

FEARNA STORAGE

Fearna Pumped Storage Hydro Scheme EIA Report

Appendix 8.1A – Main PSH Site NVC Survey

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Quality Information

Prepared by

Envirocentre

Checked by

Chris Pasteur

Approved by

Fraser Allison

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Fraser Allison

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**Fearna Pumped Storage Scheme
Pumped Storage Hydro Area National Vegetation
Classification Survey**



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EnviroCentre Limited Office Locations:

Glasgow

Edinburgh

Inverness

Banchory

Registered Office: Craighall Business Park 8 Eagle Street Glasgow G4 9XA

Tel 0141 341 5040 info@envirocentre.co.uk www.envirocentre.co.uk

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EXECUTIVE SUMMARY

EnviroCentre Limited were commissioned by ASH Design + Assessment on behalf of Gilkes Energy to undertake a National Vegetation Classification (NVC) survey of a site known as Loch Fearna Pumped Storage Scheme, near Invergarry, in relation to a planning submission to develop the site to accommodate a proposed pumped storage hydro scheme and associated infrastructure. The NVC survey was conducted during June and August 2023.

Eighteen NVC communities and two non-community were identified during the survey. Eleven communities qualified as Annex 1 habitats of international importance (A22, H14, H17, H21, M1, M3, M10, M15, M17, M25, and W11); four communities qualified as Priority Habitats listed in the Scottish Biodiversity List (SBL) considered to be of national (Scottish) importance (M6, W17, W18, and U5); one habitat was considered to be of site importance (W23) and three were considered to be of site importance (OVx, U4, U5, and U20).

Four wetland habitats within the survey area represent potential GWDTE habitats. The M6 mire and M10 mire communities can be highly groundwater dependent, depending on the hydrogeological setting, and the M15 wet heath and M25 mire communities can be moderately groundwater dependent, depending on the hydrogeological setting.

M1 and M3 bog pools are considered to be priority peatland communities; M17 blanket mires are communities that are likely to be considered as priority peatland; and M15 wet heath, and M25 mire, on deep peat (>50cm), may be degraded peatland communities that are unlikely to be classed as priority peatland, in terms of development guidance. M15 wet heath and M25 mire within the survey area located on thinner peats and peaty soils (<50cm) are considered to be naturally occurring rather than a product of human management.

Contents

Executive Summary	i
1 Introduction	1
1.1 Terms of Reference	1
1.2 Scope of Report	1
1.3 Survey Area Description	1
1.4 Project Description	2
1.5 Report Usage	2
2 Method	3
2.1 Desk Study	3
2.2 Habitat Survey	3
2.1 GWDTE Determination	4
2.2 Evaluation of Ecological Features	4
2.3 Survey Constraints	5
3 Results	6
3.2 Field Survey Summary	7
3.3 NVC Communities	9
3.4 Notable/Protected Faunal Species	18
3.5 GWDTE Evaluation	19
3.6 Peatland	19

Appendices

A	Quadrat Location Plan
B	Geographical Level of ImportanceEcological Features
C	NVC Survey Plan
D	GWDTE Plan
E	Habitat Designation Plan
F	NVC Quadrat Floristic Tables
G	Target Note Plan
H	Target Notes
I	Peatland Restoration and Opportunities Plan
J	Woodland Restoration and Opportunities Plan

Tables

Table 3-1: Habitat Summary	7
Table 3-2: GWDTE habitats within the Survey Area	19

1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Limited were commissioned by ASH Design + Assessment on behalf of GILKES Energy to undertake a National Vegetation Classification (NVC) survey of a site known as Loch Fearna Pumped Storage Scheme, near Invergarry, in relation to a planning submission to develop the site to accommodate a proposed pumped storage hydro scheme and associated infrastructure.

The 'survey area' constitutes the areas of the 'site' plus appropriate buffers as shown in the Quadrat Location Plan in Appendix A.

The results and recommendation in this document relate to the site boundary as provided by the client at the time of the survey.

1.2 Scope of Report

The aim of the NVC survey is to establish the current ecological baseline of the site, in order to inform the proposed development of a pumped storage scheme. The main objectives of the survey were as follows:

- Classify the vegetation communities present within the survey area.
- Confirm the presence of any priority habitats, priority floral species, and potential Ground Water Dependent Terrestrial Ecosystems (GWDTEs) via National Vegetation Classification (NVC) survey.

1.3 Survey Area Description

The survey area is situated to the north of Loch Quoich circa (c.) 24km west of Invergarry, centred at Ordnance Survey National Grid Reference (OSNGR) NH 05162 03136, and ranges between 210m-720m altitude. The survey area extends over c. 510 hectares (ha) and comprises south and southwest-facing slopes and corries of upland blanket mire, heathland, and flush habitat; burns with associated riparian woodland; acid grassland, bracken, mire, and heath habitats in the lower lying ground and a rock shingle beach along Loch Quoich's shoreline.

The survey area is surrounded by the mountainous peaks of Gleouraich and Spidean Mialach, with the site's north-eastern extent containing the freshwater Loch Fearna, (c. 10.16 ha) within a mountain basin (Coire Glas). Multiple small watercourses flowing from the southwestern slopes of Spidean Mialach feed Loch Fearna. Loch Fearna has a natural outflow (Allt Fearna) to the southwest which flows through a deep ravine and discharges into Loch Quoich. The Allt a' Mheil in the west edge of the site flows south into Loch Quoich from the slopes of Coire Dubh. Loch Quoich is dammed in its east extent as a component of an existing hydro electrical scheme.

The survey area is split between three land ownerships – West Glenquoich Estate, East Glenquoich Estate, and SSE Generation. Much of the survey area is managed for deer stalking by the local estates. Access into the upper hill ground is via an estate track which is located west of the Allt a' Mheil, west of the proposed site. The track runs steeply upslope where it terminates at c. 400m altitude at a small dam. There are no deer fences within the survey area and deer have uninhibited access across the site. There are no estate tracks within the upper hill ground of Coire Dubh and Loch Fearna, and

access is minimal beyond a small trail which intercepts the site and leads to Spidean Mialach. The survey area is not managed as a grouse moor and there is no evidence of historic burning within the peatland vegetation. Sheep presence was noted on site but at low abundance and frequency of droppings was low. No contemporary or historic moor grips were noted during the field survey. The peatland habitats are considered to be in good condition and have not underwent drainage

1.4 Project Description

The site is proposed for a pumped storage scheme to add to the existing hydroelectric network by transferring water between a lower loch (Loch Quoich) and an upper reservoir, comprising Loch Fearna and Coire Dubh. This will involve expanding the water capacity currently held within Loch Fearna and installing underground water pipes feeding a substation on the shoreline of Loch Quoich, as well as installing access routes over the heathland to the west and infrastructure for a transmission network. It is proposed that a dam is constructed from material excavated from site and that the Coire Glas and Coire Dubh are flooded to accommodate an upper reservoir. The highest infrastructure will be situated at 600m altitude. A powerhouse structure is proposed on the bank of Loch Quoich, with the pump-turbine units housed in underground shafts. Water will flow in and out of Loch Quoich and Loch Fearna via screened inlet/outlet structures.

1.5 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre Limited.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre Limited for review to ensure that any relevant changes in data, best practice, guidance or legislation in the intervening period are integrated into an updated version of the report.

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2 METHOD

2.1 Desk Study

In order to anticipate the potential ecological sensitivities at the site, a desk study was conducted in June 2023 in advance of the field survey. The following sources were checked:

- Highland Biological Record Centre (HBRC) Biological Records supplied records for notable and protected floral species within 2km of the site.
- Highland Nature Biodiversity Action Plan¹ for local Priority Habitats and species.
- Records of ancient woodland and Scottish native woodland available through Scotland's Environment Web², within or adjacent to the site.
- The Scottish Biodiversity List³ for Priority Habitats and species.
- Peatland and Carbon Map (2016)⁴.
- British Geology Survey Viewer Tool⁵.
- Ordnance Survey 1:25,000 and 1:50,000 maps⁶.

2.2 Habitat Survey

Field work was conducted by EnviroCentre Senior Ecologist Steven Duncan ACIEEM, and Lead Consultant Ecologist Jake Brendish who are competent and experienced botanists. The survey was conducted over 5 days between the 12th and 16th of June 2023 and concentrated within the survey as demarked in the Quadrat Location Plan in Appendix A.

The survey area included the site boundary in place at the time, a 100m buffer, and extensions to note lower-topography ground near Loch Quoich that could be strategically important during the construction phase. The survey area was extended to include Coire Dubh and a further habitat survey was undertaken by Steven Duncan of this area during August 2023.

2.2.1 National Vegetation Classification

The NVC aims to classify semi-natural vegetation communities in a standardised fashion based on species composition and frequency. A site walkover was conducted to gain an overview of the vegetation present. Homogenous stands were then identified by eye and mapped by hand onto aerial imagery. Notes on the species composition and frequency, structure, and any apparent management were taken. Representative 2x2m quadrats were surveyed using the Domin Scale⁷ within the habitats. A general species list for each community and/or sub-community was recorded additionally to the quadrat data and used to bolster the species description where relevant. This data, alongside the keys and floristic tables presented in Volumes 1 to 5 of the British Plant Communities⁸, were used to

¹ Available at: https://www.hIGHLANDenvironmentforum.info/wp-content/uploads/2022/01/Highland-Nature-Biodiversity-Action-Plan-2021-2026-_compressed-.pdf (Accessed June 2023)

² Available at: <https://www.environment.gov.scot/maps/scotlands-environment-map/> (Accessed June 2023)

³ NatureScot (2023) Available at: <https://www.nature.scot/scottish-biodiversity-list> (Accessed June 2023)

⁴ Available at [Scotland's Soils - soil maps \(environment.gov.scot\)](https://www.environment.gov.scot/scotland-soils) (Accessed June 2023)

⁵ Available at [GeolIndex - British Geological Survey \(bgs.ac.uk\)](https://www.bgs.ac.uk/geological-survey-of-scotland) (Accessed June 2023)

⁶ Available at [Bing Maps - Directions, trip planning, traffic cameras & more](https://www.bing.com/maps) (Accessed June 2023)

⁷ Cover of 91-100% - Domin 10; Cover of 76-90% - Domin 9; Cover of 51-75% - Domin 8; Cover of 34-50% - Domin 7; Cover of 26-33% is - Domin 6; Cover of 11-25% - Domin 5; Cover of 4-10% - Domin 4; Cover of <4% with many individuals is Domin; Cover of <4% with several individuals is Domin 2; and Cover of <4% with few individuals is Domin 1

⁸ Rodwell, J.S. (1991) *British Plant Communities, Volume 1: Woodlands and Scrub*. Cambridge University Press, Cambridge.

Rodwell, J.S. (1991) *British Plant Communities, Volume 2: Mires and Heaths*. Cambridge University Press, Cambridge.

determine the NVC communities. The communities were identified to the sub-community level where sufficient data was available to do so. The naming convention follows Stace (2019)⁹ for vascular plants and Smith (2004) for bryophytes¹⁰.

A minimum mapping unit of 400m² was utilised within the proposed development footprint¹¹. A larger mapping unit of 10,000m² was utilised in the survey area. Significant habitats under the minimum mapping unit and presence of protected and/or notable species/features/management was target noted.

The DAFOR scale¹² is used in text to describe the relative abundance of vegetative species recorded within each NVC community.

NVC Quadrat locations are displayed in Appendix A: Quadrat Location Plan.

2.1 GWDTE Determination

GWDTEs are not in themselves necessarily of ecological value or rarity, although some GWDTEs may also comprise Annex I habitat, protected under the EU Habitats directive or UK Priority Habitats. GWDTEs are indicative of groundwater and so are protected under the Water Framework Directive (WFD), which is transposed into Scottish law through the Water Environment and Water Services (Scotland) Act, 2003 (WEWS Act). SEPA planning guidance¹³ has been used to determine potential GWDTEs. To help assess groundwater dependency, observations of local topography and features such as springs, diffuse groundwater emergence and floristic indicators of base enrichment were made.

2.2 Evaluation of Ecological Features

European, national and local governments and specialist organisations have together identified a large number of sites, habitats and species that provide the key focus for biodiversity conservation in the UK and Ireland, supported by policy and legislation. These provide an objective starting point for identifying the important ecological features that need to be considered.

A geographical level of importance, as described in Appendix B, has been assigned to the habitats identified on the site and in the survey area. Where a feature is important at more than one level in the table, its overriding importance is that of the highest level. Usually, only the highest level of legal protection is listed.

Rodwell, J.S. (1992) *British Plant Communities, Volume 3: Grasslands and Montane Communities*. Cambridge University Press, Cambridge.

Rodwell, J.S. (1995) *British Plant Communities, Volume 4: Aquatic Communities, Swamps and Tall-herb Fens*. Cambridge University Press, Cambridge.

Rodwell, J.S. (2000) *British Plant Communities, Volume 5: Maritime Communities and Vegetation of Open Habitats*. Cambridge University Press, Cambridge.

⁹ Stace, C.A. (2019) *New Flora of the British Isles*. 4th edition. C&M Floristics.

¹⁰ Smith, A.J.E. (2004) *The Moss Flora of Britain and Ireland*. 2nd edition. Cambridge University Press.

¹¹ Proposed development footprint, drawing No. FEA/GEL/001, as provided by Ash + Design in April 2023. This Footprint was updated to include Coire Dubh to the north during July 2023; however, a updated drawing was not provided at this time.

¹² D - Dominant 50-100%, A - Abundant 30-50%, F - Frequent 15-30%, O - Occasional 5-15%, and R - Rare < 5%

¹³ Scottish Environment Protection Agency (SEPA) Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Development on Ground Water Abstractions and Ground Water Dependent Terrestrial Ecosystems Accessed online at: <https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf> (Accessed November 2023)

2.3 Survey Constraints

The survey was conducted within the main growth season. However, the peak times for growth and flowering vary between species, so it is possible that some species were missed as their vegetative and/or flowering parts were not visible at the time of survey. It is considered unlikely that this would alter the NVC communities assigned or the evaluation of GWDTEs.

Due to complexities of plant identification in the field and surveyor experience, not all lower plant species (mosses, liverworts and lichens) would likely have been identified. Individual notable species may have been missed but overall NVC communities unlikely to be altered.

Given the size of the site and minimum mapping unit utilised, smaller features such as springs or flushes and bog pools may have been missed.

Representative 50 x 50m quadrats were not undertaken for woodland canopies as recommended in British Plant Communities⁸ due to Woodland habitat was not sampled to difficulties accessing or limited size of the woodlands.

3 RESULTS

The following section should be read in conjunction with Appendix A: Quadrat Location Plan, Appendix B: Geographical Level of Importance of Ecological Features, Appendix C: NVC Survey Plan, Appendix D: GWDTE Plan, Appendix E: Habitat Designation Plan, and Appendix F: NVC Quadrat Floristic Data.

3.1.1 Desk Study Summary

The British Geological Society Hydrogeological Map¹⁴ indicated that bedrock is composed of rock of the Glenfinnan Group, comprising the Eastern Glen Quioch psammities and Lochailort pelites (with subordinate psammite). Course gneiss and psammite are common in the area interbanded with semipelite and quartzite. Calcsilicate bands are common within psammite and are the source for base-rich springs across the survey area. The bedrock type hosts small amounts of groundwater in near surface weathered zone and secondary fractures and is considered to be a very low to low productivity aquifer which is overlain by moderate to low permeability strata.

Superficial deposits resting upon the bedrock vary across the survey area, with peat deposits of varying depths and peaty soils (gleyed podzols) as the predominant deposit below 600m and mineral soils (sub-alpine podzols) and exposed bedrock composing steep hill-ground above 600m.

The Peatland and Carbon map (2016) indicated that deposits of class 2, 3, 4, and 5 peat¹⁵ are present across the survey area. Class 3 peat is present on low to moderate topography to the north, east, and south of Loch Fearn. The peat extends furthest to the east along a gradual southwest-facing buttress to the east of Coire Glas. Class 4 and 5 deposits of peat are located within the low to moderate sloping ground in the Allt a' Mheil watercourse valley. This peat deposit extends northwards into the floor of Coire Dubh. Peatland. Class 2 peat deposits occur on low to moderate sloping ground between the banks of Loch Quioch (220m altitude) and 400m altitude, in a 0.1 -0.4km band parallel to the southern boundary of site.

