

Loch Kemp Storage - EIA Report

Appendix 19.3: Forest to Bog Restoration Proposals

November 2023

ash



ash design + assessment
Suite 2/3, Queens House
19 St Vincent Place
Glasgow, G1 2DT

Tel: 0141 227 3388
Fax: 0141 227 3399

Email: info@ashglasgow.com
Web: www.ashdesignassessment.com

Contents

1. Forest to Bog Restoration	2
1.1. Summary	2
1.2. Introduction	4
1.3. Site Description	4
1.4. Legislation, Policy & Guidance	4
1.5. Woodland Survey	6
1.6. Findings	8
1.7. Conclusion	9

List of Tables

Table 1: Summary of Top Heights.....	7
Table 2: Summary of Proposed Forest to Bog Restoration Area	7

List of Figures (included in Annex 1)

Figure 19.3.1 - Current Species Map

Figure 19.3.2 - Peat Depth Map

List of Annexes

Annex 1: Figures

Annex 2: Miscellaneous Photographs

Annex 3: ESC_NH474154 Main Tree Species.

Annex 4: ESC_NVC_NH474154 - Native Woodland

1. Forest to Bog Restoration

1.1. Summary

- 1.1.1. Crosscut Forestry Ltd was commissioned by Statera Energy to assess the suitability of an area of woodland within the Whitebridge Plantation on Dell Estate for conversion from forest to bog as part of the proposed outline Habitat Management Plan (HMP) (non-SAC) (see **Volume 4, Appendix 10.7** of the EIA Report) for the proposed Loch Kemp Pump Storage Project near Whitebridge, Inverness-shire (Hereafter referred to as ‘the Proposed Development’).
- 1.1.2. Four woodland sub-compartments (11b, 11b1 part of, 11d and 11e) extending to approximately 9.76 hectares (ha) and located on the southern edge of Loch Paiteag within the plantation (see **Figure 19.3.1 - Current Species Map**) have been identified as being potentially suitable for restoration to peatland due to the presence of adjacent bog habitat (M17-20 modified bog) and deep peat.
- 1.1.3. It is proposed that the forest to bog restoration areas would compensate for the loss of blanket bog and other peatland habitats arising from the construction of the Proposed Development.
- 1.1.4. The proposed restoration area is part of the extensive Whitebridge Plantation, which is a diverse productive coniferous woodland of various species and age classes managed with the principal objective of producing a commercial crop of timber and extending to approximately 237.0 ha.
- 1.1.5. The compartments proposed for restoration have a generally low Yield Class (mostly LP YC6) for the species due to the fact that they are mostly located on nutrient poor blanket bog where peat depths regularly exceed 1.0m.
- 1.1.6. The initial survey area was reduced to two areas (M & N) on **Figure 19.3.2 - Peat Depth Map** extending to 5.76ha following a peat depth survey which recorded areas of sub-compartment 11b where peat depths of 20 – 50cm were recorded.
- 1.1.7. Forest to bog restoration is in effect woodland removal and as such must be assessed against the requirements of the Scottish Governments Control of Woodland Removal Policy (2009) (CoWRP) and Forestry Commission guidance ‘Deciding future management options for afforested deep peatland’ (2015).
- 1.1.8. The policy does presume to protect all woodland, but woodland removal is acceptable where certain criteria are met.
- 1.1.9. The policy states that compensatory planting is required in most cases but removal without a requirement for compensatory planting, is appropriate where it would contribute significantly to:
 - enhancing priority habitats and their connectivity;
 - enhancing populations of priority species;
 - enhancing nationally important landscapes, designated historic environments and geological Sites of Special Scientific Interest (SSSI);
 - improving conservation of water or soil resources; or
 - public safety.

- 1.1.10. When assessing the woodland to be removed against the Forestry Commission's guidance 'Deciding future management options for afforested deep peat' (2015), the very low yield class and peat depth on-site indicate that it is not suitable for a second rotation and, with the wider environmental benefits of restoration of Blanket Bog habitats, which are a priority habitat, the proposal to fell without the need for restocking is appropriate at this site.
- 1.1.11. As a result, the requirements of CoWRP would be met as the deforested area would be restored to peatland and integrated into the wider site HMP for the Proposed Development, therefore significantly enhancing a priority habitats.

