



MacArthur
Green

Skye Reinforcement Project Kinloch and Kyleakin Hills SAC

Compensation Plan (Compensatory Measures, Timescales and Monitoring)

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1 INTRODUCTION

This Compensation Plan (herein referred to as the ‘Plan’) details compensation proposals for the predicted impacts on qualifying habitats of the Kinloch and Kyleakin Hills Special Area of Conservation (SAC) from the Skye Reinforcement Project (the Proposed Development). The Plan builds on consultation on compensatory areas and measures undertaken with NatureScot and Forestry and Land Scotland (FLS) during 2022 and 2023.

The purpose of this Plan is to provide appropriate information to demonstrate that the required compensation can be successfully delivered within the areas identified. The information used to inform this Plan includes:

- Technical Appendix: Skye Reinforcement Project: Kinloch and Kyleakin Hills SAC Compensation Plan (including results from National Vegetation Classification (NVC) Surveys, Target Notes and Common Standards Monitoring (CSM) surveys) (see Annex C to this document).
- Forestry and Land Scotland (23 July 2019) Kinloch Hills and Broadford Land Management Plan 2019-2029.
- Forestry and Land Scotland (Date not stated) Peatland Restoration – Operational Specifications.
- Forestry and Land Scotland (supplied by FLS – email 12 May 2023) Kyle Farm III and Choire Bhudie peat depth data.
- Peat depth and condition data collected by SLR Consulting Ltd.
- SLR Consulting Ltd (July 2023). Skye Reinforcement Project: Compensation Area. Peat Landslide Hazard and Risk Assessment (see Annex D to this document).
- Scottish Hydro Electric Transmission plc (February 2023). Skye Reinforcement Project: Derogation Case under the Habitats Regulations.

This Plan is set out in the following sections:

- Introduction;
- Habitats Regulations Appraisal summary;
- Criteria for Identifying Compensatory Measures;
- Compensation Areas;
- Aims, objectives and management prescriptions;
- Monitoring; and
- Management and monitoring timetable (Annex A).

1.1 Compensation Management Group

A Compensation Management Group (CMG) would oversee and monitor the implementation of the agreed Plan. The CMG should include representatives from NatureScot, Forestry and Land Scotland (FLS) and Scottish and Southern Electricity Networks Transmission (SSEN Transmission).

An annual report would be submitted by SSEN Transmission to the CMG detailing the tasks (management and monitoring) completed over the previous year and those planned for the year ahead. Any monitoring reports would be issued to the CMG as they are produced.

Management prescriptions in the Plan may be amended in light of monitoring results to ensure progress towards the stated aims of the Plan.

2 HABITATS REGULATIONS APPRAISAL

2.1 Overview

The Shadow Habitats Regulations Appraisal (HRA) (MacArthur Green, September 2022) included as Volume 5: Appendix V2-4.7 of the Skye Reinforcement Project EIA Report (September 2022) concluded that, after consideration of mitigation, an Adverse Effect on the Integrity (AEOI) of the Site (Site refers to the Kinloch and Kyleachin Hills SAC) cannot be ruled out for the four of the SAC's qualifying features of western acidic oak woodland, blanket bog, wet heathland with cross-leaved heath, and dry heaths. This conclusion was reached for the Proposed Alignment and Alternative Alignment, both of which cross through the Site. In the event that the Scottish Ministers consider that, notwithstanding an AEOI of the Site, in the absence of alternative solutions, the Proposed Development should proceed for Imperative Reasons of Overriding Public Interest (IROPI) (as set out in the Applicant's Derogation Case – Alternative Solutions and IROPI (Derogation Case)), the Scottish Ministers must adopt compensatory measures to ensure the coherence of the national site network. This Plan sets out the compensatory measures that it is considered are required to ensure that the overall ecological coherence of the Natura network and contribution to favourable conservation status is maintained.

Table 1 below includes a summary of the impacts and the associated adverse effects on the conservation objectives for each qualifying habitat.

2.2 Qualifying Habitats and Conservation Objectives

The qualifying habitats of the SAC include the following:

- Alpine and subalpine heaths;
- Blanket bog;
- Dry heaths;
- Mixed woodland on base-rich soils associated with rocky slopes;
- Western acidic oak woodland; and
- Wet heathland with cross-leaved heath.

The conservation objectives of the Kinloch and Kyleakin Hills SAC are detailed on NatureScot Site Link¹ and are provided below for ease of reference.

- 1) To avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

¹ <https://apps.snh.gov.uk/sitelink-api/v1/sites/8282/documents/29>

- 2) To ensure for the qualifying habitats that the following are maintained in the long term:
 - a) Extent of the habitat on Site;
 - b) Distribution of the habitat within Site;
 - c) Structure and function of the habitat;
 - d) Processes supporting the habitat;
 - e) Distribution of typical species of the habitat;
 - f) Viability of typical species as components of the habitat; and
 - g) No significant disturbance of typical species of the habitat.

The relevant conservation objectives, the extent of the predicted habitat loss (as detailed within Table 12-1 and 12-2 of the Shadow HRA), likely range of compensation ratios, and potential areas required for compensation are noted below in Table 1.

Table 1: Potential Compensation Areas Required for SAC Qualifying Habitats

SAC Qualifying Habitat	Conservation Objectives Affected	Maximum Habitat Loss and Modification#	Likely Compensation Ratio Range	Potential Compensation Areas Required
Western Acidic Oak Woodland	<p>Section 12.2.1 of the Shadow HRA² explains that the following two impacts remain after mitigation.</p> <p>Impact 1a Direct Habitat Loss or Modification - Construction</p> <p>Impact 1b Direct Habitat Loss or Modification – Operation (the Proposed Alignment only)</p> <p>Table 8-6 explains that these impacts primarily affect conservation objective 2a (extent of habitat on site) with more minor secondary knock-on affects on conservation objectives 2b – 2g (section 2.2 above). The principal focus of the compensation is therefore to address the loss of extent of habitat on site.</p>	0.856	1:1.77 to 1:12 ³	1.5 to 10 ha

² MacArthur Green (September 2022) Kinloch and Kyleakin Hills Special Area of Conservation Shadow Habitats Regulations Appraisal. Volume 5: Appendix V2-4.7 of Skye Reinforcement Project EIA Report (September 2022).

³ 1:1.77 based on agreed compensation for Glen Beasdale SAC where the SAC was extended to include an adjacent area of existing oak woodland in unfavorable condition due to the presence of rhododendron and deer impacts. 1:12 based on agreed compensation for loss of ancient woodland from A1 Morpeth to Ellingham Road in Northumberland. The higher compensation ratio here reflected the need to establish a new woodland.

SAC Qualifying Habitat	Conservation Objectives Affected	Maximum Habitat Loss and Modification#	Likely Compensation Ratio Range	Potential Compensation Areas Required
Blanket Bog	<p>Section 12.2.4 of the Shadow HRA⁴ explains that the following two impacts remain after mitigation.</p> <p>Impact 1a Direct Habitat Loss or Modification - Construction</p> <p>Impact 1c Indirect Habitat Loss or Modification - Construction & Operation</p> <p>Table 8-6 explains that direct habitat loss primarily affects conservation objective 2a (extent of habitat on site) with more minor secondary knock-on effects on conservation objectives 2b – 2g (section 2.2 above). The key focus of the compensation for this impact is therefore to address the loss of extent of habitat on site.</p> <p>Table 8-9 explains that indirect habitat loss primarily affects conservation objective 2c and 2d (structure and function of habitat and processes supporting habitat) with minor knock-on effects on conservation objectives 1, 2a, 2b and 2e. A key focus of the compensation for this impact is therefore to address the adverse effects on structure and function and processes supporting blanket bog habitat.</p>	4.692	1:1 to 1:10 ⁵	4.7 to 47 ha

⁴ MacArthur Green (September 2022) Kinloch and Kyleakin Hills Special Area of Conservation Shadow Habitats Regulations Appraisal. Volume 5: Appendix V2-4.7 of Skye Reinforcement Project EIA Report (September 2022).

⁵ 1:1 assumes an adjacent area of blanket bog in favourable condition and 1:10 is based on restoring heavily degraded blanket bog to favourable condition (e.g. forest to bog restoration).

SAC Qualifying Habitat	Conservation Objectives Affected	Maximum Habitat Loss and Modification#	Likely Compensation Ratio Range	Potential Compensation Areas Required
Wet Heath	<p>Same as Blanket Bog (section 12.2.3 of Shadow HRA).</p> <p>The principal focus of the compensation for these two impacts is therefore the same and seeks to address the loss of extent of habitat on site and address the adverse effects on structure and function and processes supporting wet heath habitat.</p>	10,381	1:1 to 1:10 ⁶	10.4 to 104 ha
Dry Heath	<p>Section 12.2.2 of the Shadow HRA⁷ explains that the following impact remains after mitigation.</p> <p>Impact 1a Direct Habitat Loss or Modification - Construction</p> <p>Table 8-6 explains that this impact primarily affects conservation objective 2a (extent of habitat on site) with more minor secondary knock-on effects on conservation objectives 2b, 2c and 2e. The principle focus of the compensation is therefore to address the loss of extent of habitat on site.</p>	0.88	1:1 to 1:3 ⁸	1 to 3 ha

Predicted habitat loss noted here refers to the maximum loss predicted out of the two alignment options (Proposed Alignment and Alternative Alignment). The Proposed Alignment has the greater habitat loss and modification estimates for all the above qualifying habitats.

⁶ As wet heath shares similar supporting hydrological processes to blanket bog, the same compensation ratios are assumed.

⁷ MacArthur Green (September 2022) Kinloch and Kyleakin Hills Special Area of Conservation Shadow Habitats Regulations Appraisal. Volume 5: Appendix V2-4.7 of Skye Reinforcement Project EIA Report (September 2022).

⁸ Dry heath is likely to be easier and quicker to restore than blanket bog, wet heath and woodland and therefore a smaller compensation ratio is assumed.

3 CRITERIA FOR IDENTIFYING COMPENSATORY MEASURES

As defined by Article 6 (4) of the Habitats Directive (92/43/EEC) and Regulation 68 of The Conservation of Habitats and Species Regulations 2017, the purpose of the compensatory measures is to ensure that the overall coherence of the National Site Network (being sites within the UK that were formerly known as Natura 2000 sites) is protected.

The key criteria for determining the suitability of compensatory measures are detailed within European Commission guidance (EC, 2012⁹). These are summarised below for ease of reference along with an explanation of how the criteria are considered within this Plan.

- Targeted (Page 15 and 16. EC, 2012):
 - Measures should be targeted to compensate for the impacts on the Site's conservation objectives identified by the Shadow Habitat Regulations Appraisal.
 - Table 1 above summarises the impacts and associated effects on the relevant conservation objectives for each qualifying habitat. Sub-sections 4.2.3, 4.4.3 and 4.6.3 considers this as part of the criteria in identifying the final compensation areas and measures.
- Effective and Technically Feasible (Page 16 and 17. EC, 2012):
 - 'Compensatory measures must be feasible and operational in reinstating the ecological conditions needed to ensure the overall coherence of the Natura 2000 network'.
 - 'The estimated timescale and any maintenance action required to enhance performance should be known and/or foreseen right from the start in view of the implementation of the measures'.
 - 'must be based on the best scientific knowledge available, complemented with specific investigations for the precise location where the compensatory measures will be implemented'.
 - 'Measures for which there is no reasonable guarantee of success should not be considered under Article 6(4), and the likely success of the compensation scheme should influence the final approval of the plan or project in compliance with the preventive principle'.
 - 'the most effective option, which allow for the greatest chances of success must be chosen when it comes deciding between different possibilities for compensation'.
 - 'The programme of compensatory measures needs to include detailed monitoring during implementation to ensure effectiveness in the long term. Being in the framework of the Natura 2000 network, such monitoring should be co-ordinated with, and eventually integrated into, that foreseen under Article 11 of the Habitats

⁹ Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. 2007/2012.

https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/new_guidance_art6_4_en.pdf

Directive. Measures showing in practice a low level of effectiveness in contributing to the objectives should be modified accordingly’.

- ‘To overcome the intrinsic difficulties standing in the way of full success for the reinstatement of ecological conditions, compensatory measures must be designed’:
 - ‘Following scientific criteria and evaluation in accordance with best scientific knowledge; and
 - taking into account specific requirements of the ecological features to be reinstated’.
 - Section 5 provides details on management prescription and methods to deliver effective compensatory measures. As detailed in sections 4 and 5, these have been based on appropriate data and evidence from field and desk-based surveys. A monitoring plan that is proposed for the implementation period is provided in section 6 to ensure that measures are successfully delivered within appropriate timeframes.
- Extent (Page 17 and 18. EC, 2012):
 - ‘There is wide acknowledgement that ratios should be generally well above 1:1. Thus, compensation ratios of 1:1 or below should only be considered when it is demonstrated that with such an extent, the measures will be 100% effective in reinstating structure and functionality within a short period of time (e.g. without compromising the preservation of the habitats or the populations of key species likely to be affected by the plan or project)’.
 - Table 1 above provides an indication of the potential range of compensation ratios based on available guidance and case studies detailed in Annex B.
 - Section 4 provides further consideration of the proposed compensation ratios based on guidance in addition to the following site-specific factors: location relative to the SAC, current condition, time until future condition, and probability of success. Annex B provides further information on establishing suitable compensation ratios for Natura sites.
- Location (Page 18 and 19. EC, 2012):
 - ‘There is general agreement that the local conditions necessary to reinstate the ecological assets at stake are found as close as possible to the area affected by the plan or project. Therefore, locating compensation within or nearby the Natura 2000 site concerned in a location showing suitable conditions for the measures to be successful seems the most preferred option.’
 - As detailed in section 4, compensation areas are immediately adjacent and connected to the relevant SAC qualifying features.
- Timing (Page 19. EC, 2012):
 - ‘The result of compensation should be effective at the time the damage occurs on the site concerned. Under certain circumstances where this cannot be fully achieved, overcompensation would be required for the interim losses’.

- ‘All necessary provisions, technical, legal or financial, necessary to implement the compensatory measures must be completed before the plan or project implementation starts, so as to prevent any unforeseen delays that may hinder the effectiveness of the measures’.
- ‘It may be possible to scale down in time compensatory measures according to whether the significant negative effects would presumably arise in the short, medium or long term’.
 - As detailed in section 4, measures such as blanket bog and wet heath restoration and woodland establishment will require many years to fully attain favourable condition status. This time-lag can be compensated for via a greater compensation ratio.
 - This Plan provides details on the technical elements of compensatory measures. Legal and financial arrangements are dealt with separately.
- Long-Term Implementation (Page 19 and 20. EC, 2012):
 - A compensatory plan should provide a sound legal and financial basis for long-term implementation and for their protection, monitoring and maintenance be secured in advance of impacts upon habitats and/or species occur.
 - Establishing monitoring programmes for the whole life of the project, including objectives, responsible bodies and resources needs, indicators.
 - Legal and financial arrangements are dealt with separately.
 - Section 6 provides details of monitoring programmes to ensure successful implementation of the compensatory measures.

4 COMPENSATION AREAS

Three ‘Compensation Search Areas’ (Figure 1) were initially identified in consultation with NatureScot and FLS directly adjacent to the SAC and located within the FLS boundary. The following surveys of these areas were then completed to facilitate the identification of the boundaries for the selected compensation areas.

- National Vegetation Classification (NVC) survey (March 2023).
- NVC Target Notes (March 2023): Included information on floristic composition, notable species, browsing, deer impacts, self-seeding conifer encroachment, exotics and invasive non-native species (INNS).
- Habitat Condition Target Notes (March 2023): Common Standards Monitoring (CSM) of Upland Habitats (JNCC, 2009)¹⁰.
- Walkover Survey Target Notes (January 2023): Included information on browsing, deer impacts, exotics and INNS, notable species including bryophytes and lichens.
- Peat depth probing and peat condition augering of Areas A and C.

Details of each Compensation Search Area are provided below, including a justification for the selection of the finalised Compensation Areas.