All watercourses within the survey area are locally within the Loch Quoich catchment which in turn is located within the River Ness catchment.

¹⁴ The British Geological Society Hydrogeological Map, available at <https://www.bing.com/search?q=British%20Geological%20Society%20Hydrogeological%20Map&pc=0MON&ptag=C24N241A06F869CFCC&form=CONBNT&conlogo=CT3210127> (Accessed November 2023)

¹⁵ Class 2 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential; Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat; Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat; Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils; and Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

3.2 Field Survey Summary

The results of the field survey are summarised in Table 3-1, below:

Table 3-1: Habitat Summary

NVC Habitats	Broad Phase 1 Habitat	Annex 1 Habitat	Priority Habitat	Importance	GWDTE	Area (ha) ¹⁶
A22 <i>Littorella uniflora</i> - <i>Lobelia dortmanna</i> community	G13 Standing Water - Oligotrophic	3130 Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>	Oligotrophic and Dystrophic Lakes	International	No	10.16
H17 <i>Calluna vulgaris</i> - <i>Arctostaphylos alpinus</i> heath	D4 Montane Heath/Dwarf Herb	4060 Alpine and Boreal heaths	Mountain Heaths and Willow Scrub	International	No	7.81
H14 <i>Calluna vulgaris</i> - <i>Racomitrium lanuginosum</i> heath	D4 Montane Heath/Dwarf Herb	4060 Alpine and Boreal heaths	Mountain Heaths and Willow Scrub	International	No	214.2
H21 <i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> - <i>Sphagnum capillifolium</i> heath	D11 Dry Dwarf-Shrub: Acid	4030 European dry heaths	Upland Heathland	International	No	0.62
M1 <i>Sphagnum auriculatum</i> bog pool community	E161 Blanket Bog	7130 Blanket bogs	Blanket Bog	International	No	Unknown*
M3 <i>Eriophorum angustifolium</i> bog pool community	E161 Blanket Bog	7130 Blanket bogs	Blanket Bog	International	No	Unknown*
M6 <i>Carex echinata</i> - <i>Sphagnum fallax/denticulatum</i> mire	E21 Flush and Spring: Acid/Neutral	N/A	Upland Flushes, Fens and Swamps	National (Scottish)	Highly Ground Water Dependent	2.22
M10 <i>Carex dioica</i> - <i>Pinguicula vulgaris</i> mire	E22 Flush and Spring: Basic	7230 Alkaline fens	Upland Flushes, Fens and Swamps	International	Highly Ground Water Dependent	Unknown*

¹⁶ Area cover has been calculated for areas in which the habitat is dominant. This figure does not account for mosaic habitats.

NVC Habitats	Broad Phase 1 Habitat	Annex 1 Habitat	Priority Habitat	Importance	GWDTE	Area (ha) ¹⁶
M15 <i>Trichophorum cespitosum</i> - <i>Erica tetralix</i> wet heath	D2 Wet Dwarf Shrub Heath	4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	Upland Heathland	International	M15a is Moderately Ground Water Dependent	214.2
M17 <i>Trichophorum cespitosum</i> - <i>Eriophorum vaginatum</i> blanket mire	E161 Blanket Bog	7130 Blanket bogs	Blanket Bog	International	No	105.91
M25 <i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire	E161 Blanket Bog	7130 Blanket bogs	Blanket Bog	International	Moderately Ground Water Dependent	92.14
OVx Other vegetation	J1 Cultivated and Disturbed Land	N/A	N/A	Site	No	21.66
U4 <i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> grassland	B11 Acid Grassland: Unimproved	N/A	N/A	Site	No	4.24
U5 <i>Nardus stricta</i> - <i>Galium saxatile</i> grassland	B11 Acid Grassland: Unimproved	N/A	N/A	National (Scottish)	No	0.12
U20 <i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community	C11 Bracken: Continuous	N/A	N/A	Site	No	18.48
W11 <i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Oxalis acetosella</i> woodland	A111 Woodland: Broadleaved, Semi-Natural	91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles	Upland Oak Woodland	International	No	1.24
W17 <i>Quercus petraea</i> - <i>Betula pubescens</i> - <i>Dicranum majus</i> woodland	A111 Woodland: Broadleaved, Semi-Natural	91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles	Upland Oak Woodland	National (UK)	No	10.87
W18 <i>Pinus sylvestris</i> – <i>Hylocomium splendens</i> woodland	A121 Coniferous Woodland: Semi-natural	N/A	Native Pine Woodlands	National (Scottish)	No	1.27
W23 <i>Ulex europaeus</i> - <i>Rubus fruticosus</i> scrub	A21 Scrub: Scattered	N/A	N/A	Local	No	0.89
No NVC: Cliff Face	I1.1.1 Inland Cliff: Acid/Neutral	4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	Upland Heathland	International	No	1.28

* Habitats with unknown area are generally isolated, small, or occurring as a component of other NVC habitats. These habitats occur with a high frequency across the survey area but are not feasible to map individually and an area estimate has not been provided.

3.3 NVC Communities

The following NVC communities were identified within the survey area:

3.3.1 A22 *Littorella uniflora*-*Lobelia dortmanna* community

This community comprises submerged and temporarily inundated vegetation in the shallow margins of Loch Fearna, c. 510m, asl. This community develops on exposed stoney shallows in clear, oligotrophic water in the north and west of Britian where there is little annual variation in water level. Constant species include abundant water lobelia (*Lobelia dortmanna*) and occasional shoreweed (*Littorella uniflora*), and bulbous rush (*Juncus bulbosus*) was a frequent associate. Other indicators of this community present, include common sedge (*Carex nigra*) and lesser spearwort (*Ranunculus flammula*). Carnation sedge (*Carex panicea*), and square-stalked St John's-wort (*Hypericum tetrapterum*) were also noted as infrequent components of the sward.

This freshwater habitat qualifies as Annex 1 habitat 3130 *Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea*¹⁷ which is characterised by amphibious short perennial vegetation within high altitude oligotrophic water bodies in the north-west of the UK, and therefore, the A22 habitat is considered to be important at an international level.

3.3.2 H14 *Calluna vulgaris*-*Racomitrium lanuginosum* heath

H14 heath with the survey area occurs on an exposed ridge (Quadrat 17) to the west of Loch Fearna at c. 600 altitude on flat ground with thin, free draining soils, among craggy exposed psammite bedrock. The situation is exposed, and dwarf shrubs are low growing.

Racomitrium lanuginosum is constant within this community and forms the dominant component, attaining a DOMIN value of 8. Heather is abundant alongside common deergrass (*Trichophorum germanicum*). Alpine crowberry, bearberry (*Arctostaphylos uva-ursi*), carnation sedge, heath milkwort (*Polygala serpyllifolia*), mat-grass (*Nardus stricta*), sheep's fescue (*Festuca ovina*), purple moor-grass (*Molinia caerulea*), tormentil, wavy-hair grass (*Avenella flexuosa*), and *Pleurozia purpurea*, are frequent; and devil's-bit scabious (*Succisa pratensis*), *Cladonia uncialis*, and mountain everlasting (*Antennaria dioica*) are rare components of the sward.

H14 heath qualifies as Annex 1 habitat 4060 *Alpine and Boreal heaths*¹⁸ and is considered to be important at an international level.

3.3.3 H17 *Calluna vulgaris*-*Arctostaphylos alpinus* heath

H17 heath occurs on the exposed crest to the south of Loch Fearna (Quadrats 24 and 25) at c. 550m asl. This habitat is located on thin, flat to low-slope ground with thin, free draining soils.

Constant species within the sward include abundant heather and *Racomitrium lanuginosum*, and frequent alpine crowberry, and alpine bearberry (*Arctostaphylos alpinus*), and occasional *Cladonia uncialis* and northern clubmoss (*Huperzia selago*). Stiff sedge (*Carex bigelowii*), bearberry (*Vaccinium*

¹⁷ Available at [Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels \(Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea\) - Special Areas of Conservation](#) ([jncc.gov.uk](#)) (Accessed November 2023)

¹⁸ Annex 1 Habitat 4060 Alpine and Boreal heaths, available at [Alpine and subalpine heaths \(Alpine and Boreal heaths\) - Special Areas of Conservation](#) ([jncc.gov.uk](#)) (Accessed November 2023)

vitis-idaea), bell heather (*Erica cinerea*), common deergrass, carnation sedge, devil's-bit scabious, heath bedstraw (*Galium saxatile*), pale butterwort (*Pinguicula lusitanica*), purple moor-grass, tormentil, viviparous fescue (*Festuca vivipara*), lichens: *Cladonia arbuscula*, *Cladonia uncialis*, *Hypogymnia physodes*, and bryophytes: *Hylocomium splendens*, *Pleurozium schreberi* occur frequently, and with less frequency as the constant species. Species recorded rarely within the sward include common bird's-foot trefoil (*Lotus corniculatus*), common butterwort (*Pinguicula vulgaris*), dwarf juniper (*Juniperus communis* ssp. *nana*), bog asphodel (*Narthecium ossifragum*), bilberry, rowan (*Sorbus aucuparia*), sheep's-fescue, wavy hair-grass (*Avenella flexuosa*), alpine clubmoss (*Diphasiastrum alpinum*).

The presence of montane species including alpine crowberry, alpine clubmoss, and dwarf juniper indicate that the stand corresponds with the more montane H17a *Loiseleuria procumbens*-*Platismatia* sub-community.

H17 heath qualifies as Annex 1 habitat 4060 *Alpine and Boreal heaths*¹⁸ and is considered to be important at an international level.

3.3.4 H21 *Calluna vulgaris*-*Vaccinium myrtillus* - *Sphagnum capillifolium* heath

H21 heath was recorded in the north of the survey (Quadrat 41) area on steep slopes in Coire Dudh above 600m altitude. This heath community is located on steep ground on thin, free-draining soils among scree, boulders, and rock outcrops. Constant species within the sward include abundant heather (*Calluna vulgaris*), frequent bilberry (*Vaccinium myrtillus*), occasional alpine crowberry (*Empetrum nigrum* sbsp *hermaphroditum*), tormentil (*Potentilla erecta*), hard fern (*Blechnum spicant*), and bryophytes *Hylocomium splendens*, *Hymenophyllum cupressiforme*, *Sphagnum capillifolium*. carnation sedge (*Carex panicea*), Bryophytes *Pleurozium schreberi* and *Racomitrium lanuginosum*; and *Cladonia* lichens were noted as frequent associates.

This habitat grades into U4 acid grassland in dryer situations and M15 wet heath in wetter situations where the slope gradient reduces.

H21 heath qualifies as Annex 1 habitat 4030 *European dry heaths*¹⁹ and is considered to be important at an international level.

3.3.5 M1 *Sphagnum auriculatum* bog pool community

M1 bog pools are present across blanket bog habitat in a mosaic with M17 blanket mire and M15 wet heath to the south and north of Loch Fearn and west of the Allt a' Mheil burn, occurring from 440m to 650m altitude. The bog pools range in size from 1x1m to 5x10m. The pools occurred as a complex where elongated and close together examples form stepped pools along seepage lines on shallow slopes, particularly north of Loch Fearn. At the time of survey, the pools ranged from inundated to dry.

This community is defined by the presence of *Sphagnum auriculatum* which formed an abundant component within the pools. *S. capillifolium*, *S. denticulatum*, and *S. papillosum* were also recorded submerged and within the pool margins. Pools were typically species poor, especially in the dryer examples. Other species noted in pools across the survey area include bulbous rush, bog asphodel, common butterwort, common cottongrass (*Eriophorum angustifolium*), common deergrass, cross-

¹⁹ Annex 1 Habitat 4030 European dry heaths, available at [Dry heaths \(European dry heaths\) - Special Areas of Conservation \(jncc.gov.uk\)](#) (Accessed November 2023).

leaved heath (*Erica tetralix*), hare's tail cottongrass (*Eriophorum vaginatum*), heath rush (*Juncus squarrosus*), round-leaved sundew (*Drosera rotundifolia*), and star sedge (*Carex echinate*).

M1 bog pools are present in hollows within blanket bog habitat. Blanket bog qualifies as Annex 1 habitat 7130 *Blanket bogs*²⁰ and is considered to be important at an international level.

3.3.6 M3 *Eriophorum angustifolium* bog pool community

M3 bog pools occur within wet depressions with abundant exposed peat, especially within M15 wet heath, M25c mire, and M17 blanket bog, to the west of the survey area. These bog pools are species-poor with common cottongrass forming the most conspicuous component. Associate species are infrequent and include *Sphagnum fallax*, *S. papillosum*, *Polytrichum commune*, and purple moor-grass which occur occasionally. This habitat often occurs as a dried-out peat depression with limited coverage of common cottongrass and no other vegetation.

M3 bog pools are present in hollows within blanket bog habitat. Blanket bog qualifies as Annex 1 habitat 7130 *Blanket bogs*²⁰ and is considered to be important at an international level.

3.3.7 M6 *Carex echinata-Sphagnum fallax/denticulatum* mire

A variation of M6 with locally abundant bulbous rush occurs at low altitude on the shore of Loch Quoich to the east of the survey area (Quadrat 09). This species has likely gained predominant sward cover due disturbance caused by fluctuating water levels. Otherwise, this community has vegetation in common with M6, with frequent star sedge, occasional soft-rush, and *Polytrichum commune*, and occasional slender rush (*Juncus tenuis*), *Sphagnum capillifolium*, *Sphagnum fallax*, New Zealand willowherb (*Epilobium brunnescens*), marsh speedwell, lesser spearwort, and round-leaved sundew.

M6b *Carex echinata-Sphagnum fallax/denticulatum* mire - *Carex nigra-Nardus stricta* sub-community is present to the north of the survey area, on moderate gradient slopes at c. 600m in Coire Dubh. This mire occurs on flushed slopes cutting down the hillside on wet, peaty soils. The sward resembles flushed grassland.

Constant species include marsh violet, purple moor-grass, star sedge, tormentil, velvet bent (*Agrostis canina*) and bryophytes *Sphagnum auriculatum*, *S. fallax*, *S. palustre* and *Polytrichum commune*. Associate species were recorded at lower frequencies and included asphodel, bog, devil's-bit scabious, *S. papillosum*, and *Rhytidiadelphus squarrosus*. Species recorded preferential to the M6b sub-community included heath rush, mat-grass, and *S. capillifolium*. Other species not typical of M6 were present, including viviparous fescue, sheep's fescue, hare's-tail cottongrass, common deergrass, eyebright (*Euphrasia* agg.), hard rush (*Juncus inflexus*), heather, common butterwort, marsh lousewort (*Pedicularis palustris*), marsh hawk's-beard (*Crepis paludosa*), and *Hylocomium splendens*. This mire penetrated the M15 wet heath on the lower slopes and intermediate habitat types exist, owing to the diversity of this habitat. Furthermore, M10 mire occupies narrow base-rich flushes among the M6b habitat, and *Breutelia chrysocoma* and common butterwort are present within the mire where M6 borders this community.

M6 mire habitat qualifies as SBL Priority Habitat *Upland Flushes, Fens and Swamps*²¹ and is considered to be important at a national (Scottish) level.

²⁰ Annex 1 Habitat 7130 Blanket bogs, available at <https://sac.jncc.gov.uk/habitat/H7130/> (Accessed November 2023)

²¹ UK BAP Priority Habitat Descriptions (Fen, Marsh & Swamp), available at <https://hub.jncc.gov.uk/assets/6fe22f18-fff7-4974-b333-03b0ad819b88#UKBAP-BAPHabitats-59-UplandFlushesFensSwamps.pdf> (Accessed November 2023)

3.3.8 M10 *Carex dioica-Pinguicula vulgaris*

M10 mire (TN04, 06, 22, 30, 33, and 36) within the survey are small, narrow habitats restricted to damp ground around base-rich flushes on hill-slopes. This mire habitat is present on all low to moderate sloping ground within the survey area between 400 and 650m, including Corie Dubh, Coire Glas, and the steep slopes south of Loch Fearn.

Sedges and bryophytes form the main component of the sward. Carnation sedge, common butterwort, and Northern spikemoss (*Selaginella rupestris*) are constant species, alongside common cottongrass, common water starwort (*Callitriche stagnalis*), common yellow-sedge (*Carex demissa*), cross-leaved heath, bog asphodel, heath milkwort, heath rush, round-leaved sundew, great sundew (*Drosera anglica*), purple-moor grass, and bryophytes *Breutelia chrysocoma*, *Dichontium palustris*, *Paulatruella falcata*, *Pleurozia purpurea*, *Sphagnum capillifolium*, and *Racomitrium lanuginosum*.