1.2. Introduction

- 1.2.1. Crosscut Forestry Ltd has been instructed by Statera Energy (UK) Limited (SEL) (“the Developer”) on behalf of Loch Kemp Storage Ltd. (the Applicant) to produce this assessment to provide supporting information for a planning application for the construction of the Loch Kemp Pump Storage Project (hereafter referred to as the Proposed Development), located on Dell Estate near Whitebridge, Inverness-shire.
- 1.2.2. This assessment identifies the potential impact proposed forest to bog restoration and assesses the proposals against the requirements of the Scottish Governments Control of Woodland Removal Policy (2009) (CoWRP) and associated Scottish Forestry guidance ‘Deciding future management options for afforested deep peatland’ (2015).
- 1.2.3. Cameron Ross of Crosscut Forestry Ltd undertook a site visit on 2nd October 2023 to assess the extent and condition of the woodland and to record peat depths across the survey area.

1.3. Site Description

- 1.4. The proposed restoration site is located within compartment 11 of the Whitebridge Plantation (see **Volume 4, Appendix 19 – 1:the Dell Estate, Whitebridge Plantation, Woodland Management Plan 2022 - 2041**, immediately south of Loch Paiteag at an elevation of 220m and is currently dominated by Lodgepole Pine (*Pinus contorta*) and the occasional group of Serbian Spruce (*Picea omorika*) planted in 1958. The woodland which would be directly affected is described specifically in paragraphs 1.5.6 – 1.5.13.

1.5. Legislation, Policy & Guidance

- 1.5.1. The purpose of this report is to provide supporting information to the Environmental Impact Assessment for the planning application and to aid efficient decision-making in relation to the proposed development by ensuring that the applicant considers the existing trees and woodlands during the development process in adherence to the relevant guidance and statutory and non-statutory regulations.
- 1.5.2. Forest to bog restoration proposals were not being considered at the time of initial scoping for the Proposed Development and therefore no specific pre application consultation advice relating to forest to bog restoration was received from either Scottish Forestry or Highland Council. However, both statutory bodies will expect the forest to bog proposals to be assessed against the requirements of the Scottish Government’s Policy on ‘Control of Woodland Removal’ (2009) (CoWRP) and Scottish Forestry guidance ‘Deciding future management options for afforested deep peat’ (2015).
- 1.5.3. The Scottish Government’s Policy on ‘Control of Woodland Removal’ (2009) and Policy 6, Woodland & Trees of the National Planning Framework 4 (NPF4) includes a presumption in favour of protecting woodland. Removal should only be permitted where it would achieve significant and clearly defined additional public benefits.
- 1.5.4. Where woodland is removed in association with a Proposed Development, developers will generally be expected to provide compensatory planting. The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the 'Control of Woodland Removal Policy, and this should be considered when preparing development plans and determining planning applications.
- 1.5.5. However, for woodland on deep peats, the greenhouse gas and wider environmental implications of future management are more significant than on other sites. For this reason, Scottish Forestry are likely to support applications for felling without conventional restocking on peatland sites that are less suitable for second rotation forestry or where there is a clear benefit of restoration.