4.1 Compensation Search Area A (target habitats: blanket bog and wet heath)

4.1.1 Desk study

Compensation Search Area A includes an area of approximately 406 ha north-west of the SAC, where it is bordered by the SAC on two sides. As shown on Figure 1, the Search Area boundary overlaps with a small area of habitat which is part of a Scottish Forestry Alliance (SFA) native woodland restoration project.

The Carbon and Peatland Map 2016¹¹ includes an extensive area of Class 1 peatland present immediately adjacent to the west of Compensation Search Area A (Figure 1). The Carbon and Peatland Map is a predictive tool that provides an indication of the likely presence of peat at a coarse scale which was developed as “a high-level planning tool to promote consistency and clarity in the preparation of spatial frameworks by planning authorities”. It identifies areas of “nationally important carbon-rich soils, deep peat and priority peatland habitat”¹² as Class 1 and Class 2 peatlands. Class 1 peatlands are also “likely to be of high conservation value” and Class 2 “of potentially high conservation value and restoration potential”.

Compensation Search Area A is bordered on the south-east by three areas (Choire Bhudhie, Kyle Farm I and Kyle Farm III) (Figure 1) for which FLS has secured funding for peatland restoration, with works currently progressing at Kyle Farm III (Pers Comm, FLS) and completed at Kyle Farm I. The FLS restoration areas have been selected from FLS’s site specific knowledge of the peatland in the area from previous forestry operations.

From reviewing aerial imagery shown in Figure 1, it is considered that the same habitat with peaty soils continue outside of the FLS peatland restoration areas and into Compensation Search Area A. Furthermore, the contours on Figure 1 indicate that shallow gradient continues beyond the FLS

¹⁰ JNCC (2009). Common Standards Monitoring Guidance for Upland Habitats. Version July 2009. ISSN 1743-8160.

¹¹<https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map>

¹² Priority peatland habitat is land covered by peat-forming vegetation or vegetation associated with peat formation.

peatland restoration area providing further evidence that the hydrologically connected peatland macrotope extends into much of Compensation Search Area A. The National Soil Map of Scotland¹³ validates this and shows the soils within Compensation Search Area A to be predominantly ‘peaty gleys with dystrophic semi-confined peat’, with some areas of ‘peaty gleyed podzols’. This is confirmed by peat depth surveys (Figure 2) which show the hydrological connectivity of the SAC peatland with the adjacent FLS restoration areas and Compensation Area A.

The Kinloch Hills and Broadford Land Management Plan (LMP)¹⁴ details that Compensation Search Area A is partly planted with conifer plantation with felling scheduled for 2035-2039 and existing forestry area where a ‘minimal intervention’ management is proposed (Map 5 of LMP¹⁵), with subsequent planting of predominantly low density native mixed broadleaves and an area of productive mixed conifers (Maps 6a and 6b of LMP¹⁵). Map 3 of the LMP (analysis and concept map), includes an arrow in the vicinity of Compensation Search Area A that is annotated with ‘*Mostly Sitka Spruce and Lodgepole pine. Infected with DNB (Dothistroma Needle Blight) on peat. Many areas have been felled, this will continue over the next 10 years and the peatland will be restored.*’ Map 4.2 of the LMP¹⁵ details the soils of Compensation Search Area A to be comprised of predominantly bog and peaty soils. The climate within the Search Area looks to be predominantly warm, wet/moist, and highly exposed with cooler areas in the south-east (Map 4.3 of the LMP).

There are no areas designated as Ancient Woodland within this Search Area.

Detailed habitat and peat surveys were carried out along the route of the Proposed and Alternative Alignment to inform the Environmental Impact Assessment (EIA) Report (September 2022). The Proposed Alignment (and to a small extent the Alternative Alignment) passes through Compensation Search Area A and therefore detailed survey data for some of this Search Area is available from the EIA stage of the project. Phase 1 habitats recorded included a mosaic of blanket bog, wet modified bog, wet dwarf shrub heath, with coniferous plantation woodland and clear fell areas, as well as smaller areas of broadleaved semi-natural woodland and scattered broadleaf trees; some areas of continuous bracken were also recorded (Figures V2-4.3 (3.07-3.10) of the EIA Report, which also include NVC data¹⁶). Peat depth surveys along the route of the Proposed and Alternative Alignment recorded depths between 0m and over 3m (Figure V6-7.4 (Map 2) of the EIA Report¹⁶).

4.1.2 Walkover Field survey – January 2023

A walkover survey was undertaken at Compensation Search Area A between 23-27 January 2023 by Ben and Alison Averis to gather initial information on the habitats and any noteworthy species present. The following provides a high-level summary of the target notes recorded in Compensation Search Area A during the survey visit (detailed in the Compensation Plan Technical Appendix and shown on Figure 6):

- The Search Area is dominated by commercial conifer plantation (Sitka spruce and lodgepole pine), some of which has been felled.
- Areas of open ground, wayleaves and rides within the plantation are mainly dominated by peatland habitats, in particular M15 wet heath and M17, M19 and M25 blanket mires, areas

¹³ https://map.environment.gov.scot/Soil_maps (Accessed 24/01/2023)

¹⁴ <https://forestryandland.gov.scot/what-we-do/planning/active/kinloch-and-broadford>

¹⁵ <https://forestryandland.gov.scot/images/corporate/design-plans/jrs/kinloch-hills-broadford/Kinloch-Hills-Broadford-LMP-Maps-1-14.pdf>

¹⁶ SSEN Transmission (2022) Skye Reinforcement Project: EIA Report. Available at <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00003395&T=5> (Accessed 24/01/2023)

of M17 were noted to be in good condition. It is likely the commercial conifers were planted over similar habitat types. Some M1 and M2 bog pools recorded.

- Non-peatland vegetation types in open ground are sparse and of low total cover – mostly comprised of U20 (bracken) and a few other communities such as M6 and U16.
- Some of the existing wet heath/blanket mire areas are being invaded by small self-seeding conifer species.
- There are several small woodland parcels scattered throughout the area, most often patches of young to medium aged regenerating birch, willows, and rowan, with some self-seeded Sitka spruce and lodgepole pine (more rarely present are oak, aspen, holly and alder). More mature broadleaved trees are present in small scattered/fragmented clusters, mostly in narrow riparian areas. NVC types W4, W11 and W17 are present.
- Several of the mature broadleaved trees present are rich in bryophytes and lichens.
- Patches of dry heath are rare, small and fragmented (H10 and H21 recorded).
- Grazing by deer appears generally light to moderate (evidence of young trees being browsed).
- Small rhododendron in the region of 1-2 m tall are frequent throughout this Search Area. *Gaultheria mucronata* (prickly heath – a non-native) also recorded.

4.1.3 National Vegetation Surveys and Common Standards Monitoring – March 2023

NVC Surveys and CSM surveys were completed during March 2023 by MacArthur Green staff and Ben and Alison Averis (Figures 3, 6 and 9). The Technical Appendix for this Plan provides full details of survey results. For ease of reference Table 2 below presents the baseline habitat calculations for Compensation Search Area A from the Technical Appendix.

Table 2: Phase 1 and Annex 1 Habitat Types within Compensation Search Area A

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ¹⁷	NVC % of Search Area	Phase 1 % of Search Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	4.27	W4, W4c	1.463	Western acidic oak woodland	0.36	1.05
		W11, W11b, W11c	1.693		0.42	
		W17, W17a, W17b	0.984		0.24	
		SBT	0.126		0.03	
Coniferous Plantation Woodland (A1.2.2)	177.91	CP & YCP	177.908	-	43.84	43.84

¹⁷ N.B. Only SAC qualifying habitat types requiring compensatory measures are detailed here.

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ¹⁷	NVC % of Search Area	Phase 1 % of Search Area
Dense/Continuous Scrub (A2.1)	0.08	W23	0.082	-	0.02	0.02
Recently Felled Coniferous Woodland (A4.2)	132.30	CF, CF>M6c, CF>M15, CF>M15b, CF>M17, CF>M19a, CF>M25, CF>M25a*, CF>Je,	132.303	-	32.60	32.60
Unimproved Acid Grassland (B1.1)	0.04	U4	0.029	-	0.01	0.01
		U6	0.013	-	<0.01	
Marsh/Marshy Grassland (B5)	20.96	M25a, M25b	20.469	-	5.04	5.16
		Je	0.490	-	0.12	
Continuous Bracken (C1.1)	4.06	U20, U20a	4.06	-	1.00	1.00
Tall Herb & Fern: Non-Ruderal (C3.2)	0.40	U16c	0.400	-	0.10	0.10
Acid Dry Dwarf Shrub Heath (D1.1)	0.58	H10, H10a, H10c	0.228	Dry heath	0.06	0.14
		H21, H21a	0.354		0.09	
Wet Dwarf Shrub Heath (D2)	14.73	M15a, M15b, M15c	14.730	Wet heathland with cross-leaved heath	3.63	3.63
Blanket Bog (E1.6.1)	27.88	M1	0.206	Blanket bog	0.05	6.87
		M2	0.518		0.13	
		M17a, M17b, M17c	15.919		3.92	
		M19a	11.236		2.77	
Wet Modified Bog (E1.7)	15.42	M20a	0.563	Blanket bog	0.14	3.80
		M25a*	14.855		3.66	
Acid Neutral Flush (E2.1)	5.48	M6c	5.483	-	1.35	1.35

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 ¹⁷	NVC % of Search Area	Phase 1 % of Search Area
Standing Water (G1)	0.33	SW	0.331	-	0.08	0.08
Bare Ground (J4)	1.36	BG	1.363	-	0.34	0.34
TOTAL	405.80					

The following provides a summary of the key results of the NVC and CSM surveys with further detail provided in the Technical Appendix and shown on Figures 3, 6 and 9:

- In order of abundance, the most dominant habitats and Annex 1 qualifying habitats (denoted by *) in this Search Area are:
 - Recently felled coniferous plantation (76.44%).
 - Blanket bog* and wet modified bog* (10.67%).
 - Marshy grassland (5.16%).
 - Wet heath* (3.63%).
 - Western acidic oak woodland* (1.05%).
 - Dry heath* (0.14%).
- The character and condition of the Annex 1 qualifying habitats in this Compensation Search Area are summarised below:
 - Blanket bog:
 - Relatively small and often fragmented patches of bog persisting within plantation openings or along forest rides, peat forming species remain present here in the remnant areas of bog.
 - In Search Area A there are relatively even amounts of M17 and M19 (with M17a considerably more dominant to M17b).
 - M1 and M2 are bog pool features which cover a very small extent in Search Area A
 - The Target Notes (as well as NVC data) in Search Area A indicate that much of the bog and heath present, despite being in relatively good condition, is subject to encroachment and invasion by self-seeded conifers stemming from the abundant commercial conifer plantation in these areas. There is also a scattering of INNS present (*Gaultheria mucronata*, *Rhododendron ponticum*, *Cotoneaster* sp). Notes on deer browsing indicate it is generally light-moderate.
 - Blanket bog was surveyed at five locations in Search Area A. There were no CSM failures at any of the locations in Search Area A, indicating that the blanket bog that remains is generally in good, or favourable, condition.

- Wet heath:
 - Wet heath is also present and scattered in Search Area A within patches of open ground in woodland coupes and in existing and former forest rides. In some locations there is also an indication that some patches of clear-felled former plantation appear to be recovering and regenerating to a wet heath vegetation type. The majority of wet heath recorded is M15 (sub-communities a, b and c).
 - M15b is widespread and common, mainly on gently sloping peaty ground.
 - M15c is widespread and common.
 - Wet heath was surveyed at four locations in Search Area A. There were no CSM failures at any of the locations in Search Area A, indicating that the wet heath that remains is generally in good, or favourable, condition.
- Western acidic oak woodland:
 - Broadleaved woodland in Search Area A is comprised of several very small stands, most of which are again riparian and associated with a narrow fringe around minor watercourses, although there are some small trackside patches also. The main extent of broadleaved woodland in Search Area A is around Allt Lochain na Sàile.
 - The woodland communities present are generally mixtures of W4, W11 and W17.
 - Woodland was surveyed at four locations in Search Area A. The patches in Search Area A had a range of zero to two CSM failures, generally failing on the amount of fallen trees/standing deadwood and medium levels of deer browsing.
- Dry heath:
 - Very small areas of H9c recorded in Search Area A.
 - The community H21a was found in just a few places in Search Area A.
 - Due to the small area covered by this habitat, Dry heath was surveyed at one location in Search Area A. No CSM failures were noted in Search Area A.

4.1.4 Peat Depth & Condition and Peat Landslide Hazard Risk Assessment

Peat depth probing and condition surveys were undertaken by SLR within Search Areas A and C. Search Area A was peat probed on a 100m x 100m grid (Figure 2). Search Area C was peat probed using a combination of 100m x 100m grid and 50m x 50m grid; the 50m x 50m grid was targeted towards an area north and west of Allt a' Ghleannain and along Allt Anavig where the habitats information suggested suitable locations for SAC woodland expansion and creation (Figure 2). The higher resolution probing was employed here to give confidence with regards the amount of potentially plantable ground. The peat condition information collected in these areas is used for the Peat Landslide and Hazard Risk Assessment (PLHRA).

No peat depth surveys were carried out in Search Area B given the steepness of the forested areas (and therefore the low likelihood of deep peat deposits) and that the target habitats for creation following conifer plantation removal in Search Area B does not include blanket bog.

The peat probing surveys in Search Area A indicate that much of the area is underlain by peat deposits greater than 0.5 m in depth, although there are some areas where deposits of peaty-soil or organo-mineral soils are present under 0.5 m in depth. These shallower layers tend to appear where there is an increase in slope. Much of the peat over 0.5 m in Search Area A is in the 0.5-1 m depth category, however there are several scattered small deeper pockets ranging from 2–5.3 m in depth.

In Search Area C, more of the area is underlain by peaty-soil or organo-mineral soils under 0.5 m in depth, although there are some areas of peat over 0.5 m in depth, particularly in the centre of Search Area C and in the west, to the west of Allt Anavig. In these areas the most common depth category is 0.5-1 m, however peat depths of up to 4 m were recorded (Figure 2).

The Peat Landslide Risk Assessment (SLR July 2023) concluded that, ‘the restoration works proposed for Compensation Area A do involve works which have potential to influence the hydrological regime in areas of peat which have been assessed as having potential risk of instability. However, by adopting current best practice and ongoing monitoring... the risks of the restoration works increasing the risk of instability are considered to be low’.

The PLHRA considered risks of forest to bog restoration works in Search Area C, however this activity is no longer being considered within this Search Area.

4.2 Compensation Area A

The criteria detailed in section 3 along with the above information has been used to identify an ecologically suitable compensation area within the initially identified Compensation Search Area (Figures 1 and 3).

Compensation Area A has been refined from the initial Search Area (also referred to as the ‘Refined Area’ below) to focus on the land to the south and east which is immediately adjacent to the FLS peatland restoration areas and where peat depth and NVC results indicate that there is strong hydrological and ecological connectedness. From review of desk based and survey information it was determined that blanket bog and wet heath would be the principal focus of the compensatory measures in Area A. As detailed further below, this is due to the extent of these existing habitats and potential for their expansion through the restoration of adjacent afforested land. The qualifying habitats of dry heath and western acidic oak woodland are also present, however, due to their minor and fragmented nature, and restrictions on expansion due to surrounding unsuitable habitat, management measures are not proposed to target their expansion. However, management measures for the enhancement and restoration of blanket bog and wet heath are considered in terms of their wider benefit on dry heath and woodland.

This section details:

- A summary of the existing baseline habitat areas and their condition within Compensation Area A.
- A consideration of the future baseline with restored habitat areas within Compensation Area A.
- A consideration of Compensation Area A against the criteria detailed in section 3.

4.2.1 Summary of Existing Baseline Habitats and Condition – Compensation Area A

Table 3 below provides the areas covered by the various vegetation communities presented by Phase 1 habitat type and Annex 1 qualifying habitat where relevant. The Technical Appendix for this Plan provides full details of survey results. For ease of reference Table 3 below presents the baseline habitat calculations for Compensation Area A from the Technical Appendix.