M10 mire habitat qualifies as Annex 1 habitat 7230 *Alkaline fens*²² and is considered to be important at an international level.

3.3.9 M15 *Trichophorum cespitosum-Erica tetralix* wet heath

M15 wet heath (Quadrat 08 and 31) the prevalent habitat within the survey area occupying lower slopes and level ground from 220 to 650m asl. It occurs on Class 2, 4, and 5 peat²³ and forms mosaics with H14 heath, M17 blanket bog, and M25 mire, depending on the peat depth, soil conditions, and moisture regime.

Purple moor-grass, heather, common deergrass, and cross-leaved heath are similarly abundant and form the main component of the habitat. In places *Sphagnum capillifolium* attains similar cover. Of secondary importance, common cottongrass, bilberry, and tormentil form a frequent component.

Bog asphodel, green-ribbed sedge (*Carex binervis*), heath bedstraw, heath rush, and red fescue occur occasionally. Heath rush, *Aulacomnium palustre*, *Racomitrium lanuginosum* (locally frequent), and *Rhytidiadelphus squarrosus* form a frequent component of the sward, while bell heather, bracken (*Pteridium aquilinum*), devil's-bit scabious, hard fern, heath bedstraw, heath milkwort, red fescue (*Festuca rubra*), round-leaved sundew, heath spotted-orchid (*Dactylorhiza maculate*), star sedge, *S. papillosum*, and sweet-vernal grass (*Anthoxanthum odoratum*), occur rarely, alongside bryophytes *Hylocomium splendens* *Hypnum jutlandicum* (locally abundant), and *Pleurozia purpurea*.

M15 heath qualify as Annex 1 habitat 4010 *Northern Atlantic wet heaths with Erica tetralix*²⁴ and is considered to be important at an international level.

3.3.10 M17 *Trichophorum cespitosum-Eriophorum vaginatum* blanket mire

M17 blanket bog occurs between 220 and 650m within the survey area and forms on Class 2, 3²⁵, 4, and 5 peat (Quadrats 15, 19, 23, 26, 33). M17 blanket bog is the most conspicuous bog habitat within

²² Annex 1 habitat 7230 Alkaline fens, available at [Calcium-rich springwater-fed fens \(Alkaline fens\) - Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk) (Accessed November 2023)

²³ Class 2 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential; Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat; Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils; and Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

²⁴ Annex 1 habitat 4010 Northern Atlantic wet heaths with Erica tetralix, available at [Wet heathland with cross-leaved heath \(Northern Atlantic wet heaths with Erica tetralix\) - Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk) (Accessed November 2023)

²⁵ Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat

the survey area, with its largest extents occurring on level ground around Loch Fearn; on moderate gradient ground east of Allt a' Mheil; and on lower-gradient ground adjacent to the road in the south of the survey area. This habitat occurs in uniform tracts, or in broad mosaics with M15 wet heath and M25 mire on undulating ground where it is present on hummocks.

North of Loch Fearn is peppered with M1 bog pools and small M10 mires fed by springs flowing southeast from the slopes of Spidean Mialach. Areas of eroding bogs with peat hags are localised on the lower slopes of Spidean Mialach between 500 – 600m in altitude, typically covering less than 1500m², and are often accompanied by M3 bog pools within flooded or dried out hollows and flushed channels.

Constant species occurring with the greatest frequency across the M17 blanket mire include hare's-tail cottongrass, heather, and *Sphagnum capillifolium* which form an abundant component, common cottongrass, common deergrass, purple moor-grass, and *Sphagnum papillosum* which form a frequent component, and tormentil, and bog asphodel which form an occasional component. Associate dwarf shrubs are not as constant across the mire but can gain local abundance on drier ground where cross-leaved heath and crowberry can become locally abundant, especially on plateau ground around Loch Fearn. Alpine crowberry is restricted to higher altitudes, while bog-myrtle (*Myrica gale*) often forms a conspicuous component of the sward at lower altitudes on flatter ground. Other species recorded less frequently within this lower altitudes include heath milkwort, round-leaved sundew, devil's-bit scabious, carnation sedge, and Northern marsh orchid (*Dactylorhiza purpurella*).

Bryophytes present up to 75% cover within the sward and include *S. papillosum*, *S. subnitens*, *Dicranum scoparium*, *Hylocomium splendens*, *Hypnum jutlandicum*, *Pleurozia purpurea*, *Racomitrium lanuginosum*, alongside prominent *S. capillifolium*, and cladonia lichens including *Cladonia portentosa* attain up to 10% cover at higher elevations.

Indicator species of the M17c *Juncus squarrosus* – *Rhytidiadelphus loreus* sub-community occur around Loch Fearn of within the sward includes frequent alpine crowberry, heath rush, wavy hair-grass, common sedge (*Carex nigra*) and occasional stiff sedge (*Carex bigelowii*). Further species noted at low abundance across this sub-community include hard fern, green-ribbed sedge (*Carex binervis*), and common butterwort.

Areas of M17 blanket bog on the western slopes of Meall a' Mheil (Quadrat 19) have extensive *Sphagnum* carpets typical of the M17a *Drosera rotundifolia* - *Sphagnum* spp. sub-community. Here, great sundew (*Drosera anglica*) and round-leaved sundew are locally abundant in wet hollows.

A hare's-tail cottongrass dominant variety of M17 (Quadrat 39) was recorded within the watersheds on gentle slopes feeding upland burns in Coire Dubh. Hare's-tail cottongrass is the dominant component of this community which is relatively species poor. Other species present include frequent purple moor-grass, bog asphodel, occasional tormentil, and rarely occurring heather, heath milkwort, marsh violet, common cottongrass, deergrass. The moss layer is rich in *Sphagnum* composed mainly of abundant *S. palustre*, frequent *S. papillosum*, *S. fallax*, and *S. capillifolium*, and *Alucomium palustre*, *S. capillifolium*,

M17 blanket mire qualify as Annex 1 habitat 7130 *Blanket bogs*²⁶ and is considered to be important at an international level.

²⁶ Annex 1 habitat 7130 Blanket bogs, available at <https://ncc.gov.uk/habitat/H7130/> (Accessed November 2023)

3.3.11 M25 *Molinia caerulea*-*Potentilla erecta* mire

M25 mire is the second most prevalent habitat within the survey area after M15 wet heath with which it commonly occurs with as a mosaic at a lower frequency. This habitat occurs across all altitudes up to 600m, on wet plateaus, gentle slopes, and hillside flushes. This habitat occurs on peats and peaty mineral soils and is present on Class 2, 3, 4, and 5 peat land within the survey area. This habitat is represented by its heathy form M25a *Erica tetralix* sub-community which has a similar vegetative composition as the M15 wet heath, but purple moor-grass is the dominant component of the sward, typically attaining a DOMIN value of 8 or more (cover over 51%). This subcommunity is characterised by constant species including frequent common cottongrass, bog asphodel and *S. capillifolium*, and occasional common deergrass, tormentil, and devil's-bit scabious. Sedges including green-ribbed sedge, common sedge, star sedge, and carnation sedge are occasional within the sward but do not attain continuous cover. Similarly, grasses sweet-vernal grass, sheep's fescue; and matt grass, and rushes, soft-rush and bulbous rush (*Juncus bulbosus*) occur infrequently and localised.

Bog myrtle is conspicuous amongst the sward in lower altitude areas, alongside rare instances of marsh violet, and orchid species; heath spotted-orchid, heath fragrant-orchid (*Gymnadenia borealis*), and lesser butterfly-orchid (*Platanthera bifolia*).

The bryophyte layer generally ranges between 30% and 80%, with continuous bryophyte carpet occurring on M25a mire located on deep peat. Bryophytes present alongside *S. capillifolium* include infrequent occurrence of *Aulacomnium palustre*, *Hylocomium splendens*, *Pleurozia purpurea*, *Polytrichum commune*, *Rhytidiadelphus squarrosus*, and *S. papillosum*.

M25a mire in situated on deep peat (>50cm) qualifies as Annex 1 habitat 7130 *Blanket bogs*²⁰ and is considered to be important at an international level.

3.3.12 U4 *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland

U4 acid grassland is present below 450m altitude, and occurs on free-draining soils on road and track verges where the ground level has been raised above the surrounding peatland (Quadrat 05, 29), and as isolated patches on well-drained prominent points across the hill-slopes reflecting variation in edaphic conditions, especially soil composition and water content. The habitat is relatively uncommon in the survey area with patchy distribution where is quickly grades back to mire or bracken dominated habitat.

Constant species within the sward include frequent common bent and sweet vernal-grass, and occasional sheep's fescue, tormentil, and heath bedstraw. Purple moor-grass occurs frequently, particularly where this grassland grades into M25 mire where soils are slightly peaty. Early hair-grass (*Aira praecox*), silver hair-grass (*Aira caryophyllea*), heath-grass (*Danthonia decumbens*), matt-grass, and wavy hair-grass are uncommon associates but can be locally frequent where conditions allow. Viviparous Sheep's-fescue is present in some high altitude stands but is otherwise rare. The most common associate non-grass monocotyledons include field wood-rush (*Luzula campestris*), heath woodrush (*Luzula multiflora* ssp. *multiflora*), and a number of sedges, green-ribbed sedge, common sedge, carnation sedge, pill sedge, and common cottongrass.

Often this grassland is found in association with heath vegetation and dwarf shrubs occur frequently form a frequent component, with a little bell heather, bilberry, cross-leaved, and heath heather scattered throughout the sward. Forbs are represented generally infrequent and occurrences of indicator species including hawkweed (*Heiracium* sp.), heath milkwort, heath spotted orchid, knotted pearlwort, (*Sagina nodosa*), lesser butterfly-orchid, lousewort, marsh violet (*Viola palustris*), meadow buttercup (*Ranunculus acris*), New Zealand willowherb, red clover (*Trifolium pratense*), slender St John's-wort, heath speedwell (*Veronica officinalis*), wild tyme (*Thymus drucei*), and yellow-rattle (*Rhinanthus minor*).

Bryophyte cover is variable and is represented by abundant *Hylocomium splendens*, occasional *Rhytidiadelphus squarrosus*, *Pleurozium schreberi*, and *Polytrichum commune*.

U4 acid grassland is a common and widespread habitat in the Scottish uplands and is considered to be important at a site level.

3.3.13 U5 *Nardus stricta*-*Galium saxatile* grassland

U5 acid grassland occurs in isolate patches on the southern slopes of Doire Lochaidh (Quadrat 10) up to 480m altitude, on open and exposed locations on moderate to low topography. The sward is sparse and well grazed.

Mat-grass is constant and occurs abundantly within the sward. Secondary constants include sweet vernal-grass, common bent, sheep's-fescue, heath bedstraw, and tormentil which occur frequently. Heather and billberry are sparse and scattered. Non grass monocotyledons are uncommon and pill sedge, carnation sedge, common yellow-sedge (*Carex demissa*), heath rush, and heath wood-rush occur infrequently. Typical mosses of acid grassland occur, including *Hylocomium splendens*, *Pleurozium schreberi*, and *Rhytidiadelphus loreus*,

The U5 acid grassland is listed on the SBL and is considered to be important at a national (Scottish) level.

3.3.14 U20 *Pteridium aquilinum*-*Galium saxatile* community

This bracken dominated community is present on the south and southwest facing slopes of Leac Doire Lochaidh and the southern bans of Loch Quoich from c. 210m to 400m altitude. It occurs on well-drained well mesic soil on flat ground, low, and moderate topography. It commonly occurs on gullies surrounding watercourses where it extends up slope in reaching fingers. It is absent from wet ground and strongly flushed slopes. Continuous bracken cover within the survey area is closely associated with surrounding M25 mire and M15 wet heath, often forming a complex mosaic, and the vegetation composition of the field layer reflects these associations.

Bracken (*Pteridium aquilinum*) is the dominant constant species within this community. The composition of the understory sward is variable and all three sub-communities are present within the survey area; however, bracken is the dominant component in all sub-communities and the secondary vegetation is occasional to rarely occurring. Vegetation reminiscent of the heathy *Vaccinium myrtillus*-*Dicranum scoparium* sub-community U20b (Quadrat 38) is present adjacent or in mosaic with M15 wet heath, particularly on low-moderate slopes. Here indicators include bog asphodel, cross-leaved heath, deergrass, devil's-bit scabious, heath milkwort, heath wood rush, heath bedstraw, heather, matt grass, pill sedge, purple-moor grass, tormentil, and bryophytes *Dicranum scoparium*, *Hylocomium splendens*, and *Rhytidiadelphus loreus*.

The *Anthoxanthum odoratum* sub-community U20a is present on lower slopes closer to the Loch (Quadrat 27 and 28). Here the sward composition is grassier and suggestive of woodland flora. Indicator species present include bluebell (*Hyacinthoides non-scripta*), common bent, common dog violet, cock's-foot, foxglove, male fern, rusty sallow (*Salix cinerea* subsp. *oleifolia*), sheep's fescue, sweet vernal-grass, wood anemone (*Anemone nemorosa*) and Yorkshire fog alongside typical peatland species described above.

The denes swards of bracken are consistent with the species-poor sub-community U20c. This vegetation compensation occurs within the most extensive swards with little other preferential species growing alongside.

The U20 community is a common and widespread habitat in the Scottish uplands and is considered to be important at a site level.

3.3.15 W11 *Quercus petraea*-*Betula pubescens*-*Oxalis acetosella* woodland

An isolated stand of W11 woodland occurs within the steep-sided gorge of Allt Fearn between 370m and 410m altitude. The gorge is deep, humid, and well protected, allowing this woodland community to occur near its upper altitudinal range. The soils within the gorge are thin, free draining, and the gorge floor contains vegetated talus which has accumulated in the watercourse channel through periodic rockfall. The gorge walls are steep, free-draining, and interspaced with vegetated soils and abundant exposed rock faces. Here the W11 woodland grades into birch dominated W17 woodland.

On the gorge floor, the canopy is open, partially lit, and the woodland contains few stunted, contorted, mature sessile oak (*Quercus petraea*). Downy birch (*Betula pubescens*), rowan (*Sorbus aucuparia*), and goat willow (*Salix caprea*) fill in the gaps. The canopy layer is stunted and merges with the understory and the woodland structure lacks clear definition. Monocotyledons present within the gorge floor sward include frequent purple moor-grass, sweet vernal-grass, and occasional common bent, tufted hairgrass, and wavy hairgrass. Forb cover is infrequent and species-poor and includes alpine lady's mantle (*Alchemilla alpina*), common dog violet, foxglove, heath bedstraw, lesser spearwort, meadow buttercup, tormentil, wood anemone, wood sorrel (*Oxalis acetosella*), wild angelica (*Angelica sylvestris*). Broad buckler fern (*Dryopteris dilatata*), bracken, lady fern (*Athyrium filix-femina*) and hard fern are frequent amongst the talus.

Bryophytes are abundant where the field layer allows sufficient light and space, and the woodland floor, boulders and tree bases can be carpeted by a range of bryophytes, including *Hylocomium splendens*, *Isoetecium myosuroides*, *Pellia epiphylla*, *Racomitrium lanuginosum*, *Rhizomnium punctatum*, *Rhytidiadelphus loreus*, and *Sphagnum fallax*.

The W11 woodland within the survey area qualifies as a small, isolated stand of Annex 1 habitat 91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles²⁷ and is considered to be important at an international level.