- 1.5.6. The Forestry Commission Practice Guide - Deciding future management options for afforested deep peat (2015) explains the factors to consider when seeking approval for felling on peatland habitats and identifies the criteria where restoration to peatland is preferred over conventional restocking.
- 1.5.7. The following legislation, policy and guidance has been considered in the assessment:
- Scottish Forestry Strategy 2019 - 2029
 - Scottish Governments Policy on the Control of Woodland Removal (2009)
 - Forestry and Land Management (Scotland) Act 2018 - felling[2]
 - National Planning Framework 4. Policy 6
 - Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017[3] - compensatory planting
 - Forestry Commission Practice Guide - Deciding future management options for afforested deep peat (2015)
 - Forestry Commission Guidance Note – Forests and Peatland Habitats (July 2000)
- 1.5.8. Forestry in Scotland is regulated by Scottish Forestry (SF) who govern the management of woodlands including planting and removal of trees through legislation, policy, and guidance to ensure the vision and objectives of the Scottish Forestry Strategy (2019) are met. The Strategy considers issues including climate change, timber production and biodiversity. Climate change management and mitigation is a key part of Scottish Government Policy and forestry is seen as having an essential role to play in this respect.
- 1.5.9. The control of timber harvesting is normally administered under the Forestry and Land Management (Scotland) Act 2018) and is the basis for the regulation of felling through the felling licence system. The proposed felling is part of a development, therefore the consenting process for this is covered by the Town and Country Planning (Scotland) Act 1997 (as amended).
- 1.5.10. The National Planning Framework 4 (NPF4) introduced in 2023 is a material policy consideration with the key intention of protection and expanding forests, woodland and trees with Policy 6 of the Framework stating that,
- 1.5.11. a) Development proposals that enhance, expand, and improve woodland and tree cover will be supported.
- 1.5.12. B) Development proposals will not be supported where they will result in
- any loss of ancient woodlands, ancient and veteran trees, or adverse impact on their ecological condition
 - adverse impacts on native woodlands, hedgerows and individual trees of high biodiversity value, or identified for protection in the Forestry and Woodland Strategy
 - fragmenting or severing woodland habitats, unless appropriate mitigation measures are identified and implemented in line with the mitigation hierarchy
 - conflict with Restocking Direction, Remedial Notice or Registered Notice to Comply issued by Scottish Forestry

- development proposals involving woodland removal will only be supported where they will achieve significant and clearly defined additional public benefits in accordance with relevant Scottish Government policy on woodland removal. Where woodland is removed, compensatory planting will most likely be expected to be delivered
 - development proposals on sites which include an area of existing woodland or land identified in the Forestry and Woodland Strategy as being suitable for woodland creation will only be supported where the enhancement and improvement of woodlands and the planting of new trees on the site in accordance with the Forestry and Woodland Strategy) are integrated into the design.
- 1.5.13. The CoWRP includes a presumption in favour of protecting woodland. Removal should only be permitted where it would achieve significant and clearly defined additional public benefits. Where woodland is removed in association with development, developers will generally be expected to provide compensatory planting except in cases where the woodland is situated on deep peat. Scottish Forestry are likely to support applications for felling without conventional restocking on peatland sites that are less suitable for second rotation forestry or where there is a clear benefit of restoration.
- 1.5.14. The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the 'Control of Woodland Removal Policy, and this should be considered when preparing development plans and determining planning applications.

1.6. Woodland Survey

Methodology

- 1.6.1. During the site visit, the woodland areas proposed for restoration to peatland (**Figure 19 – 3 -1: Current Species Map**) were surveyed with the aim of confirming that species and age classes reflected those in the Sub Compartment Database of the Dell Estate Whitebridge Plantation Long Term Forest Plan 2022 – 41.
- 1.6.2. Measurements of the height of the trees were taken using a Suunto clinometer. The height measurements were used to calculate the general yield class (growth rates) of the stands in accordance with Forestry Commission Booklet 48 - Yield Models for Forest Management. There was a total of 17 sample plots where the height of the largest diameter tree for each species was measured.
- 1.6.3. Peat depths were recorded at approximately 50m intervals across the site although areas of windblow caused variations in the spacing between sample locations. Thirty-nine peat depth samples were recorded to inform on peat depth across the site.
- 1.6.4. Areas where the peat depth was <50cm were excluded from further survey reducing the total area available for restoration to 5.76ha (**see Areas M & N in Figure 19.3.2: Peat Depth Map**).
- 1.6.5. The existing crop data and the Ecological Site Classification (ESC) tool were used to assess the sites' potential for tree growth as per Scottish Forestry Practice Guide - Deciding Future Management Options For Afforested Deep Peatland.