Table 3: Phase 1 and Annex 1 Habitat Types within Compensation Area A – Existing Baseline

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex <small>1Error! Bookmark not defined.</small>	NVC % of Refined Area	Phase 1 % of Refined Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	2.58	W4, W4c	1.131	Western acidic oak woodland	0.68	1.54
		W11, W11b, W11c	0.665		0.40	
		W17, W17a, W17b	0.651		0.39	
		SBT	0.130		0.08	
Coniferous Plantation Woodland (A1.2.2)	70.93	CP	70.934	-	17.48	42.36
Dense/Continuous Scrub (A2.1)	0.06	W23	0.056	-	0.01	0.03
Recently Felled Coniferous Woodland (A4.2)	57.13	CF, CF>M15, CF>M17, CF>M19a, CF>M25	57.133	-	14.08	34.12
Unimproved Acid Grassland (B1.1)	0.04	U4	0.029	-	0.02	0.03
		U6	0.013		0.01	
Marsh/Marshy Grassland (B5)	5.55	M25a	5.138	-	3.07	3.32
		M25b	0.199		0.13	
		Je	0.218		0.12	
Continuous Bracken (C1.1)	2.58	U20, U20a	2.562	-	1.53	1.54
		W25	0.017		0.01	
Tall Herb & Fern: Non-Ruderal (C3.2)	0.11	U16c	0.112	-	0.07	0.07

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1 <small>Error! Bookmark not defined.</small>	NVC % of Refined Area	Phase 1 % of Refined Area
Acid Dry Dwarf Shrub Heath (D1.1)	0.32	H10, H10a, H10c	0.208	Dry heath	0.12	0.19
		H21a	0.114		0.07	
Wet Dwarf Shrub Heath (D2)	7.79	M15a, M15b, M15c	7.792	Wet heathland with cross-leaved heath	4.65	4.65
Blanket Bog (E1.6.1)	12.64	M1	0.053	Blanket Bog	0.03	7.55
		M2	0.323		0.19	
		M17a, M17c	5.187		3.10	
		M19a	7.078		4.23	
Wet Modified Bog (E1.7)	5.88	M20a	0.318	Blanket Bog	0.19	3.51
		M25a*	5.564		3.32	
Acid/Neutral Flush (E2.1)	1.71	M6c	1.709	-	1.02	1.02
Bare Ground (J4)	0.12	BG	0.118	-	0.07	0.07
TOTAL	167.45					

The following provides a summary of the NVC surveys with further detail provided in the Technical Appendix and shown on Figures 3, 6 and 9:

- In order of abundance, the most dominant habitats and Annex 1 qualifying habitats (denoted by *) in this Area are:
 - Recently felled coniferous plantation (76.48%).
 - Blanket bog* and wet modified bog* (11.06%).
 - Marshy grassland (3.32%).
 - Wet heath* (4.65%).
 - Western acidic oak woodland* (1.54%).
 - Continuous bracken (1.54%).
 - Acid neutral flush (1.02%).
 - Dry heath* (0.19%).

4.2.2 Consideration of Future Baseline

Future baseline habitats after restoration are dependent on a number of abiotic factors (climate, altitude, macro/micro topography, soil type, peat depth etc), biotic factors (seed bank, adjacent habitats, invasives, herbivore impacts etc) and effective restoration management measures. Although fragmented, the existence of good quality areas of blanket bog and wet heath adjacent to the existing forestry, along with probing data confirming extensive peat presence and depths largely above 0.5 m, indicate that conditions are conducive to the restoration and expansion of these habitats. The restored area of each habitat is difficult to accurately predict, however, to provide a reasonable indication of this, it is likely that blanket bog will dominate in wetter areas of deeper peats (>0.5 m) and wet heath will dominate on shallower peats (<0.5 m)¹⁸. Peat depth interpolation estimates that 38.3% (49.09 ha) of forested habitat is on peat <0.5m and 61.7% (79.08 ha) on peat > 0.5m. These figures are used to estimate the future likely extent of wet heath and blanket bog below.

It is assumed that areas of other habitats remain the same.

Table 4: Phase 1 and Annex 1 Habitat Types within Compensation Area A – Future Baseline

Phase 1 Habitat	Habitat	Current Baseline (ha)	Change	Future Baseline (ha)
A1.1.1 + A3.1	Western acidic oak woodland	2.58	0	2.58
D1.1	Dry heaths	0.32	0	0.32
D2	Wet heaths	7.79	+49.09	56.88
E1.6.1 + E1.7	Blanket bog	18.52	+79.08	97.6
Total		29.21	128.17	157.38

4.2.3 Consideration against Compensation Criteria

Table 5 below considers the proposed compensation area against the criteria detailed in section 3 above.

Table 5: Consideration against Compensation Criteria – Compensation Area A

Criteria	Consideration
Targeted	<p>Blanket bog</p> <p>As explained in Table 1 above, direct habitat loss of blanket bog primarily has an effect on conservation objective 2a (extent of habitat on site) with secondary effects on conservation objectives 2b – 2g (section 2.2 above). The key focus of</p>

¹⁸ JNCC (2010) Handbook for Phase 1 Habitat Survey. A technique for environmental audit.

Criteria	Consideration
	<p>the compensation for this impact is therefore to address the loss of extent of habitat on site.</p> <p>Indirect habitat loss primarily effects conservation objectives 2c and 2d (structure and function of habitat and processes supporting habitat) with minor knock-on effects on conservation objectives 1, 2a, 2b and 2e (section 2.2 above). The key focus of the compensation for this impact is therefore to address the adverse effects on structure and function and processes supporting blanket bog habitat.</p> <p>The loss of extent of habitat on site is compensated by targeting the restoration and enhancement of a total of 116.43 ha of blanket bog habitat (Table 14) (largely within Compensation Areas A and B) and extending the SAC to include this area (compensation ratio considered below under the ‘Extent’ criterion).</p> <p>Table 8-5 and Table 8-8 of the Shadow HRA⁴ shows that the direct and indirect loss of the following blanket bog NVC communities are expected: M1, M2, M3, M17, M19, M17-M25 Intermediate, M19-M25 Intermediate, M20 and M25. The direct and indirect loss of the following wet heath NVC communities are expected: M15a, b, c, M15-M17 intermediate. Tables 3 and 4 above indicate that these habitat types will be restored.</p> <p>The conservation objectives of structure, function and supporting processes are compensated by the peatland within the Compensation Area being hydrologically and ecologically connected to the SAC. The peat depth surveys (Figure 2) within the Compensation Search Area and from the adjacent FLS peatland restoration projects demonstrate that Compensation Area A is hydrologically connected to the SAC. Figure 3 also illustrates that blanket bog and wet heath habitats are continuous with the SAC.</p> <p>Area A contributes 18.52 ha of existing blanket bog and 79.08 ha planned for restoration.</p> <p>Area B contributes 16.10 ha of existing blanket bog.</p> <p>Area C contributes 2.73 ha of existing blanket bog.</p> <p>A summary of these areas is provided in Table 14 below.</p> <p>Wet heath:</p> <p>Detailed consideration of wet heath is provided below under Compensation Area B (the principal reason for the selection of Area B). 7.79 ha of existing wet heath (M15a, M15b, M15) and 49.09 ha planned for restoration is found within Compensation Area A that will contribute to the compensation for this habitat type.</p> <p>Dry heath:</p> <p>Detailed consideration of dry heath is provided below under Compensation Area B (the main area for dry heath compensation). 0.32 ha of dry heath exists (H10a,</p>

Criteria	Consideration
	<p>b, c, H21, H21a) within Area A that will contribute to the compensation for this habitat type.</p> <p>Western acidic oak woodland:</p> <p>Detailed consideration of western acidic oak woodland is provided below under Compensation Area C (the main area for woodland compensation). 2.58 ha of western acidic oak woodland exist (W4, W4c, W11, W11b, W11c, W11, W11b, W11c, W17, W17a, W17b) within Area A that will contribute to the compensation for this habitat type.</p>
<p>Effective & Technically Feasible</p>	<p>Forest to bog restoration techniques form part of the Scottish Government funded Peatland Action Programme and are made available in the Peatland Action Technical Compendium https://www.nature.scot/doc/peatland-action-technical-compendium-restoration-8-forest-bog-restoration. The restoration work would follow this approved guidance to ensure it is effective and technically feasible.</p> <p>Section 5.1 provides further details on the specific forest to bog restoration methods required within Compensation Area A.</p>
<p>Extent</p>	<p>With 37.35 ha of existing (Areas A, B and C combined) and 79.08 ha targeted for restoration, a compensation ratio of 1:24.8 for blanket bog would be achieved in Compensation Area A (with smaller contributions from Areas B and C). See Table 14 below.</p> <p>As noted above and explained in Annex B, the appropriate compensation ratio (and therefore the extent of habitat required) is dependent on location, current condition and time to future favourable condition, and probability of success. These are considered in turn below to allow the suitability of the above noted compensation ratio to be determined.</p> <p>Location relative to the SAC: Compensation Area A is an optimal location which therefore reduces compensation ratio requirements - see 'Location' criteria below.</p> <p>Current condition, time until future favourable condition and Probability of Success: As detailed in sections 4.1.3 above and 4.3.3 and 4.5.3 below, the existing 18.52 ha in Area A, 16.1 ha in Area B and 2.73 ha in Area C of blanket bog habitat is generally in good condition (as indicated by CSM monitoring points in or adjacent to Areas) despite being surrounded by commercial plantation and recording some CSM failures. The quality of this existing habitat and the fact that it surrounds the restoration areas, is likely to help restoration to favourable condition status be achieved more quickly. The DEFRA biodiversity metric (2.0 and 3.1) provide estimates on the likely time for various habitats to achieve poor to good condition (see summary provided in Annex D of the Shadow HRA (MacArthur Green, September 2022)). For blanket bog, it is estimated that it would take 30+ years to achieve good condition.</p>

Criteria	Consideration
	<p>79.08 ha of blanket bog hosting commercial plantation or recently clear-felled (and is therefore in unfavourable condition) is proposed for restoration. Due to the largely checked nature of the remaining forestry, active blanket bog habitat still exists within and surrounding much of these areas. Furthermore, areas of felled plantation show signs of early recolonisation by blanket bog. This will allow restoration to progress more quickly, and strongly increases the certainty of success.</p> <p>The DEFRA biodiversity metric (2.0 and 3.1) provide estimates on the likely time for various habitats to achieve poor to good condition (see summary provided in Annex D of the Shadow HRA (MacArthur Green, September 2022)). For blanket bog, it is estimated that it would take 30 years to move from ‘moderate’ to ‘fairly good’ condition, 30+ years from ‘fairly poor’ to ‘fairly good’ and 30 years from ‘poor’ to ‘good’. Given that the existing blanket bog within the Compensation Areas is in good condition a timescale of zero years for restoration would be reasonable. However, restoring blanket bog from commercial plantation (poor condition) would be expected to take 30+ years to achieve good condition. So to achieve good condition across the entire compensation area may require 30+ years – and this timescale may be reduced given the existence of good quality bog within and surrounding the existing commercial plantation.</p> <p>Due to the current condition, time until favourable condition and risks associated with restoration, a compensation ratio at or close to 1:10 would however be appropriate. A total blanket compensation extent of 116.43 ha therefore results in a 1:24.8 compensation ratio.</p> <p>Given that a compensation ration of 1:10 is considered sufficient for blanket bog, it is considered that 69.51 ha is over and above what is required to compensate for the impact on this qualifying habitat.</p>
Location	<p>Compensation Area A is in close proximity to the location of the impact – most of the impact on blanket bog from the Proposed and Alternative Alignment occurs in the north-west of the SAC close to the compensation area.</p> <p>FLS’s peatland restoration areas Kyle Farm III, Choire Budhie and Kyle Farm I, lie in-between Compensation Area A and the SAC, and are hydrologically connected to both..</p> <p>As detailed in section 4, the location contains suitable conditions for compensatory measures, detailed in section 5, to be successful.</p>
Timing	<p>Considered under ‘Extent’ criteria above.</p>
Long-term Implementation	<p>Section 6 of this Plan includes details of ongoing monitoring measures to allow adaptive management measures and ensure the successful deliver of the compensatory measures.</p>

Compensation Area A (with more minor contributions from Compensation Areas B and C) would therefore deliver more than enough compensation for the loss of blanket bog habitat (a 1:24.8 compensation ratio leading to 69.57 ha of additional compensation).

Compensation Area A will also provide 0.32 ha of dry heath and 2.58 ha of western acidic oak woodland. These areas of habitat will benefit from the management measures proposed in section 5 below and are considered under sections 4.4.3 (Compensation Area B which includes the main dry heath compensation areas) and 4.6.3 (Compensation Area C which includes the main western acidic oak woodland compensation areas).

Wet heath is considered below under Compensation Area B.

4.3 Compensation Search Area B (target habitats: oak woodland, wet heath and dry heath)

4.3.1 Desk Study

Compensation Search Area B includes an area of 167 ha immediately adjacent to the SAC boundary in the east (Figure 1). The Search Area boundaries include some areas of habitat that are part of the SFA native woodland restoration project (natural regeneration along river valleys to the coast).

The Carbon and Peatland Map 2016 includes a small area of habitat to the west of Compensation Search Area B as Class 1 peatland (Figure 1).

The Habitat Map of Scotland (HabMos)¹⁹ (Image 1) details Compensation Search Area B as being comprised of wet heath, layered with areas of conifer plantation and other trees/woodland. Small areas of dry heath extend into the west of the Search Area boundary. A small area of birch woodland is also mapped along the Allt a' Choire Bhuidhe river. The National Soil Map of Scotland indicates the soils in Compensation Search Area B to be comprised of peat, peaty gleys, peaty podzols and some peaty rankers¹³.

The Kinloch Hills and Broadford LMP proposes the existing forested areas within Compensation Search Area B to be felled between 2020-2024, with some of these areas to be 'felled to recycle/mulching' areas (map 22 of LMP²⁰). Future restock includes low density mixed native broadleaves, Scots pine and oak (maps 6a and 6b of LMP¹⁵). Map 4.2 of the LMP¹⁵ details the soils of Compensation Search Area B to be comprised of surface-water gleys, podzols and rankers. The climate within the Search Area looks to be predominantly cool, wet and highly exposed (Map 4.3 of the LMP).

The Search Area potentially presents the opportunity for restoration of wet heath and dry heath in the 'fell to recycle/mulching' areas and through removal of brash and the historic ridge-furrow system. There may also be opportunities for restoration and enhancement of the oak woodland, building on those plans that are already in place.

There are no areas designated as Ancient Woodland within this Search Area.

The Proposed Alignment overlaps with the north of Compensation Area B, with the Alternative Alignment also passing through the area, and therefore detailed survey data for some of this Search Area is available from the EIA stage of the project. Phase 1 habitats recorded included predominantly coniferous plantation woodland, wet heath and dry heath, with pockets of broadleaved semi-natural woodland and wet modified bog (Figures V2-4.3 (3.15), V6-4.3 (3.14-3.15))

¹⁹ <https://www.nature.scot/landscapes-and-habitats/habitat-map-scotland>

²⁰ <https://forestryandland.gov.scot/images/corporate/design-plans/irs/kinloch-hills-broadford/Kinloch-Hills-Broadford-LMP-Maps-15-27.pdf>

of the EIA Report (September 2022), which also includes NVC data²¹). Peat depth surveys along the route of the Proposed and Alternative Alignment recorded depths between 0-0.5m (Figure V6-7.4 (Map 3) of the EIA Report¹⁶).