3.3.16 W17 *Quercus petraea*-*Betula pubescens*-*Dicranum majus* woodland

W17 woodland is present on low to moderate gradient ground between 210m – 330m altitude within the ancient woodland parcel (AW_2459) in the west corner of the survey area (Quadrat 13), and on the steep banks of the Allt Fearn gorge at c. 400m altitude. Oak is rarely occurring to absent within this woodland community and downy birch is the most substantial constant within the canopy, alongside occasional silver birch (*Betula pendula*), goat willow, eared willow (*Salix aurita*), and rowan. Conifers European larch (*Larix decidua*) and Scots pine (*Pinus sylvestris*) are frequent (locally abundant) within the woodland to the west of the survey area. In the west this woodland is in poor condition due to the understory being dominated by rhododendron where it regularly outcompetes native trees and shrub. Bramble and glaucous dogrose (*Rosa vosagiaca*) are present within the understory where rhododendron has not dominated. The ground layer is patchy and includes creeping bent, creeping soft-grass (*Holcus mollis*) tufted hairgrass, sweet vernal-grass, purple moor-grass, wavy-hair grass, and rush species heath wood-rush and soft rush where light levels allow. Dwarf shrubs are occasionally occurring with scattered heather and bilberry. Forbs are represented by indicator species chickweed wintergreen (*Lysimachia europaea*), foxglove, and tormentil, and associates alpine strawberry (*Fragaria vesca*), and wild angelica. Ferns can be common in the humid and shaded understory, with frequent bracken, broad buckler fern, common male fern, and hard fern. The

²⁷ Annex I Habitat 91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, Available at: [Western acidic oak woodland \(Old sessile oak woods with Ilex and Blechnum in the British Isles\) - Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk) (Accessed November 2023)

bryophyte layer is uncharacteristically species-poor for W17 in terms of bryophytes which is likely due to the shading effect of the rhododendron infestation restricting variety in the ground layer vegetation.

Ancient/long-established woodland is a habitat of principal importance for biodiversity²⁸ and is therefore considered to be of national (UK) importance.

The W17 present within the Allt Fearna gorge differs in having a canopy of low-growing downy birch on the steep walls alongside occasional goat willow and rowan, and with conifers and rhododendron absent. Here the vegetation is protected from browsing and there is a thick field layer of heather, bell heather, and bilberry and forbs. Monocotyledons form an auxiliary component.

The W17 woodland within the survey area qualifies as SBL Priority Habitat Upland Birchwoods²⁹ and is considered to be important at a national (Scottish) level.

3.3.17 W23 *Ulex europaeus*-*Rubus fruticosus* scrub

W23 scrub habitat occurs to the southeast of the survey area at 220m altitude on a drumlin landform feature. Constant species within the scrub include dominant gorse (*Ulex europaeus*) and occasional European broom (*Cytisus scoparius*) and bramble. The understory has grassy and heathy elements that do not fit well into any sub-communities, and includes plants such as common bent, early hair-grass, sheep's fescue, sweet vernal-grass, wavy hairgrass, Yorkshire fog, soft rush, common sedge, heath bedstraw, heath spotted-orchid, red clover, ribwort plantain, tormentil, heather, and bracken,

The W23 community is a common and widespread semi-natural habitat in the Scottish uplands and is considered to be important at a local level.

3.3.18 W18 *Pinus sylvestris* – *Hylocomium splendens* woodland

The western corner of the survey area supports two stands of self-sown, open Scots pine over purple-moor grass mire. This woodland is considered to be the *Sphagnum capillifolium* – *Erica tetralix* sub-community W18d. The stands are distinct from each other in that the northern stand has an open canopy with open grown Scots pine, an absent understory, and a sub-shrub layer dominated by a heathy purple-moor grass dominated sward similar to the surrounding M25 mire, including occasional *Sphagnum capillifolium* cover. The southern stand occurs adjacent to W17 woodland has a denser, closed canopy with canopy associate downy birch, rowan, goat willow, an understory of abundant rhododendron, and a field layer dominated by purple moor-grass with wavy hair-grass and some bracken.

This habitat type does not meet the exact definition of SBL Priority Habitat *Native Pine Woodlands*³⁰ due to the dominance of purple moor-grass within the field; however, due the dominance of mature Scot's pine in the canopy it is considered be an ecologically significant habitat, and as such, has been classified as a Priority Habitat and is considered to be important at a national (Scottish) level.

²⁸ Joint Nature Conservation Committee (JNCC). (2007). UK Biodiversity Action Plan (UKBAP) Priority Habitats & Species. [online] Available from: <https://hub.jncc.gov.uk/assets/98fb6dab-13ae-470d-884b-7816afce42d4> (Accessed November 2023)

²⁹ SBL Priority Habitat Upland Birchwoods, available at UK BAP Priority Habitat Descriptions (Broadleaved, Mixed & Yew Woodland) (2008, revised 2011) | JNCC Resource Hub (Accessed November 2023)

³⁰ SBL Priority Habitat Native Pine Woodlands, available at UK BAP Priority Habitat Descriptions (Coniferous Woodland) (2008) | JNCC Resource Hub (Accessed November 2023)

3.3.19 Non NVC Habitats

3.3.20 OVx

Other Vegetation (OV) is present at the upper margins of the Loch Quoich littoral (shore) zone (Quadrat 12), near the high watermark. The vegetation cover is highly fragmented and colonises isolated tufts of residual peat which are present on the stoney shoreline. Bare ground comprises >60%. This habitat has been disturbed by water-depth fluctuations within the reservoir scouring the peatland vegetation from the lower shore. This habitat on site does not coincide with a recognised NVC vegetation community, and it has been categorised as an unknown open habitat community (OVx). No species attains dominance and occur at low frequencies, with occasional bog asphodel, cock's-foot (*Dactylis glomerata*), common bent, compact rush (*Juncus conglomeratus*), foxglove (*Digitalis purpurea*), cross-leaved heath, gorse (*Ulex europaeus*), hard fern, heather heath milkwort, *polytrichum commune*, male-fern (*Dryopteris filix-mas*), New Zealand willowherb, purple moor-grass, rosebay willowherb (*Chamaenerion angustifolium*), soft rush, wavy hair-grass, and Yorkshire fog recorded.

This sparsely vegetated habitat is highly disturbed, does not constitute a NVC community, and is considered to be important at a site level.

Cliff Faces

Reclined faces of exposed bedrock are present to the north of the survey area within steep-sloping ground of Coire Dubh. The vegetation is open and fragmented comprising scattered plants growing out of rock crevices and ledges. The vegetative composition of this habitat includes species that occur in adjacent M15 wet heath habitat, including bilberry, bell heather, heather, hard fern, and bryophytes such as *Racomitrium lanuginosum*.

This habitat is considered to be a feature of the surrounding M15 wet heath, and as such, qualifies as Annex 1 habitat 4010 Northern Atlantic wet heaths with *Erica tetralix*³¹ and is considered to be important at an international level.

3.4 Notable/Protected Faunal Species

This section should be read in conjunction Appendix G: Target Note Plan, and Appendix H: Target Notes.

Dwarf juniper (TN12) is occasional to rarely occurring within the H17 heath and M15c wet heath communities within Coire Dubh and on the Meall a' Mheil ridge (up to 550m altitude). This species is listed on the SBL and is considered to be important at a national (Scottish) level.

Lesser butterfly-orchid occurs rarely on site with low altitude grassy swards of M25 mire and U4 grassland (below 300m altitude). This species is listed as vulnerable in The Vascular Plant Red Data List for Great Britain (Red List GB Post 2001 - Red list conservation status of GB species EXCLUDING BIRDS - based on IUCN guidelines) and is considered to be important at an international level.

Great sundew (TN20, 23, 25, and 28) is present across the site occurring in M10 mire and M1 bog pools. This species is listed as near threatened in The Vascular Plant Red Data List for Great Britain (Red List GB Post 2001) and is considered to be important at an international level.

³¹ Annex 1 habitat 4010 Northern Atlantic wet heaths with *Erica tetralix*, available at [Wet heathland with cross-leaved heath \(Northern Atlantic wet heaths with Erica tetralix\) - Special Areas of Conservation \(jncc.gov.uk\)](#) (Accessed November 2023)

Rhododendron was recorded frequently across the site, with particularly high densities in the W17 woodland to the west, especially within the most inaccessible parts of the wood. Rhododendron shrubs were recorded high within the watercourse upper catchment (TN14, 17, 19, 34, 42, 43, 45, and 47) in Coire Dubh up to 550m altitude. This species is highly invasive and is considered to be negative in value.

Larch was frequent within the W17 woodland stand to the west where it occurs within the woodland canopy and locally in small single species stands (TN46). This species has likely self-sown within the woodland from historical larch plantations adjacent. This species is undesirable as it outcompetes native species and is considered to be negative in value.

3.5 GWDTE Evaluation

There are four wetland habitats within the survey area representing potential GWDTE habitats. Table 3.2, overleaf, summarises the NVC communities along with corresponding Phase 1 habitat descriptions and GWDTE assessment. A plan of sites areas with potential groundwater dependency can be found in Appendix D. The NVC Quadrat Floristic Tables are provided in Appendix G.

Table 3-2: GWDTE habitats within the Survey Area

NVC Community	Phase 1 Habitat	SEPA GWDTE Assessment
M6 <i>Carex echinata</i> - <i>Sphagnum fallax/denticulatum</i> mire	E2.1 Flush and spring: acid/neutral	Highly Groundwater Dependent
M10 <i>Carex dioica</i> - <i>Pinguicula vulgaris</i> mire	E2.2 Flush and spring: basic	Highly Groundwater Dependent
M15 <i>Trichophorum cespitosum</i> - <i>Erica tetralix</i> wet heath	D2 Wet Heath	Moderately Groundwater Dependent
M25 <i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire	B5 Marsh/marshy grassland	Moderately Groundwater Dependent

The M6 mire and M10 mire communities can be highly groundwater dependant, depending on the hydrogeological setting. Calcsilicate bands are common within psammite bedrock and are the source for base-rich springs feeding the M10 mires across the survey area

The M15 wet heath and M25 mire communities can be moderately groundwater dependent, depending on the hydrogeological setting.

3.6 Peatland

This section should be read in conjunction Appendix G: Target Note Plan, and Appendix H: Target Notes.

Class 2 peat deposits occur on low to moderate sloping ground between the banks of Loch Quoich. The prevailing habitat type here is M15 wet heath, often existing as a mosaic or grading into pure forms of M17 blanket bog M25 mire. M17 blanket bog is the predominant vegetative cover on Class 3 peat located on the plateau to the north, east, and south of Loch Fearn, often in mosaic with M25 mire and M15 wet heath where the peat depth shallows. Bog pools M1 and M3 are present across the

blanket mire in this area. M15 wet heath, often existing as a mosaic or grading locally into pure forms of M17 blanket bog and M25 mire, are the main habitat types on the Class 4 and 5 deposits of peat located within the Allt a' Mheil watercourse valley.

M1 and M3 bog pools are considered to be priority peatland communities; M17 blanket mires are communities that are likely to be considered as priority peatland; and M15 wet heath, and M25 mire, on deep peat (>50cm), may be degraded peatland communities that are unlikely to be classed as priority peatland, in terms of development guidance³². M15 wet heath and M25 mire within the survey area located on thinner peats and peaty soils (<50cm) are considered to be naturally occurring rather than a product of human management.

Areas of eroding and exposed bare peat with prominent peat hags were patchily distributed on M17 blanket bog and deep peat M15 wet heath, between 220 and 600m altitude. The largest (TN11) covered an area of 40 x 30m with hag depth up to 2m and bog vegetation present at base of hags but absent from slopes. No extensive areas of eroding peat were present within the survey areas. Most eroded patches covered smaller areas and retained some heathland vegetation at their bases. Some areas of peat gully erosion were associated with small watercourses and rills and had become eroded where water had undercut the peat. Eroded peat was sometimes associated with species poor M3 bog pools. Most of the peat erosion noted within the survey area was located within the proposed work footprint (TN11, 16, 21, 29, and 38), while some areas were noted outside of this area (TN40 and 50).

³² [Advising on peatland, carbon-rich soils and priority peatland habitats in development management](#) | NatureScot (accessed November 2023)

APPENDICES

A QUADRAT LOCATION PLAN



Imagery Source: Bing Maps. Image courtesy of Ordnance Survey © 2023 TomTom
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Legend

- NVC Survey Boundary
- NVC Quadrat Locations

Do not scale this map

Client
Gikes

Project
Loch Fearnha Pumped Storage

Title
National Vegetation Classification (NVC)
Quadrat Location Plan

Status		
FINAL		
Drawing 678092-GIS004	Revision -	Date 28 Nov 2023
Drawn SD	Checked MM	Approved MM

Scale
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Rev	Date	Amendment	Initials
-	-	-	-

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B GEOGRAPHICAL LEVEL OF IMPORTANCE ECOLOGICAL FEATURES

Level of Importance	Sites	Habitats	Species
International	Designated, candidate or proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; UNESCO (Ecological) World Heritage Sites; UNESCO Biosphere Reserves; Biogenetic Reserves.	A viable area of habitat included in Annex I of the EC Habitats Directive; a habitat area that is critical for a part of the life cycle of an internationally important species.	A European Protected Species; an IUCN Red Data Book species that is globally Vulnerable, Endangered or Critically Endangered; a Category A internationally important bryophyte assemblage ³³ .
National (UK)	Sites of Special Scientific Interest/Areas of Special Scientific Interest; National Nature Reserves; Nature Conservation Review Sites; Marine Conservation Zones (UK offshore).	An area of habitat fulfilling the criteria for designation as an SSSI/ASSI or MCZ; a habitat area that is critical for a part of the life cycle of a nationally important species.	An IUCN Red Data Book species that is Vulnerable, Endangered or Critically Endangered in the UK; a species that is Rare in the UK (<15 10km grid squares); a Schedule 5 (animal) or Schedule 8 (plant) species included in the Wildlife and Countryside Act 1981; any species protected under national (UK) legislation where there is the potential for a breach of the legislation; a Category A nationally important bryophyte assemblage ³⁴ ; a species that is Vulnerable, Endangered or Critically Endangered in The Vascular Plant Red Data List for Great Britain ³⁵ .
National	National Parks; Marine Protected Areas; Marine Consultation Areas.	Habitats of principal importance for biodiversity in the relevant countries ³⁶ , including; Scottish Biodiversity List (SBL) Priority Habitats and Priority Marine Features (PMFs) ³⁷ .	Species of principal importance for biodiversity in the relevant countries ³⁸ , including; SBL Priority Species and PMFs.
Regional	Regional Parks.	Regional Local	A species that is

³³ Averis, A.B.G, Genney, D.R, Hodgetts, N.G, Rothero, G.P. & Bainbridge, I.P. 2012. Bryological assessment for hydroelectric schemes in the west highlands – 2nd edition. Scottish Natural Heritage Commissioned Report No. 449b

³⁴ Averis, A.B.G, Genney, D.R, Hodgetts, N.G, Rothero, G.P. & Bainbridge, I.P. 2012. Bryological assessment for hydroelectric schemes in the west highlands – 2nd edition. Scottish Natural Heritage Commissioned Report No. 449b

³⁵ Cheffings, C.M. & Farrell, L. (eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. (2005) *The Vascular Plant Red Data List for Great Britain. Species Status No. 7*. JNCC, Peterborough. Available at: <https://hub.jncc.gov.uk/assets/cc1e96f8-b105-4dd0-bd87-4a4f60449907> (Accessed November 2023)

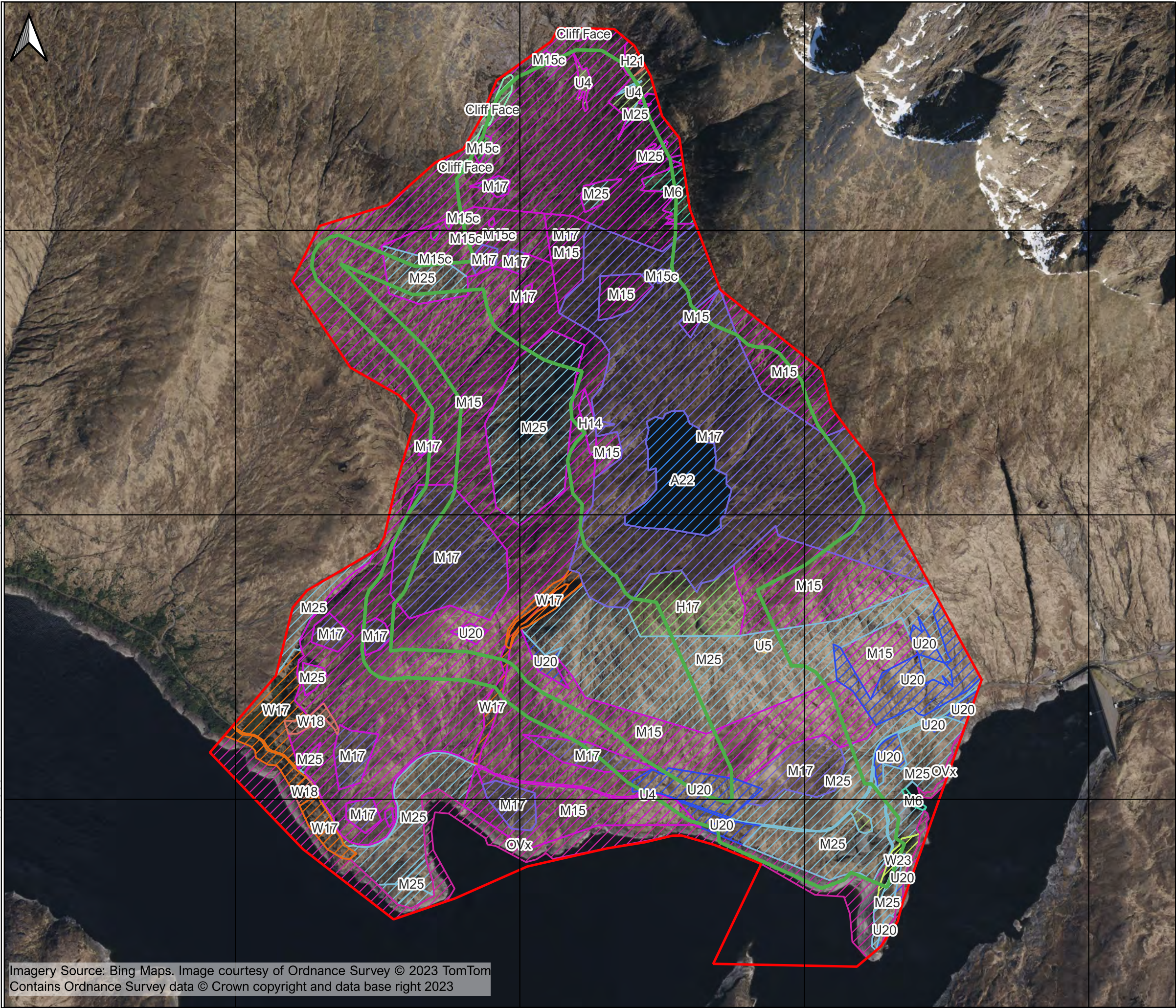
³⁶ These are all the habitats that were identified as requiring action in the UK Biodiversity Action Plan and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework, including any additions.