Woodland Description

- 1.6.6. The proposed forest to bog restoration area was planted in 1958 with a main crop of South Coastal and Skeena River Lodgepole Pine (LP) and occasional groups of Serbian Spruce (omorika) with Scots Pine (*Pinus sylvestica*) (SP) on adjacent drier knolls (**Figure 19.3.1: Current Species Map**).
- 1.6.7. There are areas of open ground within the proposed restoration area M where non-native conifer natural regeneration is establishing on Blanket Bog (see **Annex 2, Image 1**).

- 1.6.8. Single furrow ploughing at approximately 1.8m centres was carried out to aid establishment and cross drains were also installed at irregular intervals to enhance drainage (see **Annex 2, Images 2 & 3**).
- 1.6.9. Peat depths across areas M & N are consistently >50cm with most sample locations exceeding 1.0m of peat. There is evidence on site of historic peat cutting throughout Area M (see **Annex 2, Images 4 & 5**) but no evidence of peat cracking was recorded.
- 1.6.10. Ground vegetation was mostly shaded out by the tree canopy but where light conditions allowed, ground vegetation included Sphagnum, Deer Grass (*Trichophorum germanicum*), Purple Moor Grass (*Molinia caerulea*), and Heather (*Calluna vulgaris*) indicating blanket bog habitat with a very poor nutrient regime.
- 1.6.11. Growth rates are generally poor to very poor on the deep peat due to poor site nutrition and waterlogging. Within Area N LP are dying as a result of waterlogging due to blocked drainage ditches (see **Annex 2, Image 6 & 7**). Windblow occurs frequently throughout the survey area.
- 1.6.12. General Yield Class (YC) calculations for the crop identified the LP at YC6. A Yield Class model was not available for the omorika but growths rates on the deep peat were clearly poor and with a Top Height of approximately 14m Yield Class would be expected to be <8. These are exceptionally poor growth rates and are indicative of the low nutritional value of the soil.
- 1.6.13. The site has a DAMS score of 13 - 14. DAMS (Detailed Aspect Method of Scoring) is a measure of the windiness of a site calculated from various criteria including elevation, aspect, and exposure. The DAMS score for the site is not restrictive for tree growth.

TABLE 1: SUMMARY OF TOP HEIGHTS

Top Height (LP)	Top Height (Omorika)
19.0m	14.0m

TABLE 2: SUMMARY OF PROPOSED FOREST TO BOG RESTORATION AREA

Location	Species	Age	Yield Class	Dams score	Average Peat Depth	Area (ha)
M	LP	65	6	13	>1.0	3.39
	LP	65	6	13	0.5 – 1.0	0.59
	OG	n/a	n/a	13	>1.0	0.58
	OG	n/a	n/a	13	0.5 – 1.0	0.32
N	LP	65	6	13	>1.0	0.77
	Omorika	65	<8*	13		0.11
					Total	5.76

*No yield model available for Omorika and only a very small sample of trees to survey