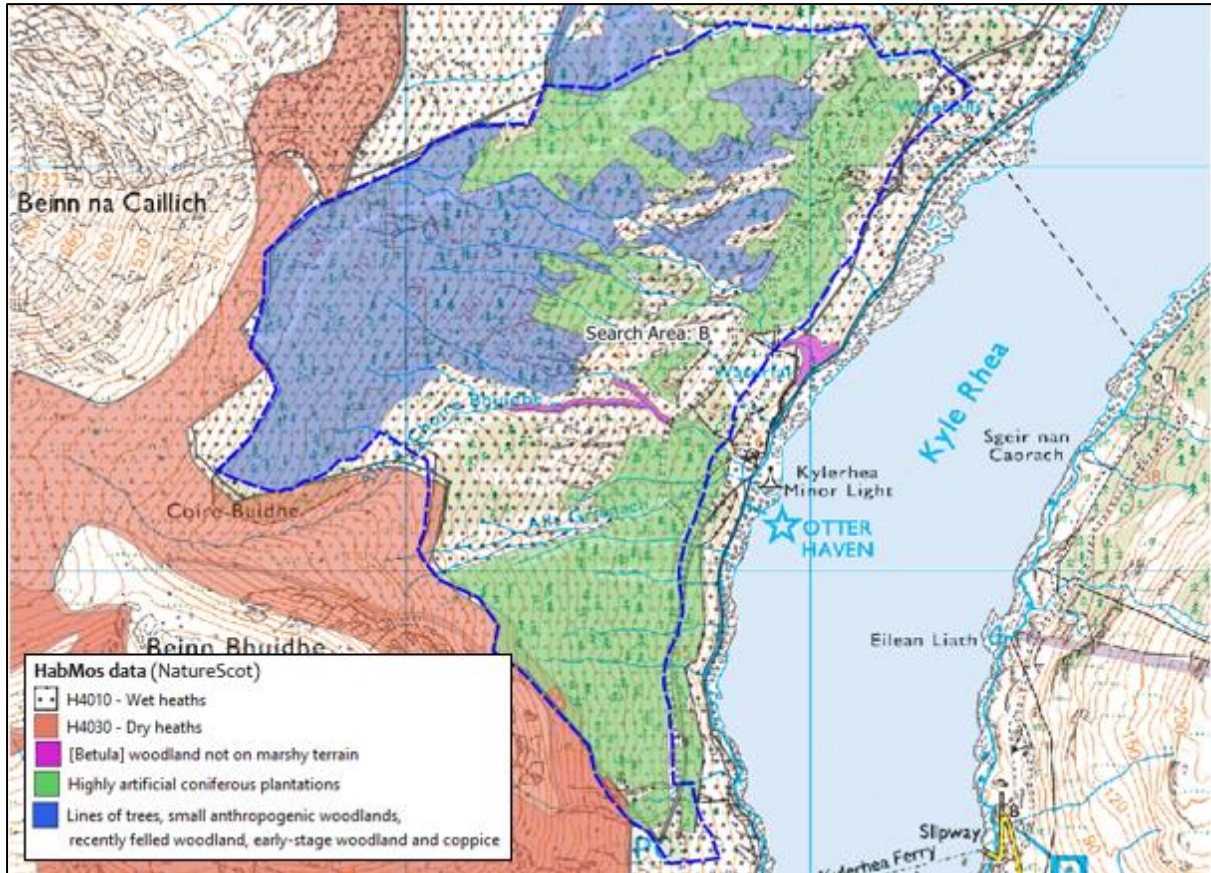


Image 1: HabMos data for Compensation Search Area B²².

4.3.2 Field survey

A walkover survey was undertaken at Compensation Search Area B between 23-27 January 2023 by Ben and Alison Averis to gather initial information on the habitats and any noteworthy species present. The following provides a high-level summary of the target notes recorded in Compensation Search Area B during the survey visit (detailed in the Technical Appendix and shown on Figure 7):

- This Search Area is a mix of open ground and conifer plantation on generally moderate to steep slopes. The conifer plantation density is variable, with very dense stands on the lower eastern ground, whereas on higher ground in the northwest the trees are often more thinly scattered and more open, allowing ground flora to persist.
- The existing open ground is predominately, especially in the more elevated and exposed western portion of this Search Area, M15 wet heath. Dry heath (H10/H21) is found scattered throughout in small parcels. Bracken (U20) is also common, particularly on lower slopes

²¹ SSEN Transmission (2022) Skye Reinforcement Project: EIA Report. Available at <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00003395&T=5> (Accessed 24/01/2023)

²² Contains NatureScot information licensed under the Open Government Licence v3.0. Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2023 all rights reserved. Ordnance Survey Licence number EL273236.

and in open ground between forestry coupes. The wet heath and bracken areas often form mosaics.

- This Search Area was noted as containing a few very small stands of other more species-rich vegetation, including M6, M10, M14, M37, M23b, M25c and W25.
- The open habitats also quite often have a scattering of young to medium aged regenerating broadleaved trees, mostly birch, willow and rowan but also occasional holly and alder; in some areas there is some evidence of deer browsing on these young trees. Self-seeded conifers including Sitka spruce, larch, lodgepole pine and on one occasion Douglas fir, were also noted in many open habitat areas.
- Mire communities (M17, M19 and M25) are present but relatively rare and of low total extent within this area.
- Some wet heath and mire areas seem to have been historically ploughed for forestry, but not planted, these areas remain in relatively good condition.
- There are scattered patches of broadleaved trees and broadleaved woodland within this Search Area, with the larger extents found in ravines/riparian areas, or along the edges of the main forest track. The more mature stands are within the respective ravines, there are areas of W4, W11 and W17 present.
- Small rhododendron in the region of 1-2 m tall are occasional throughout this Search Area. *Cotoneaster* sp. also recorded at one TN location.

4.3.3 National Vegetation Surveys and Common Standards Monitoring – March 2023

NVC Surveys and CSM surveys were completed during March 2023 by MacArthur Green staff and Ben and Alison Averis (Figures 4, 7 and 10). The Technical Appendix for this Plan provides full details of survey results. For ease of reference Table 6 below presents the baseline habitat calculations for Compensation Search Area B from the Technical Appendix.

Table 6: Phase 1 and Annex 1 Habitat Types within Compensation Search Area B

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1	NVC % of Search Area	Phase 1 % of Search Area
Broadleaved Semi-Natural Woodland (A1.1.1)	5.42	W4a, W4b	0.526	Western acidic oak woodland	0.31	3.24
		W7a	0.028	-	0.02	
		W11, W11b	1.344	Western acidic oak woodland	0.80	
		W17a, W17b, W17c	3.243		1.94	
		WLz	0.283		0.17	
Coniferous Plantation Woodland (A1.2.2)	65.71	CP	65.714	-	39.31	39.31
Dense/Continuous Scrub (A2.1)	0.05	W23	0.045	-	0.03	0.03
Unimproved Acid Grassland (B1.1)	1.61	U4a	1.100	-	0.66	0.96
		U5a, U5b	0.508	-	0.30	
Marsh/Marshy Grassland (B5)	5.71	M23b	0.112	-	0.07	3.41
		M25, M25a, M25c	5.121	-	3.06	
		MG10	0.013	-	0.01	
		Je	0.390	-	0.23	
		Ja	0.071	-	0.04	
Continuous Bracken (C1.1)	18.54	U20, U20a, U20b	17.205	-	10.29	11.09
		W25, W25a	1.338	-	0.80	
Tall Herb & Fern: Non-Ruderal (C3.2)	0.12	U16c	0.121	-	0.07	0.07
Acid Dry Dwarf Shrub Heath (D1.1)	6.68	H10a, H10b, H10c	5.441	Dry heath	3.25	3.99
		H21a	1.238		0.74	

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1	NVC % of Search Area	Phase 1 % of Search Area
Wet Dwarf Shrub Heath (D2)	45.41	M14	0.116	Wet heathland with cross-leaved heath	0.07	27.16
		M15a, M15b, M15c	45.290		27.09	
Montane Heath/Dwarf Herb (D4)	0.01	U10b	0.010	-	0.01	0.01
Blanket Bog (E1.6.1)	16.60	M17a, M17b	2.148	Blanket bog	1.28	9.93
		M19a	14.455		8.65	
Acid/Neutral Flush (E2.1)	0.37	M6c, M6d	0.330	-	0.20	0.22
		PC	0.038	-	0.02	
Basic Flush/Spring	0.07	M10a	0.042	-	0.03	0.04
		M37	0.032	-	0.02	
Standing Water (G1)	<0.01	SW	0.008	-	<0.01	<0.01
Bare Ground (J4)	0.88	BG	0.878	-	0.53	0.53
TOTAL	167.19					

The following provides a summary of the key results from the NVC and CSM surveys with further detail provided in the Technical Appendix and shown on Figures 4, 7 and 10:

- In order of abundance, the most dominant habitats and Annex 1 qualifying habitats (denoted by *) in this Search Area are:
 - Coniferous plantation woodland (39.31%).
 - Wet heath* (27.16%).
 - Continuous bracken (11.09%).
 - Blanket bog* (9.93%).
 - Dry heath* (3.99%)
 - Marshy grassland (3.41%).
 - Western acidic oak woodland* (3.24%).
- The character and condition of the Annex 1 qualifying habitats in this Compensation Area are summarised below:
 - Blanket bog:

- There are several larger patches of relatively undisturbed blanket bog in the west of Search Area B despite the moderately steep slopes which it is sited on, particularly on open ground to the east of Beinn na Caillich, and south of Allt a Choire Bhuidhe (Figure 4). Blanket bog is often present here in complex mosaics and transitional areas with other related vegetation types, such as wet heath and *Molinia caerulea* dominated marshy grassland.
 - M19 is the prevalent blanket bog type in Search Area B, which is unsurprising given the slopes present and the generally drier nature of M19 mire.
 - TNs in Search Area B indicate the presence of self-seeded conifers, some browsing of young trees, oceanic bryophytes and lichens, and the presence of some INNS. With respect to the INNS these are primarily *Rhododendron ponticum*, and one record of *Cotoneaster* sp. The extent and distribution of INNS in Search Area B is much less than the other Search Areas and is more concentrated to the very southern tip and near the forestry tracks.
 - Of the four CSM blanket bog survey locations in Search Area B, two locations recorded no CSM failures, with one CSM failure noted in the other two survey plots. Plot B01 failed on the number of indicator species (five present rather than the minimum six required to meet the target criteria) and plot B04 failed due to the presence of >1% cover of *Pinus contorta* invasion.
- Wet heath:
- Most extensive in the elevated open ground in the west of Search Area B, often in mosaics and transitional zones with blanket bog. Elsewhere in Search Area B wet heath is scattered in generally smaller patches in woodland openings and forest rides.
 - The majority of wet heath recorded is M15 (sub-communities a, b and c) with some smaller patches of M14 recorded in Search Area B.
 - Small patches of M15a are scattered widely on gently sloping peaty ground in Search Area B, typically among surrounding M15b or M15c.
 - M15b is widespread and common, mainly on gently sloping peaty ground.
 - M15c is widespread and common.
 - Of the four CSM wet heath survey locations in Search Area B, two locations recorded no CSM failures, with two (plot B08) and three (plot B07) CSM failures noted in the other two survey plots respectively. Plot B08 failed on absence of *Erica tetralix* and that dwarf shrubs make up more than 75% of the vegetation cover, plot B07 also failed on these criteria as well as indicating that more than 33% of the last complete growing season's shoots of dwarf-shrub species appeared browsed.
- Western acidic oak woodland:
- The largest and most contiguous patches of broadleaved woodland are riparian and associated with gullies in Search Area B, especially those along Allt Grianach and Allt a Choire Bhuidhe.

- The woodland communities present are generally mixtures of W4, W11 and W17, although there are some very small and scrub like areas of W7 and patches of a non-NVC woodland, coded 'WLz'.
 - The very small patches of W7a in Search Area B are small wet, flushed areas on very steep banks in a wooded ravine and have sheets of *Chrysosplenium oppositifolium* and can be seen as tiny patches of W7a.
 - The woodland CSM results in Search Area B were varied, with one CSM failure at plot B12, four failures at B15, five failures at B14 and seven failures at B13. These failures were due to a range of factors, including mainly, lack of understorey, lack of at least three age classes present (lacking young trees/sapling), lack of mature/old growth (most trees medium aged), lack of seedlings, lack of fallen trees/standing deadwood, and medium-heavy browsing. However, despite the number of CSM failures, the ravine or riparian woodlands in Search Area B are rich in indicators of local distinctiveness such as oceanic bryophytes and lichens (see Compensation Plan Technical Appendix).
- Dry heath:
 - Largest extent found in Search Area B. The majority of dry heath present falls within the H10 and H21 communities.
 - H10a occurs locally in Search Area B on steep, well-drained slopes.
 - H10b occurs locally in Search Area B on steep, well-drained slopes.
 - H10c occurs on some well-drained slopes in Search Area B and appears to be in places that are quite heavily grazed.
 - Many patches of H21a were recorded in Search Area B, mostly on north-facing slopes.
 - Of the three dry heath CSM survey locations in Search Area B there were zero (B11), one (B10) and two (B09) CSM failures respectively. Plot B10 failed on the abundance of bracken within the dry heath, B09 similarly failed on the abundance of bracken as well as lacking the younger growth stages of *Calluna vulgaris*.

4.3.4 Peat Depth and Condition and Peat Landslide Hazard Risk Assessment

See section 4.1.4.

4.4 Compensation Area B

The criteria detailed in section 3 along with the above information has been used to identify an ecologically suitable compensation area within the initially identified Search Area (Figures 1 and 4).

Compensation Search Area B included larger areas of western acidic oak woodland (eastern areas) compared to other search areas. However, additionality in management (a necessary requirement as advised by NatureScot) cannot be demonstrated in these areas as restoration work has been funded by SFA and are identified in the LMP as 'felled to recycle/mulching' areas and future restock includes low density mixed native broadleaves and oak. Compensation Area B has therefore focused on the wet heath and dry heath habitats in the west of the Search Area. As detailed further below, good extents of these habitats exist and have clear potential for expansion through the restoration of adjacent afforested land. The qualifying habitats of blanket bog and western acidic

oak woodland are also present, however, due to their minor and fragmented nature, and restrictions on expansion due to surrounding unsuitable habitat, management measures are not proposed below to target their expansion in Compensation Area B. However, given this area will form part of the SAC, relevant management measures for blanket bog and western acidic oak woodland will be implemented.

This section details:

- A summary of the existing baseline habitat areas within Compensation Area B.
- A consideration of the future baseline with restored habitat areas within Compensation Area B.
- A consideration of Compensation Area B against the criteria detailed in section 3.

4.4.1 Summary of Existing Baseline Habitats and Condition – Compensation Area B

Table 7 below provides the areas covered by the various vegetation communities presented by Phase 1 habitat type and Annex 1 qualifying habitat where relevant. The Technical Appendix for this Plan provides full details of survey results. For ease of reference Table 7 below presents the baseline habitat calculations for Compensation Area B from the Technical Appendix.

Table 7: Phase 1 and Annex 1 Habitat Types within Compensation Area B – Existing Baseline

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex <small>1Error! Bookmark not defined.</small>	NVC % of Refined Area	Phase 1 % of Refined Area
Broadleaved Semi-Natural Woodland (A1.1.1)	0.24	W7a	0.002	-	<0.01	0.30
		W17a, W17b	0.217	Western acidic oak woodland	0.27	
		WLz	0.020		0.02	
Coniferous Plantation Woodland (A1.2.2)	17.62	CP	17.623	-	21.92	21.92
Unimproved Acid Grassland (B1.1)	1.20	U4a	0.696	-	0.87	1.50
		U5a, U5b	0.508		0.63	
Marsh/Marshy Grassland (B5)	3.19	M25a	2.889	-	3.59	3.96
		Je	0.296		0.37	
Continuous Bracken (C1.1)	2.32	U20, U20a, U20b	2.324	-	2.89	2.89

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex <small>1 Error! Bookmark not defined.</small>	NVC % of Refined Area	Phase 1 % of Refined Area
Tall Herb & Fern: Non-Ruderal (C3.2)	0.12	U16c	0.121	-	0.15	0.15
Acid Dry Dwarf Shrub Heath (D1.1)	4.18	H10a, H10b, H10c	3.295	Dry heath	4.10	5.20
		H21a	0.883		1.10	
Wet Dwarf Shrub Heath (D2)	35.21	M14	0.022	Wet heathland with cross-leaved heath	0.03	43.80
		M15a, M15b, M15c	35.188		43.77	
Blanket Bog (E1.6.1)	16.10	M17a, M17b	2.148	Blanket Bog	17.36	20.13
		M19a	1.955		2.67	
Acid/Neutral Flush (E2.1)	0.06	M6c	0.060	-	0.07	0.07
Basic Flush (E2.2)	0.064	M10a	0.032	-	0.04	0.08
		M37	0.032		0.04	
Standing Water (G1)	0.01	SW	0.008	-	0.005	0.01
Bare Ground (J4)	0.07	BG	0.073	-	0.04	0.09
TOTAL	80.39					

The following provides a summary of the NVC surveys with further detail provided in the Technical Appendix and shown on Figures 4, 7 and 10:

- In order of abundance, the most dominant habitats and Annex 1 qualifying habitats (denoted by *) in this Search Area are:
 - Wet heath* (43.80%).
 - Coniferous plantation woodland (21.92%).
 - Blanket bog* (20.13%).
 - Dry heath* (5.20%)
 - Marshy grassland (3.96%).
 - Continuous bracken (2.89%).
 - Unimproved acid grassland (1.50%).