³⁷ In July 2014, Scottish Ministers adopted a list of 81 priority marine features (PMFs) – many of which are features characteristic of the Scottish marine environment. Most are on other conservation status lists so may be valued higher than this.

³⁸ These are all the species that were identified as requiring action in the UKBAP and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework, including any additions.

Level of Importance	Sites	Habitats	Species
		Biodiversity Action Plan habitats noted as requiring protection.	Nationally Scarce in the UK (present in 16-100 10km grid squares); a species that is included in the Regional LBAP; an assemblage of regionally scarce species.
County / Metropolitan	Woodland Trust Sites; Royal Society for the Protection of Birds Sites; Local Wildlife Sites.	County LBAP habitats noted as requiring protection; semi-natural, ancient woodland >0.25ha in extent.	A species that is included in the County LBAP; an assemblage of species that are scarce at the county level.
Local		Semi-natural, ancient woodland <0.25ha in extent;; semi-natural habitats that are unique or important in the local area;.	Species as defined by Local Authority lists (if available).
Site		Common and widespread habitats not covered above.	Common and widespread species not covered above.
Negative			An Invasive Non-Native Species (INNS) as defined by the GB Non-Native Species Secretariat (NNSS) and supported by the GB Invasive Non-native Species Strategy (2015); legally controlled species under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended by the relevant country legislation).

C NVC SURVEY PLAN



Imagery Source: Bing Maps. Image courtesy of Ordnance Survey © 2023 TomTom
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- Legend**
- NVC Survey Boundary
 - Proposed Layout
 - A22 Littorella uniflora
 - Lobelia dortmanna community
 - H12 Calluna vulgaris
 - Vaccinium myrtillus heath
 - H14 Calluna vulgaris
 - Racomitrium lanuginosum heath
 - H17 Calluna vulgaris
 - Arctostaphylos alpinus heath
 - M6 Carex echinata
 - Sphagnum fallax/denticulatum mire
 - M15 Trichophorum cespitosum
 - Erica tetralix wet heath
 - M15c Cladonia species sub-community
 - M17 Trichophorum cespitosum
 - Eriophorum vaginatum blanket mire
 - M25 Molinia caerulea
 - Potentilla erecta mire
 - OVx
 - U4 Festuca ovina
 - Agrostis capillaris-Galium saxatile grassland
 - U5 Nardus stricta
 - Galium saxatile grassland
 - U20 Pteridium aquilinum
 - Galium saxatile community
 - W11 Quercus petraea-Betula pubescens
 - Oxalis acetosella woodland
 - W17 Quercus petraea -Betula pubescens
 - Dicranum majus woodland
 - W23 Ulex europaeus -Rubus fruticosus scrub
 - W18 Pinus sylvestris
 - Hylocomium splendens woodland
 - Cliff Face

Do not scale this map

Client
Fearna PSH Ltd

Project
Fearna PSH

Title
Appendix 9.3 - National Vegetation Classification (NVC) Habitat Plan

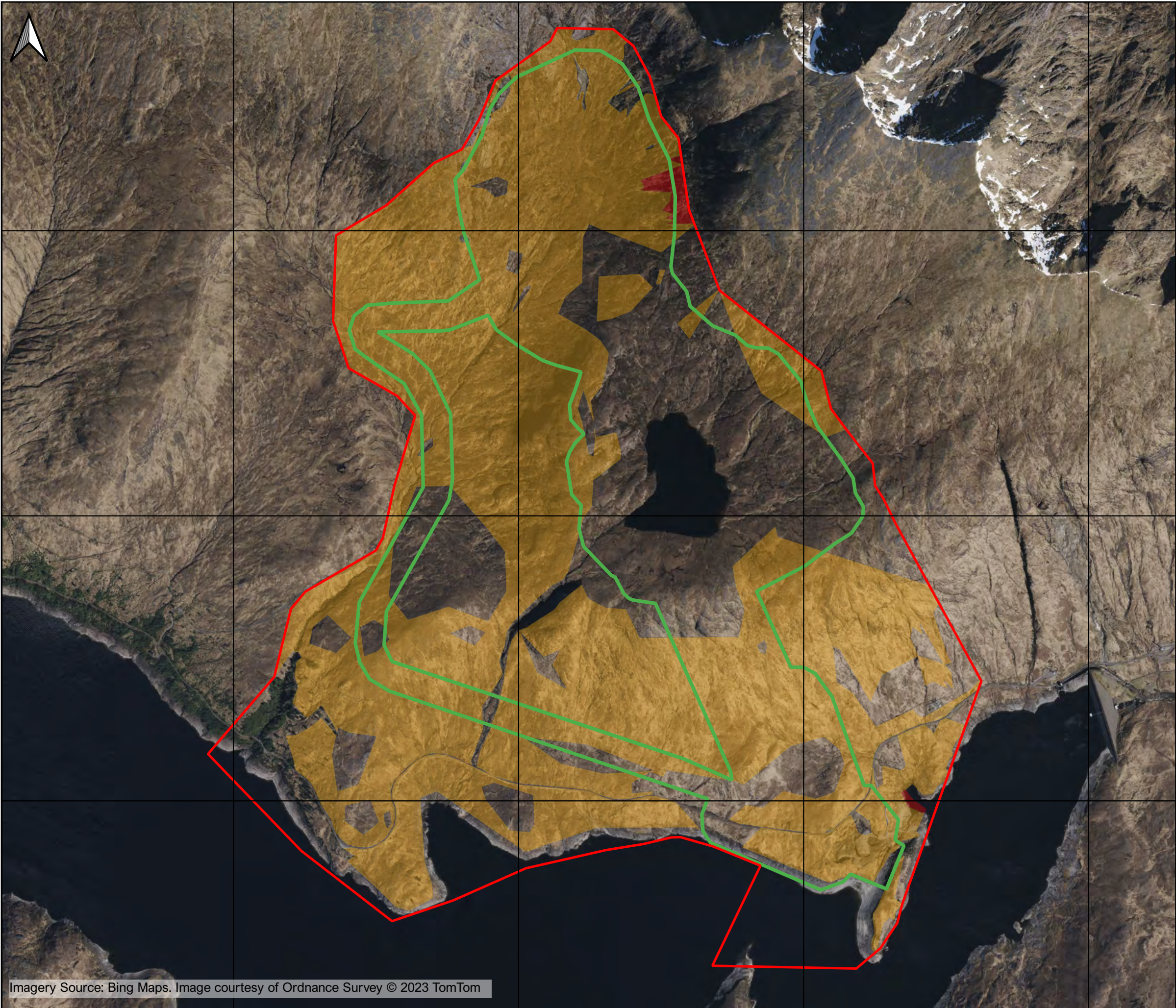
Status		
FINAL		
Drawing No. 678092-GIS005	Revision -	Date 08 Feb 2023
Drawn SD	Checked MM	Approved MM

Scale
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Rev	Date	Amendment	Initials
R1.1	06/02/23	Survey boundary changed to account for Nov 2023 updated layout	SD


8 Eagle Street, Craighall Business Park, Glasgow, G4 9XA.
T: 0141 341 5040 E: info@envirocentre.co.uk
W: www.envirocentre.co.uk

D GWDTE PLAN



Imagery Source: Bing Maps. Image courtesy of Ordnance Survey © 2023 TomTom

Legend

NVC Survey Boundary

Project Footprint

Potential GWDTE Status

Highly Groundwater Dependent

Moderately Groundwater Dependent

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Client
Gikes

Project
Loch Fearna Pumped Storage

Title
Potential Groundwater Dependent Terrestrial
Ecosystem (GWDTE) Plan

Status			FINAL
Drawing 678092-GIS006	Revision -	Date 16 Nov 2023	
Drawn SD	Checked MM	Approved MM	

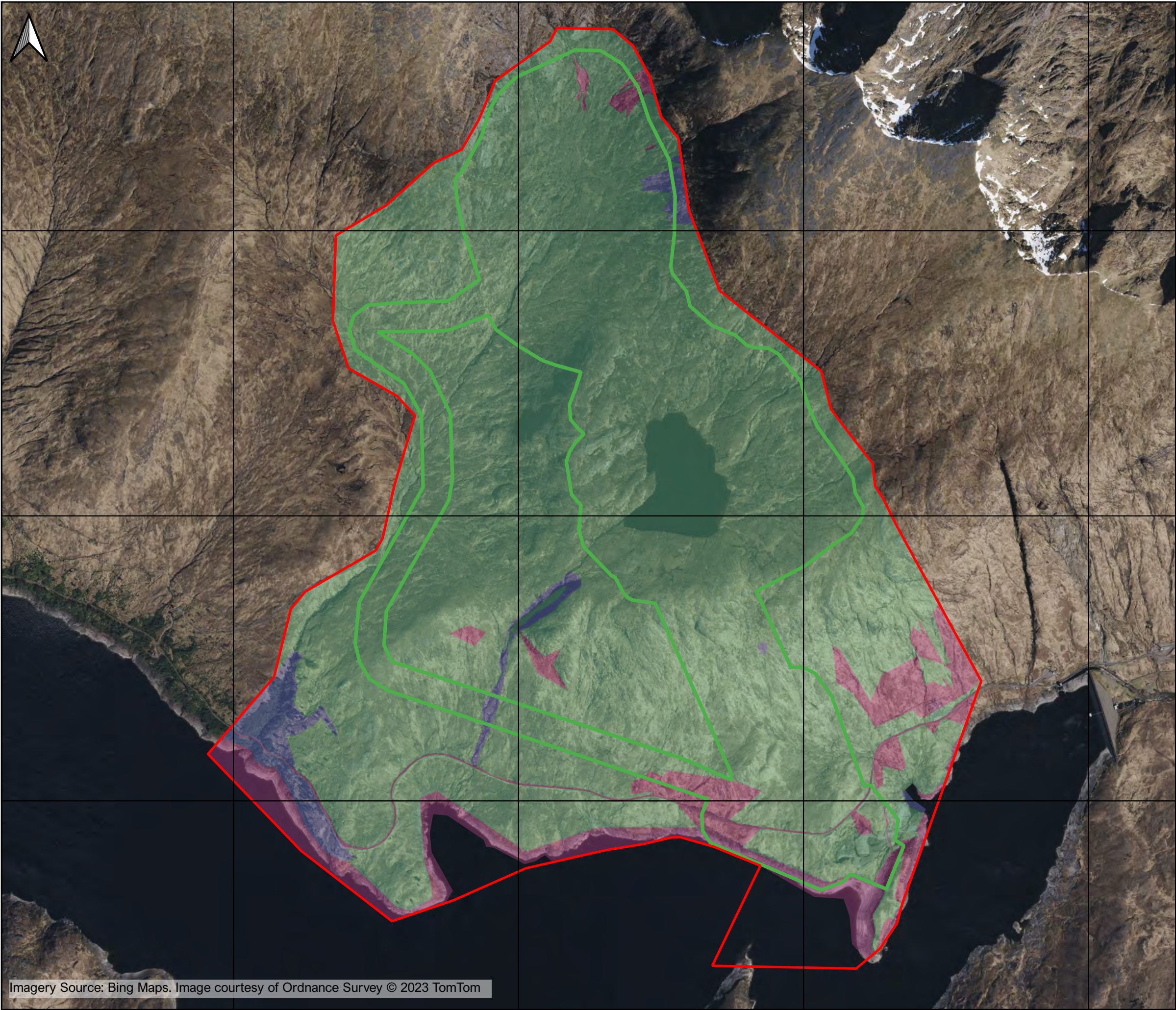
Scale
1:13,000 @ A3

Rev	Date	Amendment	Initials
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E HABITAT DESIGNATION PLAN



Imagery Source: Bing Maps. Image courtesy of Ordnance Survey © 2023 TomTom

Legend

Survey Area Boundary

Project Footprint

Habitat Designation

Annex 1 Habitat
-International Level of Importance

SBL Priority Habitat
-National (Scottish)
Level of Importance

Non Qualifying Habitat
-Site Level of Importance

Do not scale this map

Client
Gikes

Project
Loch Fearn Pumped Storage

Title
Habitat Designation Plan

Status			FINAL
Drawing 678092-GIS007	Revision -	Date 28 Nov 2023	
Drawn SD	Checked MM	Approved MM	

Scale
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Rev	Date	Amendment	Initials
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F NVC QUADRAT FLORISTIC TABLES

No	1	Scientific Name	Common Name	DOMIN
NVC	M15	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	7
8figGR	NH04660315	<i>Calluna vulgaris</i>	Heather	6
Altitude	586m	<i>Molinia caerulea</i>	Purple Moor-grass	6
Aspect	SW	<i>Eriophorum angustifolium</i>	Common Cottongrass	5
Tree %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Shrub %	35	<i>Potentilla erecta</i>	Tormentil	3
Gramin %	55	<i>Drosera rotundifolia</i>	Round-leaved Sundew	3
Herb	10	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	3
Bryoph %	80	<i>Pleurozia purpurea</i>	Purple Spoonwort	3
Lichen %	<5	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Bare %	0	<i>Cladonia portentosa</i>	N/A	2
Veg cm	35			
Microtopo	Moderate			

No	2	Scientific Name	Common Name	DOMIN
NVC	M15c	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	8
8figGR	NH04900402	<i>Calluna vulgaris</i>	Heather	6
Altitude	540m	<i>Trichophorum germanicum</i>	Common Deergrass	5
Aspect	S	<i>Potentilla erecta</i>	Tormentil	4
Tree %	0	<i>Cladonia uncialis</i>	N/A	4
Shrub %	35	<i>Arctostaphylos alpinus</i>	Alpine Bearberry	4
Gramin %	20	<i>Molinia caerulea</i>	Purple Moor-grass	3
Herb	5	<i>Empetrum nigrum</i> <i>ssp.hermaphroditum</i>	Alpine Crowberry	3
Bryoph %	80	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Lichen %	10	<i>Festuca ovina</i>	Sheep's Fescue	2
Bare %	5	<i>Succisa pratensis</i>	Devil's-bit Scabious	1
Veg cm	25			
Microtopo	Moderate			