1.7. Findings

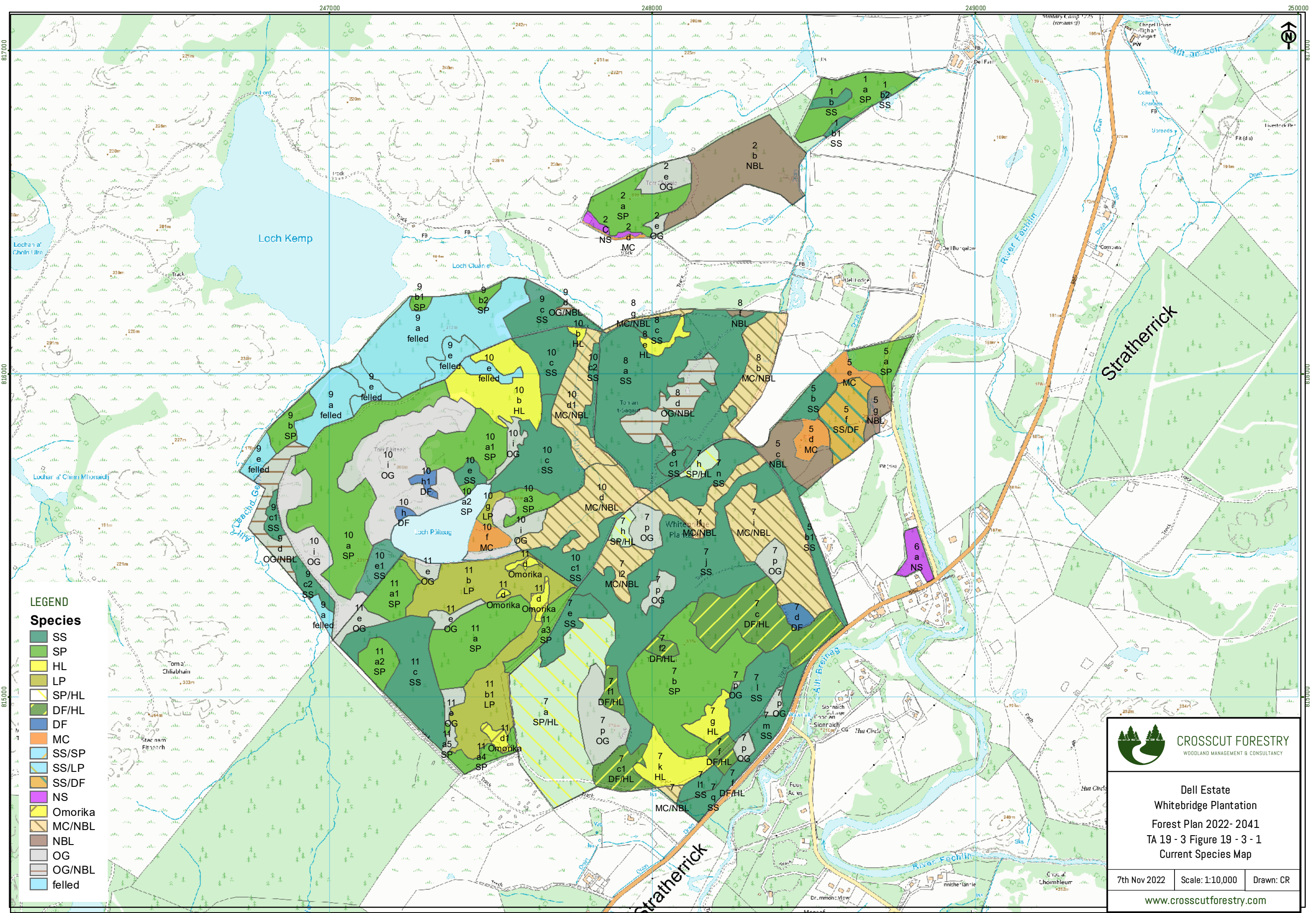
- 1.7.1. In summary, if the proposed forest to bog restoration were to proceed this would result in the removal of 5.76ha of woodland to be restored to peatland habitats and therefore the CoWRP is a material consideration.
- 1.7.2. The policy included a strong presumption against removing the following types of woodland:
- Ancient semi-natural woodland;
 - Woodland integral to the value of designated natural conservation sites;
 - Woodland listed within the Inventory of Gardens and Designed Landscapes;
 - Woodland critical to water catchment management or erosion control;
 - Woodlands listed as “Plantations on Ancient Woodland Sites: (PAWS); and
 - Woodland removal where it would lead to fragmentation or disconnection of important forest habitat networks.
- 1.7.3. None of the above are applicable to the proposed forest to bog restoration areas and, although the policy does presume to protect woodland, removal of other woodland types is acceptable where certain criteria are met.
- 1.7.4. Compensatory planting is required in most cases but removal without a requirement for compensatory planting, can be appropriate for woodland on deep peats, where the greenhouse gas and wider environmental implications of future management are significant.
- 1.7.5. The Forestry Commission guidance ‘Deciding future management options for afforested deep peat’ (2015) states that “we (Forestry Commission Scotland) are likely to support applications for felling without conventional restocking on peatland sites that are less suitable for second rotation forestry or where there is a clear benefit of restoration”. These areas include:
- Habitats designated as qualifying features in the UK Biodiversity Action Plan, or on Natura sites, Ramsar sites, Sites of Special Scientific Interest (SSSIs) or National Nature Reserves (NNRs);
 - Sites or parts of sites where restocking is likely to adversely affect the functional connectivity (hydrology) of an adjacent Annex 1 peatland habitat (as defined in the EU Habitats Directive), or a habitat associated with one; and
 - Sites where deforestation would prevent the significant net release of greenhouse gases.
- 1.7.6. The proposed restoration areas do not meet the criteria outlined above and therefore require a step-by-step approach outlined in the guidance to decide their future management.
- 1.7.7. This approach uses current crop data, and the Forest Research decision support tool Ecological Site Classification (ESC) to provide guidance on the suitability of sites for the growth of key tree species, but the guidance expects this data to be used in conjunction with site specific data to assess the site’s potential for tree growth.
- 1.7.8. The guidance note suggests ESC should show sites as suitable or very suitable for a species for conventional restocking to be undertaken with YC8 for Sitka Spruce (SS) being recognised as a minimum.