- Western acidic oak woodland* (0.30%).

4.4.2 Consideration of Future Baseline

Future baseline habitats after restoration are dependent on a number of abiotic factors (climate, altitude, macro/micro topography, soil type, peat depth etc), biotic factors (seed bank, adjacent habitats, invasives, herbivore impacts etc) and effective restoration management measures.

The open ground in the northern and western sections of Compensation Area B is dominated by wet heath, blanket bog, complex and transitional areas of wet heath/blanket bog mosaics and discrete areas of dry heath (Figure 4). There are areas of conifer plantation here too, though they tend to be sparser blocks, of smaller coupe sizes and irregularly shaped, some of the plantation is also relatively sparse, or checked (Figure 4). The blanket bog here is present on moderately steep slopes and is of the NVC type M19a *Calluna vulgaris* - *Eriophorum vaginatum* blanket mire, *Erica tetralix* sub-community. Areas of wet heath are predominately M15 *Trichophorum germanicum* - *Erica tetralix* wet heath. M19 is a drier bog vegetation with dense and tussocky *Calluna vulgaris*, *Eriophorum vaginatum* and extensive carpets of the mosses *Hylocomium splendens*, *Pleurozium schreberi*, *Hypnum jutlandicum* and some *Sphagnum capillifolium*. This bog vegetation is floristically very close to M15 wet heath, the distinction mainly down to the presence/absence of *Eriophorum vaginatum*. During the NVC surveys it was noted that many stands of the M19a in Area B contained abundant *Molinia caerulea*, but its species composition and structure were otherwise a good fit for M19 blanket bog; the abundance of *Molinia* likely highlighting how floristically close the bog here is to M15 wet heath (as *Molinia* is generally abundant to co-dominant in M15 locally) and indicating the presence of transitional areas. Furthermore, some M19a in Area B was found to contain sparse *Erica cinerea*, which is unusual in bog habitats because it typically prefers drier conditions; this again indicates the bog here is relatively dry.

Habitat restoration here through removal of conifer plantation areas is most likely to lead to the creation/restoration of wet heath habitats, more so than blanket bog. The sloping nature of the ground and associated shedding and throughflow of water, the disturbance of surface soils and hydrology associated with forest removal and habitat restoration, the extensiveness of surrounding wet heath, and the drier nature of the existing bog here (which is very similar to the wet heath present), all tends to suggest that the restorable target habitat here would be wet heath vegetation, even though some of this may establish on localised peat depths of over 0.5m in depth. In the longer-term some areas may transition to a drier blanket bog as per the current baseline conditions locally, but this is likely to be limited.

It is estimated that the area of wet heath that could be restored from afforested ground after implementation of compensatory measures would be approximately 17.62 ha.

Areas of bracken targeted for dry heath establishment after implementation of compensatory measures cover approximately 2.32 ha.

It is assumed that areas of other habitats remain the same.

Table 8: Phase 1 and Annex 1 Habitat Types within Compensation Area B – Future Baseline

Phase 1 Habitat	Habitat	Current Baseline (ha)	Change (ha)	Future Baseline (ha)
A1.1.1 + A3.1	Western acidic oak woodland	0.24	0	0.24
D1.1	Dry heaths	4.18	+ 2.32	6.5
D2	Wet heaths	35.21	+17.62	52.83
E1.6.1 + E1.7	Blanket bog	16.10	0	16.10
Total		55.73	+20.51	75.67

4.4.3 Consideration against Compensation Criteria

Table 9 below considers the proposed compensation area against the criteria detailed in section 3 above.

Table 9: Consideration against Compensation Criteria – Compensation Area B

Criteria	Consideration
Targeted	<p>Wet heath</p> <p>As explained in Table 1 above, direct habitat loss primarily has an effect on conservation objective 2a (extent of habitat on site) with secondary knock-on effects on conservation objectives 2b – 2g (section 2.2 above). The key focus of the compensation for this impact is therefore to address the loss of extent of habitat on site.</p> <p>Indirect habitat loss primarily effects conservation objective 2c and 2d (structure and function of habitat and processes supporting habitat) with secondary knock-on effects on conservation objectives 1, 2a, 2b and 2e (section 2.2 above). The key focus of the compensation of this impact is therefore to address the adverse effects on structure and function and processes supporting wet heath habitat.</p> <p>The extent of habitat on site is compensated by targeting the restoration and enhancement of a total of 110.67 ha largely within Areas A and B (Table 14) and extending the SAC to include this area (compensation ratio considered below under ‘Extent’ criteria).</p> <p>Table 8-5 and Table 8-8 of the Shadow HRA⁴ shows that the direct and indirect loss of the following wet heath NVC communities are expected: M15a, b, c, M15-M17 intermediate. Area B hosts good extents of existing M15a, b, c, in addition to some areas of M14 wet heath and M19 bog (see table 5 for blanket bog).</p>

Criteria	Consideration
	<p>The conservation objectives related to the structure, function and supporting processes are compensated by the peatland/organic soils within Compensation Area B being hydrologically and ecologically connected to the SAC. Figure 4 illustrates that blanket bog and wet heath habitats are continuous with the habitats within the adjacent SAC.</p> <p>Area A contributes 56.88 ha of wet heath (7.79 ha existing and 49.09 ha targeted for restoration).</p> <p>Area B contributes 52.8 ha of wet heath (35.21 ha existing and 17.62 ha targeted for restoration).</p> <p>Area C contributes 0.96 ha of existing wet heath.</p> <p>A summary of these areas is provided in Table 14 below.</p> <p>Blanket bog:</p> <p>Considered in Table 5 above for Compensation Area A.</p> <p>Dry heath:</p> <p>As explained in Table 1 above, direct habitat loss primarily effects conservation objective 2a (extent of habitat on site) with more minor secondary knock-on effects on conservation objectives 2b, 2c and 2e. The principle focus of the compensation for this impact is therefore to address the loss of extent of habitat on site.</p> <p>The extent of habitat on site is compensated by targeting the enhancement of 4.76 ha of existing habitat and the restoration of approximately 2.32 ha (Table 14) and extending the SAC to include these areas (compensation ratio considered below under ‘Extent’ criteria).</p> <p>Table 8-5 of the Shadow HRA⁴ shows that the loss of the following dry heath NVC communities are expected: H9, H10, H12, H21 and H10-M25. Compensation Area B hosts extents of existing H10a, H10b H10c and H21a communities. H9 is very species poor <i>Calluna vulgaris</i> dominated heath and compensation with H10 or H21 dry heath represents an increase in ecological value. H12 is effectively the same vegetation as H10 (the only key difference being the respective abundances of <i>Erica cinerea</i> (more common in H10) and <i>Vaccinium myrtillus</i> (more common in H12)), as such compensation of H12 with H10 is effectively like-for-like.</p> <p>Western acidic oak woodland:</p> <p>Detailed consideration of western acidic oak woodland is provided below under Compensation Area C (the main area for woodland compensation). 0.24 ha of western acidic oak woodland exist in Area B (W17a, W17b, WLz) within Area B that will contribute to the compensation for this habitat type.</p>
<p>Effective & Technically Feasible</p>	<p>Forest to bog restoration techniques form part of the Scottish Government funded Peatland Action Programme and are made available in the Peatland Action Technical Compendium https://www.nature.scot/doc/peatland-action-technical-</p>

Criteria	Consideration
	<p>compendium-restoration-8-forest-bog-restoration. The restoration work would follow this approved guidance to ensure it is effective and technically feasible.</p> <p>Some of these techniques would be appropriate for dry heath restoration (ridge, furrow reprofiling and removing as much wood debris from the site as possible).</p> <p>Section 5.1 provides further details on the specific forest to bog or dry heath restoration methods required within Compensation Area B.</p>
Extent	<p>With 43.96 ha of existing wet heath (Areas A, B and C combined) and 66.71 ha targeted for restoration, a compensation ratio of 1:10.7 would be achieved for wet heath.</p> <p>With 4.76 ha of existing dry heath (Areas A, B and C combined) and 2.89 ha targeted for restoration, a compensation ratio of 1:8.0 would be achieved for dry heath.</p> <p>As noted above and explained in Annex B, the appropriate compensation ratio (and therefore the extent of habitat required) is dependent on location, current condition and time to future favourable condition, and probability of success. These are considered in turn below to allow the suitability of the above noted compensation ratio to be determined.</p> <p>Location relative to the SAC: Compensation Area B is in an optimal location immediately adjacent to the SAC which therefore reduces compensation ratio requirements - see 'Location' criteria below.</p> <p>Current condition, time until future favourable condition and Probability of Success:</p> <p>Wet Heath:</p> <p>As detailed in section 4.1.3 above, the existing 7.79 ha of wet heath habitat in Compensation Area A is generally in good condition (as indicated by CSM monitoring points in or adjacent to Areas) despite being surrounded by commercial plantation and recording some CSM failures. The quality of this existing habitat and the fact that it surrounds the restoration areas, is likely to help restoration to favourable condition status be achieved more quickly.</p> <p>49.09 ha of wet heath hosting commercial plantation or recently clear-felled (and is therefore in unfavourable condition) is proposed for restoration in Compensation Area A. Due to the largely checked nature of the remaining forestry, wet heath habitat still exists within and surrounding much of these areas. Furthermore, areas of felled plantation show signs of early recolonisation by wet heath species. This will allow restoration to progress quickly, and strongly increases the certainty of success. Due to the current condition, time until favourable condition and risks associated with restoration, a compensation ratio at or close to 1:10 would however be appropriate.</p> <p>As detailed in section 4.3.3 above, the existing 35.21 ha of wet heath in Compensation Area B is in variable condition with the condition surveys recording</p>

Criteria	Consideration
	<p>some failures against condition criteria which were related to absence of <i>Erica tetralix</i>, dominance of dwarf shrubs and grazing.</p> <p>17.62 ha of wet heath hosting commercial plantation (and is therefore in unfavourable condition) is proposed for restoration in Area B. Due to the checked nature of the forestry, wet heath and drier blanket bog habitat still exists within and surrounding these areas. This will allow restoration to progress quickly, and strongly increases the probability of success.</p> <p>The DEFRA biodiversity metric (2.0 and 3.1) provide estimates on the likely time for various habitats to achieve poor to good condition (see summary provided in Annex D of the Shadow HRA (MacArthur Green, September 2022)). For upland heath, it is estimated that it would take 10 years to move from ‘moderate’ to ‘fairly good’ condition, 20 years from ‘fairly poor’ to ‘fairly good’ and 30 years from ‘poor’ to ‘good’. Given that the existing wet heath within the Compensation Areas is in moderate to good condition a time scale of 10 years would be reasonable. Restoring wet heath from commercial plantation (poor condition) would however be expected to take 30+ years to achieve good condition.</p> <p>Due to the current condition, time until favourable condition and risks associated with restoration, a compensation ratio at or close to 1:10 is considered appropriate.</p> <p>Given that a compensation ratio of 1:10 is considered sufficient for wet heath 6.86 ha is over and above what is required to compensate for the impact on this qualifying habitat.</p> <p>Dry Heath:</p> <p>With regards to dry heath, section 4.3.3 above explains that the existing 4.18 ha of dry heath in Area B is in variable condition with the condition surveys recording some failures against the criteria related to presence of bracken and lack of younger growth stages of <i>Calluna vulgaris</i> (with similar for dry heath recorded in Compensation Area C).</p> <p>The DEFRA biodiversity metric (2.0 and 3.1) provide estimates on the likely time for various habitats to achieve poor to good condition (see summary provided in Annex D of the Shadow HRA (MacArthur Green, September 2022)). For dry heath, the DEFRA metric suggests that it would take 10 years to achieve a condition change from ‘moderate’ to ‘fairly good’. It is considered that with the appropriate management to remove bracken encroachment and improve the age-structure that good condition can be achieved within 5-10 years for areas of existing dry heath subject to management. The restoration of 2.32 ha of dry heath to a diverse dry heath habitat by removal of bracken would be expected to take up to 20 or 25 years based on the expected growth rate and life cycle of <i>Calluna vulgaris</i>²³.</p>

²³ Gimingham CH (1975) Heathland ecology. Oliver and Boyd, Edinburgh

Criteria	Consideration
	<p>Taking the above habitat conditions, lower complexity of restoration and time to favourable condition into account a compensation ratio of 1:3 is considered appropriate.</p> <p>Given that a compensation ratio of 1:3 is considered sufficient for dry heath, it is considered that 4.44 ha is over and above what is required to compensate for the impact on this qualifying habitat.</p>
Location	<p>Compensation Area B is in close proximity to the location of the impact – most of the impact on wet heath and dry heath from the Proposed and Alternative Alignment occurs in the north of the SAC in close proximity to the compensation area.</p> <p>Figure 4 illustrates that the communities in the immediately adjacent SAC are dominated by wet heath, blanket bog and areas of dry heath – Area B is therefore directly ecologically connected to the SAC.</p> <p>As detailed in section 4, the location contains suitable conditions for compensatory measures, detailed in section 5, to be successful.</p>
Timing	Considered under ‘Extent’ criteria above.
Long-term Implementation	Section 6 of this Plan includes details of ongoing monitoring measures to allow adaptive management measures and ensure the successful deliver of the compensatory measures.

Compensation Area B (with contributions from Areas A and C) would therefore deliver appropriate compensation for the loss of wet heath habitat – with a total compensation ratio of 1:10.7 being achieved.

Compensation Area B (with contributions from Areas A and C) would also provide 7.08 ha of dry heath compensation – with a total compensation ratio of 1:8.0 being achieved.

0.24 ha of western acidic oak woodland exists within Compensation Area B and would benefit from the management measures proposed in section 5 below. This qualifying habitat is considered in section 4.6.3 below (Compensation Area C which includes the main western acidic oak woodland compensation areas).

4.5 Compensation Search Area C (target habitats: oak woodland, dry heath, blanket bog and wet heath)

4.5.1 Desk study

Compensation Search Area C includes an area of 120 ha immediately adjacent to the SAC boundary to the north (Figure 1). There is no overlap with the SFA native woodland restoration project in this Search Area.

Compensation Search Area C is bordered to the east by an area of Class 1 peatland as mapped on the Carbon and Peatland Map 2016, and to the south by the SAC where there is existing ancient

woodland (Figure 1). The Carbon and Peatland map is a high-level tool and from aerial imagery, it is anticipated that suitable peatland habitat extends beyond this area and into Compensation Search Area C. The National Soil Map of Scotland¹³ validates this as it shows the soils within Compensation Search Area C to be predominantly ‘peaty gleys with dystrophic semi-confined peat’, with some areas of ‘peaty gleyed podzols’ and ‘dystrophic blanket peat’.

The HabMos data shows areas of birch woodland on the fringes of Compensation Search Area C to the north, east, south and west, with oak woodland also present adjacent to the southern boundary (Image 2).