No	3	Scientific Name	Common Name	DOMIN
NVC	M15c	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	8
8figGR	NH04690398	<i>Calluna vulgaris</i>	Heather	5
Altitude	200m	<i>Trichophorum germanicum</i>	Common Deergrass	5
Aspect	SW	<i>Cladonia uncialis</i>	N/A	4
Tree %	0	<i>Molinia caerulea</i>	Purple Moor-grass	4
Shrub %	30	<i>Empetrum nigrum</i> <i>ssp.hermaphroditum</i>	Alpine Crowberry	4
Gramin %	30	<i>Arctostaphylos alpinus</i>	Alpine Bearberry	3
Herb	5	<i>Succisa pratensis</i>	Devil's-bit Scabious	3
Bryoph %	75	<i>Potentilla erecta</i>	Tormentil	2
Lichen %	10	<i>Festuca ovina</i>	Sheep's Fescue	2

No	3	Scientific Name	Common Name	DOMIN
Bare %	10	<i>Polygala serpyllifolia</i>	Heath Milkwort	1
Veg cm	25			
Microtopo	Moderate			

No	4	Scientific Name	Common Name	DOMIN
NVC	W25	<i>Pteridium aquilinum</i>	Bracken	8
8figGR	NH06540228	<i>Hylocomium splendens</i>	Glittering Wood-Moss	7
Altitude	203m	<i>Molinia caerulea</i>	Purple Moor-grass	6
Aspect	S	<i>Myrica gale</i>	Bog Myrtle	5
Tree %	0	<i>Trichophorum germanicum</i>	Common Deergrass	4
Shrub %	20	<i>Succisa pratensis</i>	Devil's-bit Scabious	3
Gramin %	60	<i>Erica tetralix</i>	Cross-leaved Heath	3
Herb	15	<i>Potentilla erecta</i>	Tormentil	2
Bryoph %	35	<i>Carex panicea</i>	Carnation Sedge	2
Lichen %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	2
Bare %	0	<i>Plagiothecium undulatum</i>	Waved Silk-moss	2
Veg cm	75			
Microtopo	Moderate			

No	5	Scientific Name	Common Name	DOMIN
NVC	U4	<i>Hylocomium splendens</i>	Glittering Wood-Moss	6
8figGR	NH06390225	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	5
Altitude	270m	<i>Festuca ovina</i>	Sheep's Fescue	4
Aspect	S	<i>Juncus effusus</i>	Soft Rush	4
Tree %	0	<i>Galium saxatile</i>	Heath Bedstraw	4
Shrub %	0	<i>Potentilla erecta</i>	Tormentil	4
Gramin %	75	<i>Molinia caerulea</i>	Purple Moor-grass	4
Herb	20	<i>Juncus squarrosus</i>	Heath Rush	4
Bryoph %	45	<i>Holcus lanatus</i>	Yorkshire-fog	3
Lichen %	0	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	3
Bare %	5	<i>Plantago lanceolata</i>	Ribwort Plantain	3
Veg cm	35	<i>Danthonia decumbens</i>	Heath-grass	3
Microtopo	Low	<i>Luzula multiflora</i>	Heath Woodrush	2
		<i>Nardus stricta</i>	Mat-grass	2
		<i>Veronica officinalis</i>	Heath Speedwell	2
		<i>Trifolium repens</i>	White Clover	2
		<i>Luzula campestris</i>	Field Woodrush	1
		<i>Campanula rotundifolia</i>	Harebell	1
		<i>Succisa pratensis</i>	Devil's-bit Scabious	1

No	6	Scientific Name	Common Name	DOMIN
NVC	M25	<i>Molinia caerulea</i>	Purple Moor-grass	8
8figGR	NH06490246	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	8
Altitude	200m	<i>Carex nigra</i>	Common Sedge	4

No	6	Scientific Name	Common Name	DOMIN
Aspect	S	<i>Trichophorum germanicum</i>	Common Deergrass	4
Tree %	0	<i>Carex echinata</i>	Star Sedge	3
Shrub %	10	<i>Erica tetralix</i>	Cross-leaved Heath	3
Gramin %	70	<i>Calluna vulgaris</i>	Heather	3
Herb	5	<i>Potentilla erecta</i>	Tormentil	3
Bryoph %	80	<i>Cladonia portentosa</i>	N/A	2
Lichen %	0	<i>Eriophorum angustifolium</i>	Common Cottongrass	2
Bare %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	2
Veg cm	40	<i>Erica cinerea</i>	Bell Heather	2
Microtopo	Moderate	<i>Carex binervis</i>	Green-ribbed Sedge	2
		<i>Dactylorhiza incarnata</i>	Heath Spotted-orchid	1
		<i>Polygala serpyllifolia</i>	Heath Milkwort	1

No	7	Scientific Name	Common Name	DOMIN
NVC	M25	<i>Molinia caerulea</i>	Purple Moor-grass	8
8figGR	NH06410204	<i>Eriophorum angustifolium</i>	Common Cottongrass	5
Altitude	511m	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	5
Aspect	W	<i>Narthecium ossifragum</i>	Bog Asphodel	5
Tree %	0	<i>Polytrichum commune</i>	Common Haircap	4
Shrub %	5	<i>Juncus squarrosus</i>	Heath Rush	3
Gramin %	60	<i>Carex echinata</i>	Star Sedge	3
Herb	25	<i>Erica tetralix</i>	Cross-leaved Heath	3
Bryoph %	80	<i>Carex nigra</i>	Common Sedge	2
Lichen %	0	<i>Potentilla erecta</i>	Tormentil	2
Bare %	5	<i>Viola palustris</i>	Marsh Violet	1
Veg cm	50			
Microtopo	Low			

No	8	Scientific Name	Common Name	DOMIN
NVC	M15	<i>Molinia caerulea</i>	Purple Moor-grass	8
8figGR	NH05900264	<i>Trichophorum germanicum</i>	Common Deergrass	5
Altitude	200m	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	4
Aspect	SW	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Tree %	0	<i>Carex echinata</i>	Star Sedge	3
Shrub %	0	<i>Potentilla erecta</i>	Tormentil	3
Gramin %	80	<i>Hypnum jutlandicum</i>	Heath Plait-moss	3
Herb	10	<i>Racomitrium lanuginosum</i>	Wooly Fringe-moss	3
Bryoph %	20	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Lichen %	0	<i>Galium saxatile</i>	Heath Bedstraw	2
Bare %	5	<i>Dactylorhiza maculata</i>	Heath spotted-orchid	1
Veg cm	25			
Microtopo	Moderate			

No	9	Scientific Name	Common Name	DOMIN
NVC	M6	<i>Juncus bulbosus</i>	Bulbous Rush	7
8figGR	NH06360200	<i>Carex echinata</i>	Star Sedge	5
Altitude	412m	<i>Juncus effusus</i>	Soft-rush	4
Aspect	S	<i>Polytrichum commune</i>	Common Haircap	4
Tree %	0	<i>Juncus tenuis</i>	Slender Rush	3
Shrub %	0	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	3
Gramin %	90	<i>Sphagnum fallax</i>	Flat-topped Bog-moss	3
Herb	10	<i>Epilobium brunnescens</i>	New Zealand Willowherb	2
Bryoph %	40	<i>Veronica scutellata</i>	Marsh Speedwell	2
Lichen %	0	<i>Ranunculus flammula</i>	Lesser Spearwort	2
Bare %	10	<i>Drosera rotundifolia</i>	Round-leaved Sundew	1
Veg cm	15			
Microtopo	Low			

No	10	Scientific Name	Common Name	DOMIN
NVC	U5	<i>Nardus stricta</i>	Mat-grass	5
8figGR	NH05840255	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	4
Altitude	325m	<i>Festuca ovina</i>	Sheep's-fescue	4
Aspect	SW	<i>Potentilla erecta</i>	Tormentil	4
Tree %	0	<i>Juncus squarrosus</i>	Heath Rush	4
Shrub %	15	<i>Hylocomium splendens</i>	Glittering Wood-moss	4
Gramin %	75	<i>Calluna vulgaris</i>	Heather	4
Herb	10	<i>Galium saxatile</i>	Heath Bedstraw	4
Bryoph %	10	<i>Agrostis capillaris</i>	Common Bent	3
Lichen %	0	<i>Luzula multiflora</i>	Heath Wood-rush	3
Bare %	0	<i>Avenella flexuosa</i>	Wavy Hair-grass	3
Veg cm	25	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	3
Microtopo	Low	<i>Carex pilulifera</i>	Pill Sedge	3
		<i>Carex panicea</i>	Carnation Sedge	3
		<i>Carex demissa</i>	Common Yellow-sedge	2
		<i>Vaccinium myrtillus</i>	Bilberry	2

No	11	Scientific Name	Common Name	DOMIN
NVC	M15	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	9
8figGR	NH05830227	<i>Molinia caerulea</i>	Purple Moor-grass	7
Altitude	201m	<i>Eriophorum angustifolium</i>	Common Cottongrass	5
Aspect	SW	<i>Narthecium ossifragum</i>	Bog Asphodel	5
Tree %	0	<i>Trichophorum germanicum</i>	Common Deergrass	4
Shrub %	35	<i>Erica tetralix</i>	Cross-leaved Heath	4
Gramin %	50	<i>Juncus squarrosus</i>	Heath Rush	4
Herb	10	<i>Pleurozia purpurea</i>	Purple Spoonwort	4
Bryoph %	80	<i>Pinguicula vulgaris</i>	Common Butterwort	3
Lichen %	0	<i>Potentilla erecta</i>	Tormentil	3
Bare %	0	<i>Drosera rotundifolia</i>	Round-leaved Sundew	3

Veg cm	25			
Microtopo	Low			

No	12	Scientific Name	Common Name	DOMIN
NVC	OVx	<i>Molinia caerulea</i>	Purple Moor-grass	4
8figGR	NH04680163	<i>Digitalis purpurea</i>	Foxglove	2
Altitude	214m	<i>Avenella flexuosa</i>	Wavy Hair-grass	2
Aspect	S	<i>Potentilla erecta</i>	Tormentil	2
Tree %	0	<i>Chamaenerion angustifolium</i>	Rosebay Willowherb	2
Shrub %	10	<i>Dryopteris filix-mas</i>	Male-fern	2
Gramin %	20	<i>Galium saxatile</i>	Heath Bedstraw	1
Herb	10	<i>Epilobium brunnescens</i>	New Zealand Willowherb	1
Bryoph %	10			
Lichen %	0			
Bare %	65			
Veg cm	70			
Microtopo	Moderate			

No	13	Scientific Name	Common Name	DOMIN
NVC	W17	<i>Pteridium aquilinum</i>	Bracken	7
8figGR	NH04360181	<i>Molinia caerulea</i>	Purple Moor-grass	7
Altitude	542m	<i>Pleurozium schreberi</i>	Red-stemmed Feather-moss	6
Aspect	S	<i>Betula pubescens</i>	Downy Birch	3
Tree %	30	<i>Blechnum spicant</i>	Hard-fern	3
Shrub %	10	<i>Potentilla erecta</i>	Tormentil	2
Gramin %	60	<i>Lysimachia europaea</i>	Chickweed-wintergreen	2
Herb	10	<i>Avenella flexuosa</i>	Wavy Hair-grass	2
Bryoph %	40	<i>Holcus mollis</i>	Creeping Soft-grass	2
Lichen %	0	<i>Luzula multiflora</i>	Heath Wood-rush	1
Bare %	0			
Veg cm	40			
Microtopo	Low			

No	14	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Calluna vulgaris</i>	Heather	7
8figGR	NH05330300	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	5
Altitude	574m	<i>Juncus squarrosus</i>	Heath Rush	5
Aspect	S	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	5
Tree %	0	<i>Hylocomium splendens</i>	Glittering Wood-moss	5
Shrub %	75	<i>Vaccinium myrtillus</i>	Bilberry	4
Gramin %	35	<i>Molinia caerulea</i>	Purple Moor-grass	4
Herb	2	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	4
Bryoph %	40	<i>Potentilla erecta</i>	Tormentil	2
Lichen %	0			
Bare %	0			

Veg cm	35			
Microtopo	Low			

No	15	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Sphagnum capillifolium</i>	Acute-Leaved Bog-Moss	8
8figGR	NH05270311	<i>Calluna vulgaris</i>	Heather	6
Altitude	203m	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	5
Aspect	N/A	<i>Trichophorum germanicum</i>	Common Deergrass	5
Tree %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Shrub %	40	<i>Juncus squarrosus</i>	Heath Rush	4
Gramin %	30	<i>Sphagnum subnitens</i>	Lustrous Bog-moss	4
Herb	3	<i>Pleurozia purpurea</i>	Purple Spoonwort	3
Bryoph %		<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	3
Lichen %		<i>Pinguicula vulgaris</i>	Common Butterwort	2
Bare %				
Veg cm				
Microtopo				

No	16	Scientific Name	Common Name	DOMIN
NVC	W23	<i>Ulex europaeus</i>	Gorse	8
8figGR	NH06330182	<i>Pleurozium schreberi</i>	Red-stemmed Feather-moss	5
Altitude	587m	<i>Pteridium aquilinum</i>	Bracken	5
Aspect	NW	<i>Potentilla erecta</i>	Tormentil	4
Tree %	0	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	4
Shrub %	75	<i>Galium saxatile</i>	Heath Bedstraw	3
Gramin %	30	<i>Festuca ovina</i>	Sheep's-fescue	2
Herb	20	<i>Juncus squarrosus</i>	Heath Rush	2
Bryoph %	30	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	1
Lichen %	0			
Bare %	10			
Veg cm	200			
Microtopo	High			

No	17	Scientific Name	Common Name	DOMIN
NVC	H14	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	8
8figGR	NH05260331	<i>Calluna vulgaris</i>	Heather	6
Altitude	415m	<i>Trichophorum germanicum</i>	Common Deergrass	6
Aspect	Flat	<i>Potentilla erecta</i>	Tormentil	5
Tree %	0	<i>Carex panicea</i>	Carnation Sedge	4
Shrub %	30	<i>Avenella flexuosa</i>	Wavy Hair-grass	3
Gramin %	35	<i>Pleurozia purpurea</i>	Purple Spoonwort	3
Herb	10	<i>Nardus stricta</i>	Mat-grass	3
Bryoph %	50	<i>Cladonia uncialis</i>	N/A	2
Lichen %	0	<i>Succisa pratensis</i>	Devil's-bit Scabious	2
Bare %	10	<i>Antennaria dioica</i>	Mountain Everlasting	1

Veg cm	20		
Microtopo	Low		

No	18	Scientific Name	Common Name	DOMIN
NVC	W11	<i>Salix caprea</i>	Goat Willow	9
8figGR	NH04970260	<i>Molinia caerulea</i>	Purple Moor-grass	6
Altitude	415m	<i>Hylocomium splendens</i>	Glittering Wood-moss	6
Aspect	S	<i>Sorbus aucuparia</i>	Rowan	5
Tree %	90	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	5
Shrub %	0	<i>Blechnum spicant</i>	Hard-fern	4
Gramin %	25	<i>Oxalis acetosella</i>	Wood-sorrel	4
Herb	25	<i>Ranunculus acris</i>	Meadow Buttercup	4
Bryoph %	70	<i>Rhytidiadelphus loreus</i>	Little Shaggy-moss	4
Lichen %	0	<i>Ranunculus flammula</i>	Lesser Spearwort	3
Bare %	5	<i>Galium saxatile</i>	Heath Bedstraw	3
Veg cm	40	<i>Festuca ovina</i>	Sheep's-fescue	2
Microtopo	Low	<i>Isoetes macrospora</i>	Slender Mouse-tail moss	2

No	19	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Sphagnum papillosum</i>	Papillose Bog-moss	8
8figGR	NH04760301	<i>Molinia caerulea</i>	Purple Moor-grass	7
Altitude	631m	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	7
Aspect	W	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	6
Tree %	0	<i>Potentilla erecta</i>	Tormentil	4
Shrub %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Gramin %	80	<i>Eriophorum angustifolium</i>	Common Cottongrass	3
Herb	15	<i>Polygala serpyllifolia</i>	Heath Milkwort	3
Bryoph %	90	<i>Succisa pratensis</i>	Devil's-bit Scabious	3
Lichen %	0	<i>Drosera rotundifolia</i>	Round-leaved Sundew	3
Bare %	0			
Veg cm	30			
Microtopo	Low			

