading Summaries ▲

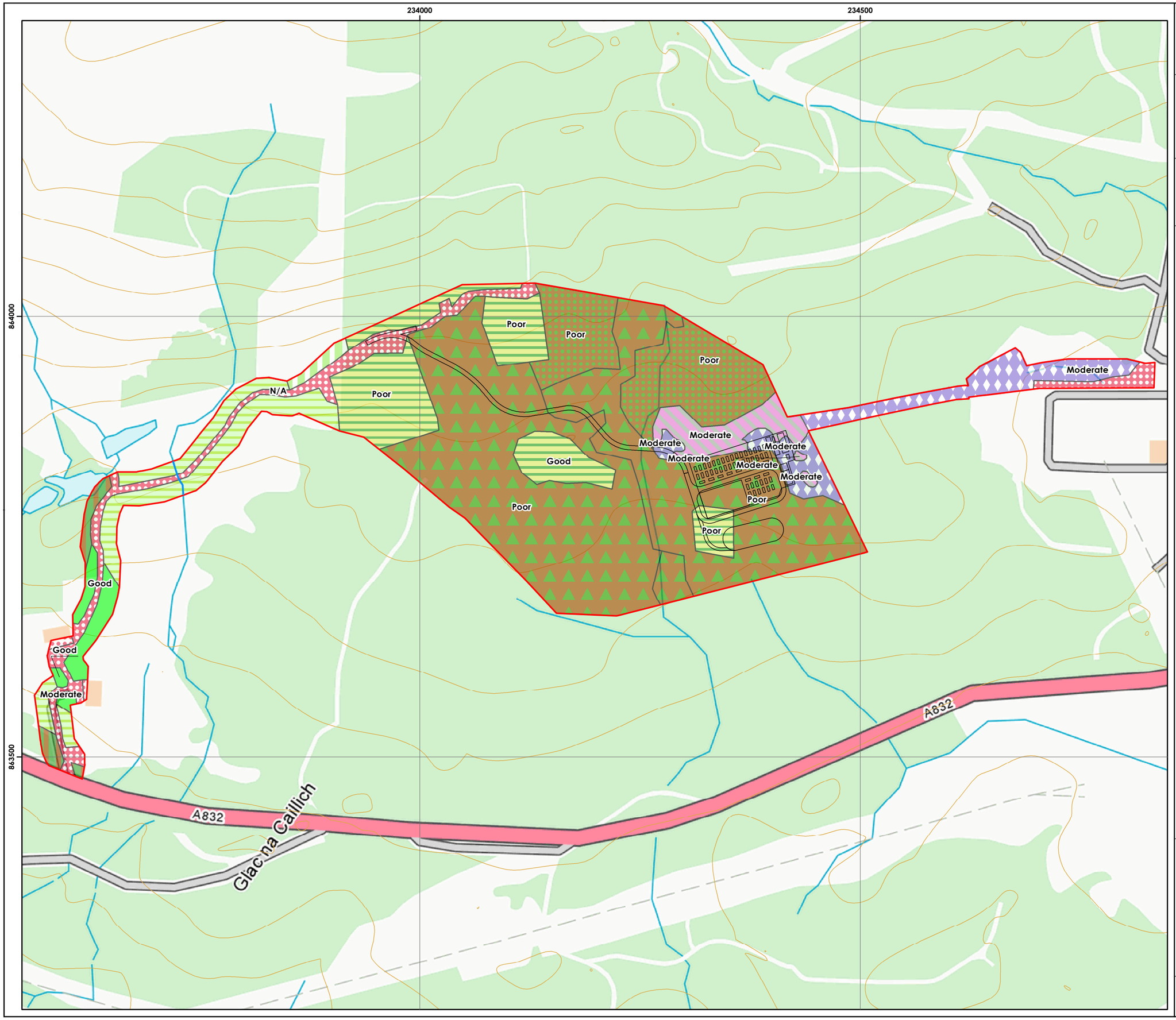
Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	105.29	115.82	0.00	No additional area habitat units required to meet target ✓
Hedgerow units	10.00%	0.00	0.00	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	0.00	0.00	0.00	No additional watercourse units required to meet target ✓

Input errors/rule breaks present in metric ▲

Lochluichart East

BORALEX

Figure 6.4
BNG Baseline Areas and Proposed Infrastructure



Key

- Site boundary
- Proposed infrastructure

UKHAB Habitat

- f1a6 - degraded blanket bog
- g1b - upland acid grassland
- g3c - other neutral grassland
- g4 - modified grassland
- h1b6 - wet heathland with cross-leaved heath
- u1b5 - buildings
- u1c - artificial unvegetated unsealed surface
- w1e - upland birchwoods
- w1h5 - other woodland, mixed; broadleaved
- w1h6 - other woodland; mixed; conifer
- w2c - other coniferous woodland
- r2b - other rivers and streams

atmos CONSULTING

0 50 100 200
Meters

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Scale @ A3:
1:4,000

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