As can be seen in Figure 5, the Search Area has been previously wooded for commercial forestry and now appears as clear fell. The Kinloch Hills and Broadford LMP maps¹⁵ show that minimum intervention has been planned for this area but with restock of Sitka spruce and Japanese larch. Map 4.2 of the LMP¹⁵ details the soils of Compensation Search Area C to be comprised of peaty surface-water gleys and blanket bog. The climate within the Search Area looks to be predominantly warm, moist-wet and moderately-highly exposed (Map 4.3 of the LMP).

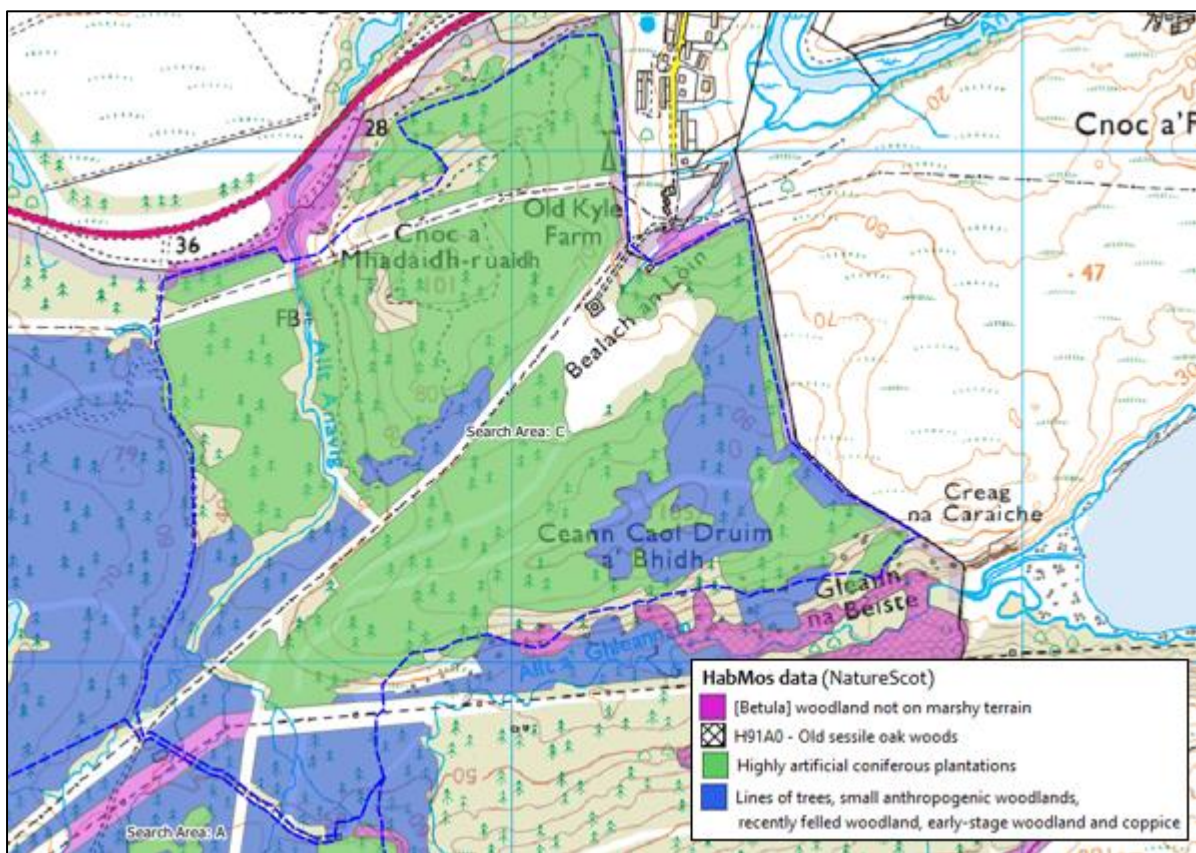


Image 2: HabMos data for Compensation Search Area C²².

4.5.2 Field survey

A walkover survey was undertaken at Compensation Search Area C between 23-27 January 2023 by Ben and Alison Averis to gather initial information on the habitats and any noteworthy species present. The following provides a high-level summary of the target notes recorded in Compensation Search Area C during the survey visit (detailed in the Compensation Plan Technical Appendix and shown on Figure 8):

- The Search Area is dominated by felled plantation habitat, some of which is naturally regenerating to open heath/mire habitats and woodland.
- Semi-natural open habitats are found throughout the former forestry clearings, rides and along the riparian zones of watercourses. There is a mix of communities present with the most common being wet heath (M15), blanket mire (M17, M25) and bracken (U20). More rarely there is dry heath (H10/H21), and other communities including M6 and U16.
- Some of the existing wet heath and mire areas remain relatively intact and have small bog pools, whereas others have been ploughed for planting but not subsequently planted. These areas are subject to encroachment from self-seeded conifers.
- There are several small scattered and relatively open patches of native broadleaved woodland within the Search Area, mostly W4 and W17, with some W11, of mostly young to medium age, although there are patches of mature trees also. These patches are mostly of birch, willows and rowan, but there is occasional holly. Self-seeded conifers are common in these patches of woodland, having invaded from the commercial plantation areas.
- Several of the more mature broadleaved trees present are rich in bryophytes and lichens.
- Deer grazing appears to be generally relatively light in this area.
- Invasive and non-native species were recorded commonly throughout this Search Area, the most abundant being rhododendron, *Gaultheria mucronata*, and *Gaultheria shallon*, also some records *Cotoneaster* sp.

4.5.3 National Vegetation Surveys and Common Standards Monitoring – March 2023

NVC Surveys and CSM surveys were completed during March 2023 by MacArthur Green staff and Ben and Alison Averis (Figures 5, 8 and 11). The Technical Appendix for this Plan provides full details of survey results. For ease of reference Table 10 below presents the baseline habitat calculations for Compensation Search Area C from the Technical Appendix.

Table 10: Phase 1 and Annex 1 Habitat Types within Compensation Search Area c

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1	NVC % of Search Area	Phase 1 % of Search Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	3.91	W4, W4b, W4c	0.858	Western acidic oak woodland	0.72	3.27
		W11, W11b, W11c	1.744		1.46	
		W17, W17a, W17b, W17c	1.212		1.01	
		SBT	0.101		0.08	
Coniferous Plantation Woodland (A1.2.2)	2.77	CP & YCP	2.773	-		2.77

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1	NVC % of Search Area	Phase 1 % of Search Area
Dense/Continuous Scrub (A2.1)	0.28	W23	0.281	-	0.23	0.23
Recently Felled Coniferous Woodland (A4.2)	71.96	CF, CF>M6c, CF>M15b, CF>M17, CF>M17a, CF>M25, CF>M25a*, CF>W4, CF>U4, CF>U20, CF>H21a, CF>Je	71.960	-	60.11	60.11
Unimproved Acid Grassland (B1.1)	0.15	U4	0.147	-	0.12	0.12
Marsh/Marshy Grassland (B5)	7.36	M25, M25a, M25b	7.115	-	5.94	6.15
		Je	0.247	-	0.21	
Continuous Bracken (C1.1)	7.09	U20, U20a, U20b	6.947	-	5.80	5.92
		W25, W25a	0.145	-	0.12	
Tall Herb & Fern: Non-Ruderal (C3.2)	0.34	U16c	0.343	-	0.29	0.29
Acid Dry Dwarf Shrub Heath (D1.1)	0.91	H9c	0.059	Dry heath	0.05	0.76
		H10a, H10c	0.434		0.36	
		H10-H12	0.222		0.19	
		H21a	0.193		0.16	
Wet Dwarf Shrub Heath (D2)	7.83	M15b, M15c	7.834	Wet heathland with cross-leaved heath	6.54	6.54
Blanket Bog (E1.6.1)	6.29	M17a, M17b	6.00	Blanket bog	5.01	5.26
		M19a	0.292		0.24	
Wet Modified Bog (E1.7)	9.09	M25a*	9.091	Blanket bog	7.59	7.59
Acid/Neutral Flush (E2.1)	0.74	M6c	0.742	-	0.62	0.62

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex 1	NVC % of Search Area	Phase 1 % of Search Area
Running Water (G2)	0.09	RW	0.092	-	0.08	0.08
Bare Ground (J4)	0.88	BG	0.880		0.74	0.74
TOTAL	119.71					

The following provides a summary of the key results with further detail provided in the Technical Appendix and shown on Figure 5, 8 and 11:

- In order of abundance, the most dominant habitats and Annex 1 qualifying habitats (denoted by *) in this Search Area are:
 - Recently felled coniferous plantation (62.88%).
 - Blanket bog* and wet modified bog* (12.85%).
 - Marshy grassland (6.15%).
 - Wet heath* (6.54%).
 - Continuous bracken (5.92%)
 - Western acidic oak woodland* (3.27%).
 - Dry heath* (0.76%).
- The character and condition of the Annex 1 qualifying habitats in this compensation area are summarised below:
 - Blanket bog:
 - Relatively small and often fragmented patches of bog persisting within plantation openings or along forest rides, peat forming species remain present here in the remnant areas of bog.
 - M17 remains relatively common here in the remaining patches of blanket bog, despite the various negative effects of commercial conifer plantation (with M17a considerably more dominant to M17b).
 - Target note information relating to Search Area C also indicates the presence of self-seeding conifers and that INNS are particularly commonplace, including abundant to frequent patches of *Rhododendron ponticum*, *Cotoneaster* sp., *Gaultheria mucronata* and *Gaultheria shallon*.
 - Of the three blanket bog CSM survey locations in Search Area C, two locations recorded no CSM failures, with one CSM failure noted in the other survey plot (C01). Plot C01 failed due to the abundance of self-seeded and encroaching *Pinus contorta* and *Picea sitchensis* as well as the presence of INNS (i.e., *Gaultheria mucronata* and *Rhododendron ponticum*).
 - Wet heath:

- Similar to Search Area A, Wet heath is also scattered in Search Area C within patches of open ground in woodland coupes and in existing and former forest rides. In some locations there is also an indication that some patches of clear-felled former plantation appear to be recovering and regenerating to a wet heath vegetation type. The majority of wet heath recorded is M15 (sub-communities a, b and c).
 - M15b is widespread and common, mainly on gently sloping peaty ground.
 - M15c is widespread and common.
 - See target note bullet point under blanket bog above.
 - In Search Area C only one of the five CSM plots surveyed had no CSM failures (plot Co4). The other plots had one (Co5), two (Co6 and Co7) and four (Co8) CSM failures respectively. Plots Co5, Co6 and Co7 generally failed certain criteria due to the abundance of self-seeded and encroaching *Pinus contorta* and *Picea sitchensis* as well as the presence of INNS. Plot Co8 also had additional CSM failures relating to browsing and ground disturbance and erosion.
- Western acidic oak woodland:
 - Broadleaved woodland in Search Area C is comprised of a number of very small patches, with a mix of riparian patches (e.g., along Allt Anavig) and small fragmentary stands persisting in more open ground since conifer plantation felling, there are also patches of naturally regenerating woodland and scattered broadleaved trees within Search Area C.
 - The woodland communities present are generally mixtures of W4, W11 and W17.
 - The two woodland CSM plots in Search Area C had six CSM failures each (failures were due to a range of factors, including mainly, lack of understorey, lack of at least three age classes present (lacking young trees/sapling), lack of mature/old growth (most trees medium aged), lack of seedings, lack of fallen trees/standing deadwood, and medium-heavy browsing); these patches of woodland also included the indicators of local distinctiveness.
 - Dry heath:
 - Very small areas of H10-H12 intermediate heath recorded once in Search Area C.
 - The community H21a was found in just a few places in Search Area C.
 - In Search Area C the two dry heath CSM survey plots had one and two CSM failures. Plot C10 failed on the abundance of INNS present, whereas plot Co9 failed on abundance of bracken and scattered trees and scrub.

4.5.4 Peat Depth and Condition and Peat Landslide Hazard Risk Assessment

See section 4.1.4.

4.6 Compensation Area C

The criteria detailed in section 3 along with the above information has been used to identify an ecologically suitable compensation area within the initially identified Search Area (Figures 1 and 5).

From review of desk based and survey information it was determined that the focus of compensatory measures in Search Area C could be western acidic oak woodland, dry heath, blanket bog and wet heath. However, due to the blanket bog, wet heath and dry heath compensation requirements being met by Compensation Areas A and B (as detailed above), the principal focus of Compensation Area C is western acidic oak woodland compensation. The initial Compensation Search Area has therefore been reduced to focus on suitable habitats immediately adjacent to the SAC for western acidic oak woodland enhancement and establishment (as detailed in Table 13 below).

Although minor in their occurrence, the qualifying habitats of blanket bog (modified), wet heath and dry heath are also present, however, due to their minor and fragmented nature, and restrictions on expansion due to surrounding unsuitable habitat, management measures are not proposed below to target their expansion in Area C. However, given this area will form part of the SAC, relevant management measures for blanket bog, wet heath and dry heath will be implemented.

This section details:

- A summary of the existing baseline habitat areas within Compensation Area C.
- A consideration of the future baseline with restored habitat areas within Compensation Area C.
- A consideration of Compensation Area C against the criteria detailed in section 3.

4.6.1 Summary of Existing Baseline Habitats and Condition – Compensation Area C

Table 11 below provides the areas covered by the various vegetation communities presented by Phase 1 habitat type and Annex 1 qualifying habitat where relevant. The Technical Appendix for this Plan provides full details of survey results. For ease of reference Table 11 below presents the baseline habitat calculations for Compensation Search Area C from the Technical Appendix.

Table 11: Phase 1 and Annex 1 Habitat Types within Compensation Area C – Existing Baseline

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex <small>1Error! Bookmark not defined.</small>	NVC % of Refined Area	Phase 1 % of Refined Area
Broadleaved Semi-Natural Woodland (A1.1.1) & Scattered Broadleaved Tree (A3.1)	1.74	W4, W4c	0.314	Western acidic oak woodland	0.98	5.42
		W11, W11b, W11c	0.971		3.02	
		W17, W17b, W17c	0.360		1.12	
		SBT	0.097		0.30	

Phase 1 Habitat	Phase 1 Area (ha)	Vegetation Community	NVC Area (ha)	Corresponding Annex <small>1 Error! Bookmark not defined.</small>	NVC % of Refined Area	Phase 1 % of Refined Area
Coniferous Plantation Woodland (A1.2.2)	1.34	CP	1.336	-	4.16	4.16
Recently Felled Coniferous Woodland (A4.2)	17.87	CF, CF>W4, CF>M6c, CF>M15b, CF>M25, CF>M25a, CF>U4, CF>U20, CF>Je	17.873	-	55.61	55.61
Marsh/Marshy Grassland (B5)	3.53	M25, M25a	3.526	-	10.97	10.97
Continuous Bracken (C1.1)	3.10	U20, U20b	3.104	-	9.66	9.66
Tall Herb & Fern: Non-Ruderal (C3.2)	0.04	U16c	0.038	-		0.12
Acid Dry Dwarf Shrub Heath (D1.1)	0.26	H10a	0.037	Dry heath	0.12	0.81
		H10-H12	0.222		0.69	
Wet Dwarf Shrub Heath (D2)	0.96	M15a, M15b, M15c	0.960	Wet heathland with cross-leaved heath	2.99	2.99
Wet Modified Bog (E1.7)	2.73	M25a*	2.727	Blanket Bog	8.49	8.49
Acid/Neutral Flush (E2.1)	0.57	M6c	0.566	-	1.76	1.76
Bare Ground (J4)	0.01	BG	0.005	-	0.02	0.02
TOTAL	32.14					

The following provides a summary of the results with further detail provided in the Technical Appendix and shown on Figures 5, 8 and 11:

- In order of abundance, the most dominant habitats and Annex 1 qualifying habitats (denoted by *) in this Search Area are:
 - Coniferous plantation and Recently felled coniferous plantation (59.77%).
 - Wet modified bog* (8.49%).

- Marshy grassland (10.97%).
- Wet heath* (2.99%).
- Continuous bracken (9.66%)
- Western acidic oak woodland* (5.42%).
- Dry heath* (0.81%).