No	20	Scientific Name	Common Name	DOMIN
NVC	M17c	<i>Calluna vulgaris</i>	Heather	8
8figGR	NH05570385	<i>Vaccinium myrtillus</i>	Bilberry	3
Altitude	550m	<i>Empetrum nigrum subsp. hermaphroditum</i>	Alpine Crowberry	3
Aspect	SW	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Tree %	0	<i>Eriophorum angustifolium</i>	Common Cottongrass	3
Shrub %	60	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	5
Gramin %	25	<i>Trichophorum germanicum</i>	Common Deergrass	3
Herb	5	<i>Potentilla erecta</i>	Tormentil	3
Bryoph %	10	<i>Pinguicula vulgaris</i>	Common Butterwort	2
Lichen %	0	<i>Sphagnum papillosum</i>	Papillose Bog-moss	4

Bare %	0	<i>Hylocomium splendens</i>	Glittering Wood-moss	2
Veg cm	40			
Microtopo	Moderate			

No	21	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	8
8figGR	NH05880324	<i>Calluna vulgaris</i>	Heather	7
Altitude	577m	<i>Molinia caerulea</i>	Purple Moor-grass	6
Aspect	W	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	4
Tree %	0	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	4
Shrub %	45	<i>Trichophorum germanicum</i>	Common Deergrass	4
Gramin %	50	<i>Potentilla erecta</i>	Tormentil	3
Herb	10	<i>Narthecium ossifragum</i>	Bog Asphodel	3
Bryoph %	75	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Lichen %	0			
Bare %				
Veg cm	40			
Microtopo	Moderate			

No	22	Scientific Name	Common Name	DOMIN
NVC	M2	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	7
8figGR	NH05400347	<i>Eriophorum angustifolium</i>	Common Cottongrass	6
Altitude	544m	<i>Sphagnum papillosum</i>	Papillose Bog-moss	5
Aspect	E	<i>Sphagnum fallax</i>	Flat-topped Bog-moss	5
Tree %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Shrub %	0	<i>Drosera rotundifolia</i>	Round-leaved Sundew	3
Gramin %	40	<i>Trichophorum germanicum</i>	Common Deergrass	3
Herb	5			
Bryoph %	60			
Lichen %	0			
Bare %	30			
Veg cm	35			
Microtopo	Low			

No	23	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Calluna vulgaris</i>	Heather	8
8figGR	NH0461503438	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	8
Altitude	545m	<i>Juncus squarrosus</i>	Heath Rush	5
Aspect	S	<i>Eriophorum angustifolium</i>	Common Cottongrass	4
Tree %	0	<i>Trichophorum germanicum</i>	Common Deergrass	4
Shrub %	55	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	4
Gramin %	30	<i>Cladonia portentosa</i>	N/A	4
Herb	5	<i>Pleurozia purpurea</i>	Purple Spoonwort	3
Bryoph %	75	<i>Hypnum jutlandicum</i>	Heath Plait-moss	2

Lichen %	10	<i>Narthecium ossifragum</i>	Bog Asphodel	1
Bare %	0			
Veg cm	30			
Microtopo	Moderate			

No	24	Scientific Name	Common Name	DOMIN
NVC	H17	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	8
8figGR	NH05670270	<i>Calluna vulgaris</i>	Heather	7
Altitude	559m	<i>Empetrum nigrum ssp hermaphroditum</i>	Alpine Crowberry	4
<i>Trichophorum germanicum</i>	Common Deergrass			4
Tree %	0	<i>Molinia caerulea</i>	Purple Moor-grass	4
Shrub %	35	<i>Potentilla erecta</i>	Tormentil	4
Gramin %	15	<i>Juniperus communis</i>	Common Juniper	3
Herb	5	<i>Festuca ovina</i>	Sheep's-fescue	3
Bryoph %	70	<i>Avenella flexuosa</i>	Wavy Hair-grass	2
Lichen %	10		Bog Asphodel	
Bare %	25			
Veg cm	10			
Microtopo	Low			

No	25	Scientific Name	Common Name	DOMIN
NVC	H17	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	9
8figGR	NH05570272	<i>Empetrum nigrum ssp hermaphroditum</i>	Alpine Crowberry	6
Altitude	275m	<i>Carex bigelowii</i>	Stiff Sedge	5
Aspect	SE	<i>Arctostaphylos alpinus</i>	Alpine Bearberry	5
Tree %	5	<i>Avenella flexuosa</i>	Wavy Hair-grass	4
Shrub %	55	<i>Hylocomium splendens</i>	Glittering Wood-moss	4
Gramin %	20	<i>Festuca ovina</i>	Sheep's-fescue	3
Herb	5	<i>Vaccinium myrtillus</i>	Bilberry	3
Bryoph %	90	<i>Rhytidiadelphus loreus</i>	Little Shaggy-moss	3
Lichen %	15	<i>Hypogymnia physodes</i>	N/A	3
Bare %	5	<i>Calluna vulgaris</i>	Heather	2
Veg cm	20	<i>Potentilla erecta</i>	Tormentil	2
Microtopo	Low	<i>Sorbus aucuparia</i>	Rowan	1

No	26	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Myrica gale</i>	Bog-myrtle	6
8figGR	NH06050211	<i>Sphagnum papillosum</i>	Papillose Bog-moss	6
Altitude	252m	<i>Erica tetralix</i>	Cross-leaved Heath	5
Aspect	SE	<i>Molinia caerulea</i>	Purple Moor-grass	5
Tree %	0	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	5
Shrub %	45	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	4
Gramin %	50	<i>Trichophorum germanicum</i>	Common Deergrass	3

Herb	5	<i>Eriophorum angustifolium</i>	Common Cottongrass	2
Bryoph %	30	<i>Potentilla erecta</i>	Tormentil	2
Lichen %	0			
Bare %	0			
Veg cm	40			
Microtopo	Low			

No	27	Scientific Name	Common Name	DOMIN
NVC	W25	<i>Pteridium aquilinum</i>	Bracken	9
8figGR	NH05740201	<i>Molinia caerulea</i>	Purple Moor-grass	7
Altitude	252m	<i>Galium saxatile</i>	Heath Bedstraw	3
Aspect	S	<i>Carex pallescens</i>	Pale Sedge	2
Tree %	0	<i>Potentilla erecta</i>	Tormentil	2
Shrub %	10			
Gramin %	50			
Herb	85			
Bryoph %	5			
Lichen %	0			
Bare %	10			
Veg cm	75			
Microtopo	Moderate			

No	28	Scientific Name	Common Name	DOMIN
NVC	W25	<i>Pteridium aquilinum</i>	Bracken	9
8figGR	NH05790189	<i>Molinia caerulea</i>	Purple Moor-grass	8
Altitude	249m	<i>Hylocomium splendens</i>	Glittering Wood-moss	7
Aspect	S	<i>Pleurozium schreberi</i>	Red-Stemmed Feather-moss	6
Tree %	0	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	3
Shrub %	0	<i>Potentilla erecta</i>	Tormentil	3
Gramin %	35	<i>Galium saxatile</i>	Heath Bedstraw	3
Herb	90	<i>Festuca ovina</i>	Sheep's-fescue	3
Bryoph %	20			
Lichen %	0			
Bare %	0			
Veg cm	60			
Microtopo	Low			

No	29	Scientific Name	Common Name	DOMIN
NVC	U4	<i>Galium saxatile</i>	Heath Bedstraw	5
8figGR	NH06010187	<i>Hylocomium splendens</i>	Glittering Wood-moss	5
Altitude	213m	<i>Polytrichum commune</i>	Common Haircap	5
Aspect	S	<i>Molinia caerulea</i>	Purple Moor-grass	4
Tree %	0	<i>Agrostis capillaris</i>	Common Bent	4
Shrub %	10	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	4

Gramin %	60	<i>Erica cinerea</i>	Bell Heather	4
Herb	15	<i>Rhytiadelphus squarrosus</i>	Springy Turf-moss	4
Bryoph %	80	<i>Luzula multiflora</i>	Heath Wood-rush	3
Lichen %	0	<i>Calluna vulgaris</i>	Heather	3
Bare %	0	<i>Viola palustris</i>	Marsh Violet	3
Veg cm	50	<i>Vaccinium myrtillus</i>	Bilberry	3
Microtopo	Low	<i>Veronica officinalis</i>	Heath Speedwell	2
		<i>Polygala serpyllifolia</i>	Heath Milkwort	1

No	30	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	6
8figGR	NH04870207	<i>Myrica gale</i>	Bog-myrtle	5
Altitude	447m	<i>Calluna vulgaris</i>	Heather	5
Aspect	SW	<i>Erica tetralix</i>	Cross-leaved Heath	4
Tree %	0	<i>Eriophorum angustifolium</i>	Common Cottongrass	4
Shrub %	45	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	4
Gramin %	50	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	4
Herb	10	<i>Drosera rotundifolia</i>	Round-leaved Sundew	4
Bryoph %	80	<i>Sphagnum papillosum</i>	Papillose Bog-moss	4
Lichen %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	3
Bare %	0	<i>Potentilla erecta</i>	Tormentil	3
Veg cm	40	<i>Pleurozia purpurea</i>	Purple Spoonwort	3
Microtopo	Low			

No	31	Scientific Name	Common Name	DOMIN
NVC	M15	<i>Hylocomium splendens</i>	Glittering Wood-moss	7
8figGR	NH04470369	<i>Vaccinium myrtillus</i>	Bilberry	6
Altitude	539m	<i>Molinia caerulea</i>	Purple Moor-grass	6
Aspect	S	<i>Erica tetralix</i>	Cross-leaved Heath	5
Tree %	0	<i>Potentilla erecta</i>	Tormentil	4
Shrub %	30	<i>Juncus squarrosus</i>	Heath Rush	4
Gramin %	60	<i>Rhytiadelphus squarrosus</i>	Springy Turf-moss	4
Herb	5	<i>Erica cinerea</i>	Bell Heather	3
Bryoph %	80	<i>Festuca rubra agg.</i>	Red Fescue aggregate	3
Lichen %	0	<i>Trichophorum germanicum</i>	Common Deergrass	3
Bare %	0	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	3
Veg cm	40	<i>Calluna vulgaris</i>	Heather	2
Microtopo	Moderate			

No	32	Scientific Name	Common Name	DOMIN
NVC	M25a	<i>Molinia caerulea</i>	Purple Moor-grass	7
8figGR	NH04710387	<i>Calluna vulgaris</i>	Heather	5
Altitude	523m	<i>Trichophorum germanicum</i>	Common Deergrass	5
Aspect	S	<i>Pleurozia purpurea</i>	Purple Spoonwort	5
Tree %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	4

No	32	Scientific Name	Common Name	DOMIN
Shrub %	25	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	4
Gramin %	65	<i>Erica tetralix</i>	Cross-leaved Heath	3
Herb	5	<i>Potentilla erecta</i>	Tormentil	3
Bryoph %	30	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	3
Lichen %	0	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Bare %	0			
Veg cm	30			
Microtopo	Moderate			

No	33	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	6
8figGR	NH04980389	<i>Calluna vulgaris</i>	Heather	5
Altitude	524m	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	5
Aspect	S	<i>Empetrum nigrum</i> <i>subsp. hermaphroditum</i>	Alpine Crowberry	4
Tree %	0	<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	4
Shrub %	15	<i>Trichophorum germanicum</i>	Common Deergrass	4
Gramin %	60	<i>Potentilla erecta</i>	Tormentil	4
Herb	15	<i>Dactylorhiza purpurella</i>	Northern Marsh-orchid	4
Bryoph %	80	<i>Carex panicea</i>	Carnation Sedge	3
Lichen %	0	<i>Narthecium ossifragum</i>	Bog Asphodel	3
Bare %		<i>Pleurozium schreberi</i>	Red-stemmed Feather-moss	3
Veg cm	30	<i>Eriophorum angustifolium</i>	Common Cottongrass	2
Microtopo	Moderate	<i>Polygala serpyllifolia</i>	Heath Milkwort	2

No	34	Scientific Name	Common Name	DOMIN
NVC	M15	<i>Sphagnum capillifolium</i>	Acute-leaved bog-moss	6
8figGR	NH05130381	<i>Calluna vulgaris</i>	Heather	5
Altitude	599m	<i>Eriophorum angustifolium</i>	Common Cottongrass	5
Aspect	W	<i>Trichophorum germanicum</i>	Common Deergrass	5
Tree %	0	<i>Molinia caerulea</i>	Purple Moor-grass	4
Shrub %	25	<i>Potentilla erecta</i>	Tormentil	4
Gramin %	40	<i>Narthecium ossifragum</i>	Bog Asphodel	4
Herb	10	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	4
Bryoph %	60	<i>Pleurozia purpurea</i>	Purple Spoonwort	4
Lichen %	0	<i>Erica tetralix</i>	Cross-leaved Heath	3
Bare %	0	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Veg cm	40	<i>Pinguicula vulgaris</i>	Common Butterwort	2
Microtopo	Moderate	<i>Cladonia portentosa</i>	N/A	2
		<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	2

No	35	Scientific Name	Common Name	DOMIN
NVC	Cliff Face	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	7
8figGR	NH05500384	<i>Calluna vulgaris</i>	Heather	5

No	35	Scientific Name	Common Name	DOMIN
Altitude	253m	<i>Juncus squarrosus</i>	Heath Rush	5
Aspect	W	<i>Trichophorum germanicum</i>	Common Deergrass	4
Tree %	0	<i>Molinia caerulea</i>	Purple Moor-grass	4
Shrub %	15	<i>Juncus squarrosus</i>	Heath Rush	4
Gramin %	60	<i>Narthecium ossifragum</i>	Bog Asphodel	2
Herb	3	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
Bryoph %	40	<i>Potentilla erecta</i>	Tormentil	2
Lichen %	0	<i>Pleurozia purpurea</i>	Purple Spoonwort	2
Bare %	10			
Veg cm	20			
Microtopo	Low			

No	36	Scientific Name	Common Name	DOMIN
NVC	W25	<i>Pteridium aquilinum</i>	Bracken	10
8figGR	NH05910186	<i>Hylocomium splendens</i>	Glittering Wood-moss	5
Altitude	199m	<i>Galium saxatile</i>	Heath Bedstraw	3
Aspect	S	<i>Potentilla erecta</i>	Tormentil	3
Tree %	0	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	3
Shrub %	0	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	3
Gramin %	0	<i>Viola palustris</i>	Marsh Violet	3
Herb	10	<i>Galium saxatile</i>	Heath Bedstraw	3
Bryoph %	20	<i>Potentilla erecta</i>	Tormentil	3
Lichen %	0	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	3
Bare %	0	<i>Viola palustris</i>	Marsh Violet	3
Veg cm	160			
Microtopo	Moderate			

No	37	Scientific Name	Common Name	DOMIN
NVC	M25	<i>Molinia caerulea</i>	Purple Moor-grass	8
8figGR	NH05970181	<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss	5
Altitude	244m	<i>Myrica gale</i>	Bog-myrtle	5
Aspect	S	<i>Trichophorum germanicum</i>	Common Deergrass	4
Tree %	0	<i>Erica tetralix</i>	Cross-leaved Heath	4
Shrub %	0	<i>Potentilla erecta</i>	Tormentil	4
Gramin %	80	<i>Narthecium ossifragum</i>	Bog Asphodel	3
Herb	5	<i>Succisa pratensis</i>	Devil's-bit Scabious	3
Bryoph %	30	<i>Sphagnum papillosum</i>	Papillose Bog-moss	3
Lichen %	0	<i>Eriophorum angustifolium</i>	Common Cottongrass	3
Bare %	0	<i>Carex echinata</i>	Star Sedge	2
Veg cm	40	<i>Hylocomium splendens</i>	Glittering Wood-moss	2
Microtopo	Moderate			

No	38	Scientific Name	Common Name	DOMIN
NVC	U20	<i>Molinia caerulea</i>	Purple Moor-grass	7
8figGR	NH06560245	<i>Calluna vulgaris</i>	Heather	6
Altitude	482m	<i>Erica cinerea</i>	Bell Heather	5
Aspect	S	<i>Potentilla erecta</i>	Tormentil	4
Tree %	0	<i>Succisa pratensis</i>	Devil's-bit Scabious	4
Shrub %	40	<i>Hypnum jutlandicum</i>	Heath Plait-moss	3
Gramin %	50	<i>Vaccinium myrtillus</i>	Bilberry	2
Herb	5	<i>Pteridium aquilinum</i>	Bracken	2
Bryoph %	10	<i>Blechnum spicant</i>	Hard-fern	2
Lichen %	0	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	2
Bare %				
Veg cm	30			
Microtopo	Moderate			