4.6.2 Consideration of Future Baseline

Future baseline habitats after restoration are dependent on a number of abiotic factors (climate, altitude, macro/micro topography, soil type, peat depth etc), biotic factors (seed bank, adjacent habitats, invasives, herbivore impacts etc) and effective restoration management measures.

Western acidic oak woodland within Area C occurs in a number of small, fragmented patches of W4, W11 and W17 surrounded by suitable habitat for western acidic woodland restoration and expansion. Furthermore, these are immediately adjacent to existing SAC woodland as indicated by NVC data for the SAC (Figure 5) which allows connectivity to existing SAC habitat.

Habitats suitable for native woodland expansion are considered to be bracken and areas of conifer plantation and clear-fell that are underlain by less than 0.5 m depth of peat and are considered to be regenerating to either bracken, acid grassland, or species poor *Molinia* marshy grassland. Using this criteria, 3.10 ha of bracken and 12.82 ha of previously afforested land would become western acidic oak woodland.

It is assumed that areas of other habitats remain the same.

Table 12: Phase 1 and Annex 1 Habitat Types within Compensation Area C – Future Baseline

Phase 1 Habitat	Habitat	Current Baseline (ha)	Change (ha)	Future Baseline (ha)
A1.1.1 + A3.1	Western acidic oak woodland	1.74	+ 15.92 (3.10 + 12.82)	17.66
D1.1	Dry heaths	0.26	0	0.26
D2	Wet heaths	0.96	0	0.96
E1.6.1 + E1.7	Blanket bog	2.73	0	2.73
Total		5.69	+15.92	21.61

4.6.3 Consideration against Compensation Criteria

Table 13 below considers the proposed compensation area against the criteria detailed in section 3 above.

Table 13: Consideration against Compensation Criteria – Compensation Area C

Criteria	Consideration
<p>Targeted</p>	<p>Western acidic oak woodland:</p> <p>As explained in Table 1 above, direct habitat loss during the construction and operational period primarily effects conservation objective 2a (extent of habitat on site) with more minor secondary knock-on effects on conservation objectives 2b-2g. The principle focus of the compensation for this impact is therefore to address the loss of extent of habitat on site.</p> <p>The extent of habitat on site is compensated by targeting the restoration of an ecologically coherent area of approximately 17.66 ha of western acidic oak woodland (Table 8 and 14) and extending the SAC to include this area (compensation ratio considered below under ‘Extent’ criteria).</p> <p>Table 8-5 of the Shadow HRA⁴ shows that the loss of the following western acidic NVC communities is expected W4, W7, W11 and W17. Compensation Area C hosts extents of existing W4, W11 and W17 and is immediately bordered by W4, W11 and W17 woodland within the SAC.</p> <p>Compensation Areas A and B contribute 2.58 and 0.24 ha respectively.</p> <p>Blanket bog:</p> <p>Detailed consideration of blanket bog is provided above under Compensation Area A (the main area for blanket bog). 2.73 ha of (modified) blanket bog (M25a*) within Area C will contribute to the compensation for this habitat type.</p> <p>Wet heath:</p> <p>Detailed consideration of wet heath is provided above under Compensation Area B (the main area for wet heath compensation). 0.96 ha of wet heath (M15a, b, c) within Area C will contribute to the compensation for this habitat type.</p> <p>Dry heath:</p> <p>Detailed consideration of dry heath is provided above under Compensation Area B (the main area for dry heath compensation). 0.26 ha of dry heath exists (H10a and H10-12) within Area C that will contribute to the compensation for this habitat type.</p>
<p>Effective & Technically Feasible</p>	<p>Well established and approved methods exist for woodland establishment techniques, removal of exotics and deer control which are detailed further below in section 5.3²⁴.</p>
<p>Extent</p>	<p>With 4.56 ha of existing western acidic oak woodland (Compensation Areas A, B, C combined) and 15.92 ha targeted for restoration, a compensation ratio of 1:23.9 would be achieved for western acidic oak woodland.</p> <p>As noted above and explained in Annex B, the appropriate compensation ratio (and therefore the extent of habitat required) is dependent on location, current condition and time to future favourable condition, and probability of success.</p>

²⁴ For example: Thompson, R. Humphrey, J. Harmer, R. and Ferris, R. (2003) Restoration of Native Woodlands on Ancient Woodland Sites. Practice Guide. Forestry Commission (now Forestry and Land Scotland).

Criteria	Consideration
	<p>These are considered in turn below to allow the suitability of the above noted compensation ratio to be determined.</p> <p>Location relative to the SAC: Area C is in an optimal location which therefore reduces compensation ratio requirements - see 'Location' criteria below.</p> <p>Current condition, time until future favourable condition and Probability of Success: As detailed in section 4.5.3 above, the existing 4.56 ha of western acidic oak woodland habitat in the proposed Compensation Areas is in poor condition due to its fragmented nature and a number of failures against condition criteria. This was generally found for woodland within Compensation Areas A and B also (4.1.3 and 4.3.3). The compensation ratio for this habitat would be higher due to this.</p> <p>15.92 ha of non-qualifying habitats is proposed for woodland establishment in Area C. The presence of existing islands of woodland in Compensation Area C, existing areas of regeneration, and the woodland immediately adjacent in the SAC (Figure 5), will allow restoration to progress more quickly through increasing the availability of woodland flora seed sources. This will help to reduce the time for the western acidic oak woodland to fully establish in this area. Due to the current condition, time until favourable condition and risks associated with restoration, a compensation ratio at or close to 1:10 would be appropriate.</p> <p>The DEFRA biodiversity metric (2.0 and 3.1) provide estimates on the likely time for various habitats to achieve poor to good condition (see summary provided in Annex D of the Shadow HRA (MacArthur Green, September 2022)). For upland oak woodland, it is estimated that it would take 30+ years to achieve good condition.</p> <p>Given that a compensation ratio of 1:10 is considered sufficient for western acidic oak woodland, it is considered that 11.92 ha is over and above what is required to compensate for the impact on this qualifying habitat.</p>
Location	<p>Compensation Area C is in close proximity to the location of the impact – most of the impact on western acidic oak woodland from the Proposed and Alternative Alignment occurs in the north of the SAC close to the compensation area.</p> <p>As detailed in section 4.5, the location contains suitable conditions for compensatory measures detailed in section 5 to be successful.</p>
Timing	<p>Considered under 'Extent' criteria above.</p>
Long-term Implementation	<p>Section 6 of this Plan includes details of ongoing monitoring measures to allow adaptive management measures and ensure the successful deliver of the compensatory measures.</p>

Compensation Area C (with minor contributions from Areas A and B) would therefore deliver appropriate compensation for the loss of western acidic oak woodland -- with a total compensation ratio of 1:23.9 being achieved.

2.73 ha of blanket bog, 0.96 ha of wet heath and 0.26 ha of dry heath exists within Compensation Area C and would benefit from the management measures proposed in section 5 below. These qualifying habitats are considered in sections 4.2.3 and 4.4.3 above (Compensation Areas A and B which include the main blanket bog, wet heath and dry heath compensation areas).

4.7 Summary of Compensation for Qualifying Habitats

Table 14 below provides a summary of the extent of compensation within each Compensation Area per qualifying habitat.

In selecting appropriate compensation areas, habitat extents over and above that required to compensate the predicted impacts will be restored and/or created thereby delivering further and significant ecological benefits. DEFRA 2021 guidance²⁵ notes that, 'You must be confident that the measures will fully compensate for the negative effects of the proposal. You do not need to consider more compensation than is needed'. It is intended that this 'additional' compensation will be used by SSEN Transmission to support biodiversity enhancement in relation to the Skye Reinforcement Project, or other projects in their portfolio.

Table 14: Compensation Areas per Qualifying Habitat

Qualifying Habitat	Area A (ha)		Area B (ha)		Area C (ha)		Total	Comp. Ratio	Required Comp. Ratio	Area (ha) of 'Additional' Compensation
	Existing	Creation	Existing	Creation	Existing	Creation				
Western acidic oak woodland	2.58	0	0.24	0	1.74	15.92	20.48	1:23.9	1:10	11.92
Dry heath	0.32	0	4.18	2.32	0.26	0	7.08	1:8.0	1:3	4.44
Blanket bog	18.52	79.08	16.1	0	2.73	0	116.43	1:24.8	1:10	69.51
Wet heath	7.79	49.09	35.21	17.62	0.96	0	110.67	1:10.7	1:10	6.86
Total	29.21	128.17	55.73	19.94	5.69	15.92	254.66			92.73

²⁵ Natural England, Welsh Government and Natural Resources Wales (24 February 2021) [Habitats regulations assessments: protecting a European site - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/habitats-regulations-assessments-protecting-a-european-site). Commissioned by DEFRA.

5 AIMS, OBJECTIVES AND MANAGEMENT PRESCRIPTIONS

The Aims define the general Compensation Plan goals, and the related Objectives further define the Aims into quantifiable targets. The Prescriptions detail the management works to be implemented to achieve these Aims and Objectives. Annex A provides an indicative timetable for the implementation of the various Prescriptions.

5.1 Aim 1: To restore and enhance blanket bog and wet heath habitats to Favourable condition²⁶.

Objective 1.1 Restore and create 79.08 ha of blanket bog and 66.71 ha of wet heath within Compensation Areas A and B to favourable condition status (zero CSM failures). Restoration of NVC communities with a focus on a mosaic of M15 wet heath and M17/M19 blanket bog.

Objective 1.2 Enhance 37.35 ha of existing blanket bog and 43.96 ha of existing wet heath within Compensation Areas A, B and C to favourable condition status (zero CSM failures).

Prescription 1.1 Remove conifers to promote recovery of the bog and wet heath habitat (objective 1.1).

A number of methods are available to achieve forest to bog restoration and these are detailed within the NatureScot Peatland Compendium²⁷ and Forestry and Land Scotland's Peatland Restoration Operational Specifications. NatureScot's Peatland Compendium advises that, '*The type of restoration technique required will depend on site topography, peat type, hydrology, peat depth, peat slide risk, as well as the tree species present, their age, Yield class, rooting depth, alongside the ability to extract timber and harvesting technique used/considered, and the presence or absence of peat forming vegetation*'. Available information on these items for Compensation Area A and B is provided above in section 4.1, 4.2, 4.3 and 4.4. Based on this information it is likely that a mix of the under-noted techniques will be suitable in Compensation Area A and B. The specific areas appropriate for each treatment would be confirmed with FLS and a specialist site contractor in advance of restoration works.

Harvesting/tree removal:

In general, trees and associated woody debris should be removed from the compensation area where possible. If removal is not possible, trees should be chipped/mulched on site using an appropriate technique and in

²⁶ According to Common Standards Monitoring guidance, JNCC (2009)¹⁰, '*Favourable condition means the condition objectives for that feature are being met, it is in the state we want it.*'

²⁷<https://www.nature.scot/doc/peatland-action-technical-compendium-restoration-8-forest-bog-restoration>

accordance with SEPA guidance (2014)²⁸ and FLS's operational specifications. The following mix of techniques are likely to be suitable:

- **Mechanical Felling:** To be used on harvestable crops which may be present to the south-west of the compensation area.
- **Mechanical Tree Shearing:** The forestry road immediately to the north-west of this area should allow removal of trees and wood debris to the roadside.
- **Mechanical Fibre Relocation:** This may be used to an extent to allow tree removal from the site and to create access for bog restoration machinery.
- **Fibre Recovery:** Where fibre is not required to create access and can be removed to the forestry track to the north-west, then this method should be adopted to minimise woody material on site.
- **Mechanical mulching:** This should be adopted where the above techniques are not technically feasible.

Peatland Re-wetting Methods

As recommended in the Peatland Technical Compendium, it is often beneficial to finalise restoration plans after tree removal operations are completed and the condition of the site with respect to drainage, slopes, flush/wetter areas can be assessed. This will allow re-wetting methods to be optimised for the site and undertaken efficiently whilst minimising/avoiding erosion impacts. In general, methods should aim to re-instate the natural topography of the peatland (remove ridge and furrow systems) whilst minimising disturbance to the peatland. The following mix of methods are likely to be suitable for the compensation area:

- **Stump / root plate mulching:** Could be used as an alternative to ground smoothing to remove ridge and furrow system if there are concerns over peat disturbance. This may be more appropriate in shallower peats associated with wet-heath habitats.
- **Ground smoothing:** Is likely to be one of the main techniques used in Compensation Area A in deeper peats. It involves a mix of stump flipping, furrow reprofiling and cross-tracking.
- **Ridge-Furrow Reprofiling:** This technique is likely to be most suitable in wet heath areas where peats are fairly shallow (less than 0.5 m). It involves an excavator pushing ridges into furrows and cross-tracking them to reinstate the original topography of the habitat and its associated hydrological regime.

²⁸ SEPA (2014). Use of Trees Cleared to Facilitate Development on Afforested Land. Land Use Planning System SEPA Guidance Note LUPS-GU27, Version 1, 09 April 2014. Joint guidance from SEPA, SNH and FCS.

- **Furrow blocking:** This can be used to compliment other techniques and is most suitable when the prominence of the ridge and furrow system is not too significant.
- **Drain blocking:** Using peat dams, and pile dams at the end of drains, following the FLS specification should be used in conjunction with the above techniques. Ground smoothing can often infill small drains but larger drains are likely to remain which require damming.
- **Hagg reprofiling:** No peat hagggs have been observed on site, however if any are encountered the technique detailed within the Peatland Compendium and FLS specification should be adopted.

Prescription 1.2 Remove self-seeded conifers from areas of existing intact target habitat types in a manner which minimises impact on the existing vegetation and peat/soils (e.g., via hand/chainsaw if trees are small enough, or with low ground pressure machinery). Monitoring will inform the need for additional removal after the first programme of works (objective 1.2).

Prescription 1.3 Remove regenerating conifers as required from the restoration site (objective 1.1). NatureScot’s Peatland Compendium advises that, *‘the most effective time to remove any subsequent tree regeneration is to remove it within 7 years of re-wetting. The tree regeneration will have declared itself, but also still be small enough to deal with. Dense tree regeneration would normally indicate that the site was not re-wetted sufficiently, perhaps because the peat was cracked below the furrows, or because there is close proximity of seed sources through remaining plantations. The need to carry out removal of dense conifer regen on forest-to-bog sites can be avoided (or reduced) by re-wetting the site as soon after tree felling as possible’*. Ongoing monitoring will inform the need for follow up works.

Prescription 1.4 Manage deer densities as required to achieve Objective 1.1 and 1.2. Deer densities are considered to be high if they exceed a density of ~15 deer/km²²⁹. However, in general impacts can be site specific with densities generally accepted to be a poor indicator of damage. Long-term management should be based on assessment both of actual impacts and apparent density of deer³⁰.

Prescription 1.5 The following activities would be prohibited within the compensation area for blanket bog and wet heath (to help achieve objectives 1.1 and 1.2):

- clearing out of existing ditches;
- application of any insecticides, fungicides or molluscicides;
- application of lime or any other substance to alter the soil acidity;

²⁹ Cummins, R., Donnelly, D., Nolan, A., Towers, W., Chapman, S., Grieve, I. and Birnie, R.V. (2011). Peat erosion and the management of peatland habitats. *Scottish Natural Heritage Commissioned Report No. 410*

³⁰ Putman, R., Longbein, J., Green, P., Watson, P (2011) Identifying threshold densities for wild deer in the UK above which negative impacts can occur. *Mammal Review*.

- cutting or topping of vegetation except to control injurious weed species or to improve the biodiversity of the habitat;
- burning of vegetation or other materials;
- use of roll or chain-harrow;
- planting trees;
- carrying out any earth moving activities;
- use of off-road vehicle activities with the exception of use of low scale agricultural or deer stalking/removal vehicle movements (quad bike and land rover)³¹;
- construction of tracks, roads, yards, hardstandings or any new structures (not associated with the Proposed Development or the installation of the overhead line); and
- storage of materials or machinery.

5.2 **Aim 2: To restore and enhance dry heath habitat to Favourable condition.**

- Objective 2.1 Restore and create 2.32 ha of dry heath in Compensation Area B to favourable condition (zero CSM failures).
- Objective 2.2 Enhance 4.76 ha of existing dry heath in Compensation Areas A, B and C to favourable condition (zero CSM failures).
- Prescription 2.1 Remove conifers using appropriate harvesting techniques (Prescriptions 1.1 above) and remove rhododendrons³² and other exotics/invasives using approved techniques (objective 2.1).
- Prescription 2.2 Remove legacy ridge and furrow from previous commercial plantation using the ridge-furrow re-profiling technique as described under Prescription 1.1 above (objective 2.1).
- Prescription 2.3 Remove and manage bracken, with ongoing control where this is encroaching on dry heath restoration/creation areas³³ (objective 2.2).
- Prescription 2.4 Donor turves from the construction works and/or from adjacent habitat will be used to increase the speed of the recolonisation of dry heath vegetation in areas where vegetation has been lost/diminished significantly under closed canopy commercial plantation or dense bracken. If donor turves are not available, then a recognised moorland /heather seed mix should be added to

³¹ The existing OHL passes through Compensation Search Areas A and C, the Proposed Alignment passes through Compensation Search Area A and the Alternative Alignment passes through Compensation Search Areas A and B; therefore, there may be a need for SSEN to access the land for emergency maintenance requirements. Operational maintenance would use tracks that are to be retained following construction.

³² [Managing and Controlling Invasive Rhododendron \(forestry.gov.scot\)](https://www.forestry.gov.scot/managing-and-controlling-invasive-rhododendron)

³³ [Bracken Control - A Guide to Best Practice | NatureScot \(webarchive.org.uk\)](https://www.nature.scot/bracken-control-a-guide-to-best-practice)

ensure there is adequate viable seed immediately available for germination (objectives 2.1 and 2.2).

Prescription 2.5 Control deer browsing to ensure that dwarf shrub species are successfully restoring. Plants should be well rooted before deer control is relaxed (this may take around 5 years in this location) (objectives 2.1 and 2.2).

Prescription 2.6 Prohibited activities noted in Prescription 1.6 above (objectives 2.1 and 2.2).

5.3 **Aim 3: Restore, create and enhance western acidic oak woodland habitat to favourable condition.**

Objective 3.1 Restore, create and enhance 20.48 ha of western acidic oak woodland to favourable condition (zero CSM failures). Restoration of NVC communities to target a mosaic of W4/W11/W17 dependent on prevailing conditions, with W7 if conditions allow. W11/W17 habitat will be a priority.

Prescription 3.1 Develop a detailed woodland creation and expansion plan (including ongoing establishment) in consultation with FLS and NatureScot. Planting plan likely to include a programme of regeneration and potentially supplementary planting over a number of years to help achieve target NVC communities.

Prescription 3.2 Remove conifers (Prescriptions 1.1, 1.2 and 1.3 above), rhododendrons and other exotics/invasives from areas of existing broadleaved woodland. Ongoing monitoring will allow adaptive management to ensure exotics are removed from the Compensation Area (Section 6).

Prescription 3.3 Manage the deer population to allow woodland establishment in accordance with site condition monitoring targets. Deer fencing may be required initially until trees and suitable understorey are established. Ongoing Woodland Herbivore Impact Assessment will allow an adaptive management approach to deer control to be adopted (Section 6).

Prescription 3.4 Remove and manage bracken, with ongoing control where this is encroaching on woodland restoration/creation areas³⁴.

Prescription 3.5 Prohibited activities noted in Prescription 1.6 above (with the exception of planting trees).

6 **MONITORING**

The following sections detail the monitoring required to ensure that the compensatory measures are successfully delivered for each qualifying habitat.

³⁴ [Bracken Control - A Guide to Best Practice | NatureScot \(webarchive.org.uk\)](https://www.nature.scot/webarchive.org.uk)

6.1 Western acidic oak woodland

Compensation Area C is the main area for this compensatory measure, with small areas subject to management and monitoring in Compensation Areas A and B.

- Monitoring of INNS, bracken and self-seeded conifers within Compensation Area to inform removal programme (every 4-5 years).
- Monitoring of planted and regenerating trees to inform weeding programmes and further supplementary planting for the first 5 years and then every 4th year.
- JNCC CSM approach for woodland which is the standard method adopted on Natura sites³⁵. A baseline has been established from 2023 surveys and it is proposed that sample points are increased within the Compensation Area and surveys are repeated every 4-5 years to track progress.
- Herbivore Impact Assessment³⁶, surveys every 4-5 years to track progress.

6.2 Dry heath

Compensation Area B is the main area for this compensatory measure, with small areas subject to management and monitoring in Compensation Areas A and C.

- Monitoring of INNS, bracken and self-seeding conifers within Compensation Area to inform removal programme (every 4-5 years).
- Annual monitoring for the first 5 years to assess the effectiveness of the restoration measures and inform supplemental works.
- JNCC CSM approach for dry heath which is the standard method adopted on Natura sites³⁷. A baseline has been established from 2023 surveys and it is proposed that additional sample points are established in the compensation area and surveys are repeated every 4-5 years to track progress.

6.3 Blanket bog & Wet heath

Compensation Area A is the main area for this compensatory measure, with small areas subject to management and monitoring in Compensation Areas B and C.

- Monitoring of INNS and self-seeding conifers within Compensation Area to inform removal programme (every 4-5 years).
- Annual monitoring for the first 5 years to assess the effectiveness of the restoration measures and inform supplemental works.

³⁵). Common Standards Monitoring Guidance for Woodland Habitats. ISSN 1743-8160 (online).

<https://data.jncc.gov.uk/data/6df1057b-5357-400b-a363-c8748298180a/CSM-WoodlandHabitats-2004.pdf>

³⁶ <https://forestry.gov.scot/publications/1480-the-woodland-herbivore-impact-assessment-method-user-guide/download>

³⁷ Blanket bog, wet heath and dry heath assessed using JNCC (2009). Common Standards Monitoring Guidance for Upland Habitats. Version July 2009. ISSN 1743-8160. <https://data.jncc.gov.uk/data/78aaef0b-00ef-461d-ba71-cf81a8c28fe3/CSM-UplandHabitats-2009.pdf>

- JNCC CSM approach for blanket bog and wet heath which is the standard method adopted on Natura sites³⁸. A baseline has been established from 2023 surveys and it is proposed that additional points are established in the Compensation Area and surveys are repeated every 4-5 years to track progress.

It should be noted that the Compensation Plan is a live document and may require revision based on the findings from the monitoring programme, unexpected events or evolving guidance. Any proposed amendments would be put to the CMG for approval before implementation.

³⁸ Blanket bog, wet heath and dry heath assessed using JNCC (2009). Common Standards Monitoring Guidance for Upland Habitats. Version July 2009. ISSN 1743-8160. <https://data.jncc.gov.uk/data/78aaef0b-00ef-461d-ba71-cf81a8c28fe3/CSM-UplandHabitats-2009.pdf>

ANNEX A. MANAGEMENT AND MONITORING TIMETABLE

Table A-1 Management and Monitoring Timetable

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15...
Removal of commercial plantation (for blanket bog, wet heath, dry heath restoration) (P1.1)*	✓														
Peatland re-wetting (blanket bog and wet heath). (P1.1)	✓														
Ridge – Furrow reprofiling (blanket bog, wet heath, dry heath) (P1.1)	✓														
Remove regenerating conifer and INNS removal (all areas) (P1.2, 1.3, 2.2, 3.2)	✓	✓	✓	✓	✓					✓					✓
Bracken monitoring and control (dry heath and woodland areas) (p2.3, 3.4)	✓	✓	✓	✓	✓					✓					✓
Regeneration and potentially supplementary tree planting and maintenance (woodland areas) (P3.1)	✓	✓	✓	✓	✓	✓									
Deer management (all areas) (P 1.4, 2.5, 3.3)	Throughout lifetime of Compensation Plan														
Excluded activities (P1.5, 2.6, 3.5)	Apply from the commencement of management														
Inspection of re-wetting and ridge – furrow reprofiling areas	✓	✓	✓	✓	✓	✓				✓					✓
CSM Habitat monitoring and Woodland HIA	✓				✓					✓					✓
INNS monitoring (all areas)	✓				✓					✓					✓
Reporting to HMG	✓	✓	✓	✓	✓	✓				✓					✓

* P=Prescription

ANNEX B. NOTE ON COMPENSATION RATIOS

The European Commission guidance note for Natura 2000 sites on Article 6.4 of the Habitats Directive³⁹ is helpful in explaining the relevant compensation ratios to be adopted in certain circumstances. The guidance explains that the likely effectiveness, geographical location of measures relative to the loss, and time for compensation to fully develop, are the key factors which should determine a compensation ratio. It also explains that ratios are best set on a case-by-case basis as they are dependent on site-specific circumstances.

The guidance states that, “*There is wide acknowledgement that ratios should be generally well above 1:1. Thus, compensation ratios of 1:1 or below should only be considered when it is demonstrated that with such an extent, the measures will be 100% effective in reinstating structure and functionality within a short period of time (e.g. without compromising the preservation of the habitats or the populations of key species likely to be affected by the plan or project)*”.

NatureScot casework guidance (2021)⁴⁰ notes, at that time, there was only one case in Scotland where compensatory measures were required, and these concerned the upgrading of the Fort William to Mallaig A830 trunk road through Glen Beasdale SAC. In this case, the road improvements resulted in a loss of approximately 7.9 ha of qualifying oak woodland within the SAC, equal to around 2.5% of the total area of qualifying oak woodland habitat within the site and just under 1.6% of the total site area. An area of compensatory habitat was identified adjacent to the SAC, covering approximately 14 ha (which correlates to a compensation ratio of 1.77:1). Much of the compensation area did not support oak woodland of qualifying standard, but the agreed compensatory measures included management prescriptions to address the main problems, including damage by deer and invasive rhododendron, in order to bring the habitat up to qualifying standard.

Other studies regarding Natura 2000 site compensatory measures implemented in England and Wales^{41,42} found compensation ratios primarily in the range of 2:1 to 4:1, however there were some instances of a 1:1 ratio, and more rarely 6:1. These examples were predominately for a range of coastal and port developments concerned with coastal and intertidal habitats, none of the examples concerned habitats comparable with those in the Kinloch and Kyleakin Hills SAC.

Further examples from European Member states have applied replacement to loss compensation ratios of 2:1, 3:1, 4:1, 7:1, 10:1 and 12:1, largely dependent on the restoration time of the habitat types concerned, which in some cases can take up to several decades⁴³. Furthermore, in some cases, different compensation ratios have been applied to different habitat types affected by the same

³⁹ Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. 2007/2012.

https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/new_guidance_art6_4_en.pdf

⁴⁰ NatureScot (2021). Natura Casework Guidance: How to consider plans and projects affecting Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

<https://www.nature.scot/doc/natura-casework-guidance-how-consider-plans-and-projects-affecting-special-areas-conservation-sacs>

⁴¹ Morris, R.K.A., Harley, M., Cottle, R., Banks, B., Doody, J.P., Brown, A.E., Weston, A., Hart, R., & Prince, S. (2016). Review of the Effectiveness of Natura 2000 Sites Compensation Measures in England. Department for Environment Food and Rural Affairs (DEFRA) & Natural England.

<http://www.humbernature.co.uk/admin/resources/13694wc1076finalreport-1.pdf>

⁴² ABPmer (2020). Mitigation and Compensation Opportunity in Marine Consenting. ABPmer Report No. R.3385. A report produced by ABPmer for Welsh Government, March 2020.

⁴³ van Hoorick, G. (2014). Compensatory Measures in European Nature Conservation Law. Utrecht Law Review. Volume 10, Issue 2.

proposal within a Natura site reflecting the certainty of success of recreating or restoring a particular habitat type, or the time required to recreate different habitat types⁴³.

The above compensation ratios have all been applied in the case of SACs. However, compensation ratios are also often applied to certain developments where there are habitat loss or modifications to habitats considered to be of high conservation importance (such as peatlands), or 'irreplaceable' in the case of ancient woodland. Therefore, such non-SAC examples can provide further context. In a recent example (2021) relating to the A1 Morpeth to Ellingham Road in Northumberland, Natural England agreed to a 12:1 compensation ratio for ancient woodland losses⁴⁴. In the case of the M42 Junction 6 Improvement scheme, Natural England (2019)⁴⁵, whilst not stating an acceptable compensation ratio, considered the proposed compensation ratio of 3:1 to be too low for an irreplaceable habitat (ancient woodland is deemed irreplaceable largely because of the time taken to reach the target community being more than 100 years and beyond the scope of scheme proposals). MacArthur Green's experience in recent years in wind farm EIAs and developing peatland Habitat Management Plans (HMPs) has noted compensation ratios for loss of blanket bog or peatland habitats generally in the region of 2:1 (Corriegarth 2 wind farm) to 12:1 ratio (Stranoch 2 wind farm for example).

Considering the summarised habitat loss/modification calculations presented in Table 1 above, a higher compensation ratio would likely need to be applied, particularly given the difficulties in creating or restoring a number of the habitat types (in particular wet heath, blanket bog and oak woodland) to be affected by the Proposed Development and the typical time lag between creation/restoration and target condition, structure and functionality for these same habitat types⁴⁶. However, this is also largely dependent on the area(s) selected for the compensatory measures with respect to their current condition and the restoration techniques proposed. For example, restoring an area of poor and checked forestry on peatland back to blanket bog that has retained much of its typical active bog vegetation will be easier to restore, take less time to reach target condition, and has a greater certainty of success than trying to restore an area of mature commercial forestry back to blanket bog where the effects of drainage, shading, and aeration of the peat profile have been longer term and the active peatland vegetation has been lost.

Compensatory measures should primarily be concerned with the habitat types affected, i.e., western acidic oak woodland, blanket bog, dry heath, and wet heath. However, it should also be noted previously for this SAC that woodland features have been favoured over open ground features on this site.

The above discussion on compensation ratios is primarily concerned with the creation or restoration of SAC qualifying habitats and the inherent difficulties in doing so. However, smaller ratios are more likely to be acceptable in cases where the SAC can be extended to incorporate existing, connected, and functioning areas of habitat of the same, or better-quality, equivalent to those SAC qualifying habitats to be lost or damaged. Should this be the preferred option, then reduced and appropriate compensation ratios may be acceptable.

⁴⁴ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010059/TR010059-001391-David%20Morrow%20on%20behalf%20of%20the%20Applicant%20-%20Other-%206.7%20Ancient%20Woodland%20Strategy.pdf>

⁴⁵ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010027/TR010027-000493-Natural%20England%20-%20Response%20to%20Examiner's%20First%20Written%20Questions.pdf>

⁴⁶ Natural England. (2023). The Biodiversity Metric 4.0. Natural England Joint Publication JP039. <http://nepubprod.appspot.com/publication/6049804846366720>.

As there are no standard or set compensation ratios in cases such as this, and the ratios required to be applied can vary widely by habitat type, and for many of the factors discussed above, Table 1 above sets out the qualifying habitat types to be affected, the predicted losses/modification due to the Proposed Development, and the potential compensation area requirements based on a range of possible compensation ratios. As noted above, different ratios may be applied to different habitat types, and ratios may be affected by the location, quality, and connectivity of compensatory areas identified. In general, ratios are likely to be higher for woodland, wet heath and blanket bog, than for dry heath.

ANNEX C. TECHNICAL APPENDIX: SKYE REINFORCEMENT PROJECT: KINLOCH AND KYLEAKIN HILLS SAC COMPENSATION PLAN (INCLUDING RESULTS FROM NATIONAL VEGETATION CLASSIFICATION (NVC) SURVEYS, TARGET NOTES AND COMMON STANDARDS MONITORING (CSM) SURVEYS).

**ANNEX D SKYE REINFORCEMENT PROJECT: COMPENSATION AREA. PEAT LANDSLIDE
HAZARD AND RISK ASSESSMENT**