No	39	Scientific Name	Common Name	DOMIN
NVC	M17	<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	8
8figGR	NH05000375	<i>Sphagnum palustre</i>	Blunt-leaved Bog-moss	6
Altitude	614m	<i>Molinia caerulea</i>	Purple Moor-grass	5
Aspect	flat	<i>Narthecium ossifragum</i>	Bog Asphodel	5
Tree %	0	<i>Sphagnum papillosum</i>	Papillose Bog-moss	5
Shrub %	5	<i>Sphagnum fallax</i>	Flat-topped Bog-moss	5
Gramin %	90	<i>Potentilla erecta</i>	Tormentil	4
Herb %	15	<i>Eriophorum angustifolium</i>	Common Cottongrass	3
Bryoph %	65	<i>Trichophorum germanicum</i>	Common Deergrass	3
Lichen %	0	<i>Festuca rubra</i>	Red Fescue	3
Bare %	0	<i>Sphagnum capillifolium</i>	Acute-leaved bog-moss	3
Veg cm	60	<i>Calluna vilagris</i>	Heather	2
Microtopo	Moderate	<i>Polygala serpyllifolia</i>	Heath Milkwort	2
		<i>Viola palustris</i>	Marsh Violet	2
		<i>Aulacomnium palustre</i>	Bog Bead-moss	2

No	40	Scientific Name	Common Name	DOMIN
NVC	U4	<i>Hylocomium splendens</i>	Glittering Wood-moss	7
8figGR	NH05420449	<i>Agrostis capillaris</i>	Common Bent	5
Altitude	620m	<i>Festuca rubra</i>	Red Fescue	4
Aspect	W	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	4
Tree %	0	<i>Festuca vivipara</i>	Viviparous Fescue	4
Shrub %	3	<i>Galium saxatile</i>	Heath bedstraw	4
Gramin %	70	<i>Rhytidiadelphus loreus</i>	Little Shaggy-moss	4
Herb %	10	<i>Molinia caerulea</i>	Purple Moor-grass	3
Bryoph %	60	<i>Carex echinata</i>	Star sedge	3
Lichen %	0	<i>Potentilla erecta</i>	Tormentil	3
Bare %	0	<i>Viola palustris</i>	Marsh Violet	3
Veg cm	50	<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	3

Microtopo	Moderate	<i>Pleurozium schreberi</i>	Red-Stemmed Feather-moss	3
		<i>Juncus squarrosus</i>	Heath Rush	2
		<i>Vaccinium myrtillus</i>	Bilberry	2
		<i>Vaccinium vitis idaea</i>	Bearberry	1

No	41	Scientific Name	Common Name	DOMIN
NVC	H21	<i>Calluna vilagris</i>	Heather	8
8figGR	NH05380461	<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss	7
Altitude	535m	<i>Pleurozium schreberi</i>	Red-Stemmed Feather-moss	6
Aspect	SW	<i>Hylocomium splendens</i>	Glittering Wood-moss	6
Tree %	0	<i>Vaccinium myrtillus</i>	Bilberry	5
Shrub %	70	<i>Potentilla erecta</i>	Tormentil	4
Gramin %	5	<i>Sphagnum capillifolium</i>	Acute-leaved bog-moss	3
Herb %	10	<i>Cladonia portentosa</i>	N/A	3
Bryoph %	70	<i>Carex panicea</i>	Carnation sedge	3
Lichen %	5	<i>Blechnum spicant</i>		2
Bare %	15			
Veg cm	50			
Microtopo	High			

G TARGET NOTE PLAN



Legend

NVC Survey Boundary

Project Footprint

Target Note Features

Bog pools

Cliff face

Dried bog pools

Dwarf juniper

Eroded peat

Great sundew

M10 mire

M6b mire

Mature Larch Stand

Rhododendron shrub

Rhododendron stand

Do not scale this map

Client
Gikes

Project
Loch Fearn Pumped Storage

Title
Target Note Plan

Status			DRAFT
Drawing 678092-GIS008	Revision -	Date 16 Nov 2023	
Drawn SD	Checked XX	Approved XX	

Scale
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Rev	Date	Amendment	Initials
-	-	-	-

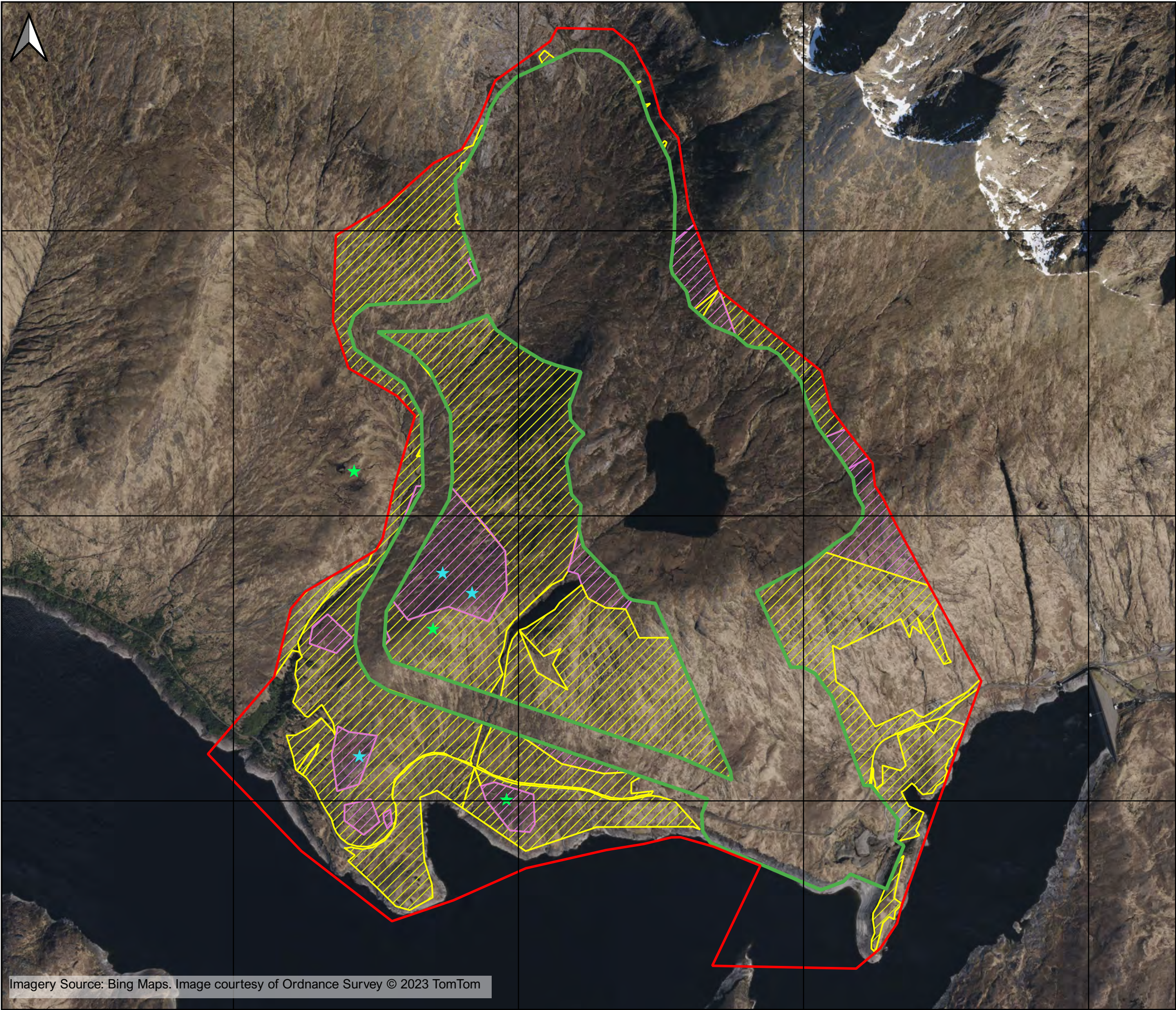
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H TARGET NOTES

Target Note Number	Feature	Description
TN01	Cliff Face	Rock face. Vegetation on ledges consistent with surrounding H15 wet heath
TN02	M10 mire	Small bryophyte dominated flush with calcareous influence
TN03	Cliff Face	Rock faces, tiered, with scattered M15 across ledges
TN04	M10 mire	Small M10 flush surrounding minor watercourse
TN05	Bog pools	Measures c. 15x5m
TN06	M10 mire	Small M10 flush surrounding minor watercourse
TN07	Bog pools	M1 bog pool
TN08	Bog pools	M1 bog pool
TN09	Bog pools	M1 bog pools
TN10	Bog pools	M1 bog pools
TN11	Eroded peat	Area of partially eroded peat 40x30m. Hag depth up to 2m. Veg present at base of hags but absent from slopes
TN12	Dwarf juniper (Juniperus communis)	Present within M15c wet heath
TN13	M6b mire	Small M6b flush here
TN14	Rhododendron shrub	Two small shrubs beside watercourse
TN15	Bog pools	M1 bog pool with standing water
TN16	Eroded peat	Area with peat hags within bog
TN17	Rhododendron shrub	Sapling rhododendron
TN18	Bog pools	Few small, evaporated bog pools
TN19	Rhododendron shrub	Rhododendron shrub young
TN20	Eroded peat	Small area of peat hag less than 1m depth
TN21	Eroded peat	Small area of peat hagg, 15x 10m
TN22	M10 mire	Small M10 flush surrounding minor watercourse
TN23	Great sundew	Within dried bog pool
TN24	Bog pools	M1 bog pools ranging from small 1x1m to long 10x2m
TN25	Great sundew	Large population
TN26	M10 mire	Small M10 flush
TN27	M10 mire	Small M10 flush
TN28	Great sundew	Large pop along burn
TN29	Eroded peat	Peat hags up to 1.5m in depth
TN30	M10 mire	M10 mire
TN31	Bog pools	M1 bog pool
TN32	Dried bog pools	M1 bog pool dried up
TN33	M10 mire	Small M10 flush surrounding minor watercourse
TN34	Rhododendron shrub	Rhododendron sapling
TN35	Bog pools	M1 bog pool
TN36	M10 mire	Small M10 flush surrounding minor watercourse

Target Note Number	Feature	Description
TN37	Bog pools	Bog pools
TN38	Eroded peat	Eroded area with exposed peat
TN39	Bog pools	M1 Bog pool
TN40	Eroded peat	Area of eroded peat at head of slope. Minor overhang measuring 1m deep, 4m wide and 20m long
TN41	Great sundew	Large population
TN42	Rhododendron shrub	Rhododendron sapling
TN43	Rhododendron shrub	Rhododendron sapling
TN44	Eroded peat	Peat hag area at top of hill with unvegetated bog pools
TN45	Rhododendron shrub	Single rhododendron in watercourse corridor
TN46	Mature Larch Stand	Stand of mature larch trees
TN47	Rhododendron stand	Lots of rhododendron in this area around pylon
TN48	Bog pools	Bog pool M1
TN49	Dried bog pools	Dried bog pool
TN50	Eroded peat	Eroded peat and bog pools

I PEATLAND RESTORATION AND OPPORTUNITIES PLAN



Imagery Source: Bing Maps. Image courtesy of Ordnance Survey © 2023 TomTom

Legend

- NVC Survey Boundary
- Project Footprint
- Peatland Habitat outwith Project Footprint Suitable for Enhancement**
 - Unlikely to be Prioritised as Priority Peatland (M15, M20, M25)
 - Likely to be Considered Priority Peatland (M17)
 - Bog Pools Considered to be Priority Peatland Communities
 - Areas of Eroded Peat (Peat Hags)

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Client
Gikes

Project
Loch Fearna Pumped Storage

Title
Peatland Restoration and Opportunities Plan

Status		
FINAL		
Drawing 678092-GIS010	Revision -	Date 28 Nov 2023
Drawn SD	Checked MM	Approved MM

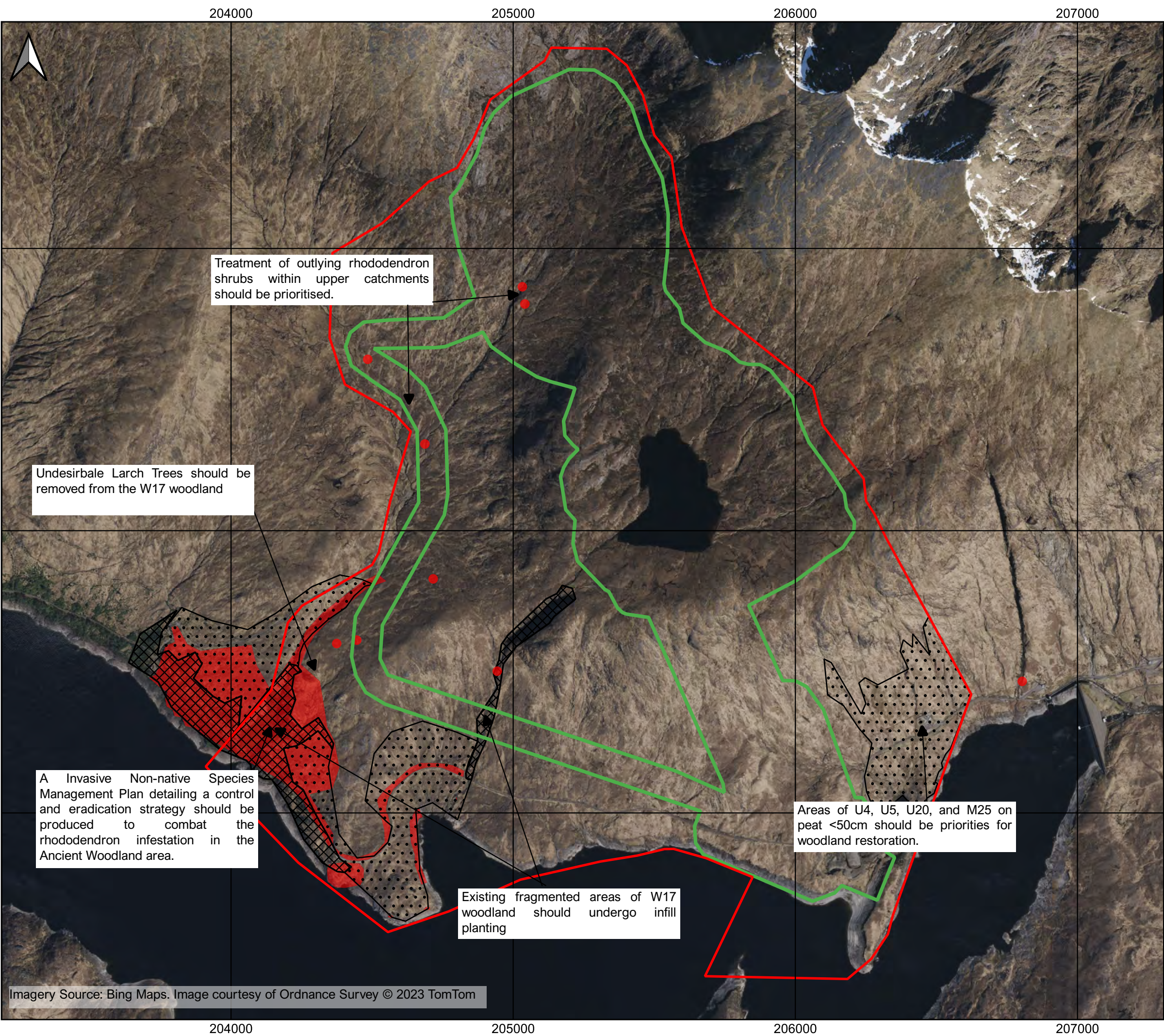
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Rev	Date	Amendment	Initials
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J WOODLAND RESTORATION AND OPPORTUNITIES PLAN



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Legend

- Project Footprint
- Rhododendron Stands
- Individual Rhododendron Shrubs

Woodland Restoration and Expansion Opportunities

- Existing Woodland Cover
- Suitable Ground for Woodland Expansion

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Client
Gikes

Project
Loch Fearna Pumped Storage

Title
Woodland Restoration and Opportunities Plan

Status			FINAL
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Rev	Date	Amendment	Initials
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