- 1.7.9. Based on Forestry Commission soil classification 9e (*Trichophorum*, *Calluna*, *Eriophorum*, *Molinia* Bog) with a Very Poor VP2 Nutrient status, ESC data for the site shows the area as unsuitable for Sitka Spruce with the Soil Nutrient Regime being the limiting factor (**Annex 3, NH474154 Main Tree Species**).
- 1.7.10. The growth rate of the current crop LP at YC6 supports the ESC results with ESC indicating the site as marginal for LP with a predicted YC5.
- 1.7.11. Significant ground disturbance in the form of mounding and drainage with an appropriate fertiliser regime would be required to ensure satisfactory establishment and enhanced growth rates for a second rotation crop resulting in soil disturbance and a loss of soil carbon.
- 1.7.12. Where sites are identified as being unsuitable for conventional restocking the guidance states that they should be considered for conversion to peatland edge woodland where ESC shows the site has potential for woodland providing >20% canopy cover.
- 1.7.13. ESC indicates that the site is marginal at best for W4 – Birch with Purple Moor Grass Peatland Edge Woodland (**Annex 4, ESC_NVC_NH474154 - Native Woodland**).
- 1.7.14. When considering local site conditions including poor growth rates of the current crop, Soil Nutrient Regime, and the opportunities the site offers through ground smoothing and drain blocking to reverse damage to priority Blanket Bog habitats, the removal of these woodland areas is appropriate within the context of the 'Control of Woodland Removal Policy'.

1.8. Conclusion

- 1.8.1. In conclusion, of the 9.76ha initially identified as having potential for forest to bog restoration, 5.76ha (areas M & N shown on **Figure 19.3.2: Peat Depth Map**) have been identified as being suitable when assessed against the requirements of Scottish Forestry Practice Guide - Deciding Future Management Options For Afforested Deep Peatland.
- 1.8.2. The Practice Guide suggests conventional restocking should be carried out where the current crop, ESC and peat data indicate that the site will clearly produce good growth in a second rotation (i.e. the site is shown as suitable/very suitable and gives an estimated Yield Class >8 for Sitka Spruce either pure or in mixture).
- 1.8.3. The ESC results identify the site as unsuitable for a second rotation crop of Sitka Spruce estimating a Yield Class of 5 with the Soil Nutrient Regime being the limiting factor.
- 1.8.4. If not suitable for Sitka Spruce, the site should be assessed for its potential to support W4- Native Woodland.
- 1.8.5. ESC results indicate that the site is marginal for W4 – Native Woodland.
- 1.8.6. Areas M & N have peat depths consistently >1.0m and the growth rate of the previous crop Yield Class 6 Lodgepole Pine is poor which along with existing ground vegetation demonstrates the poor nutrient status of the site and supports the ESC results.

Annex 1: Figures



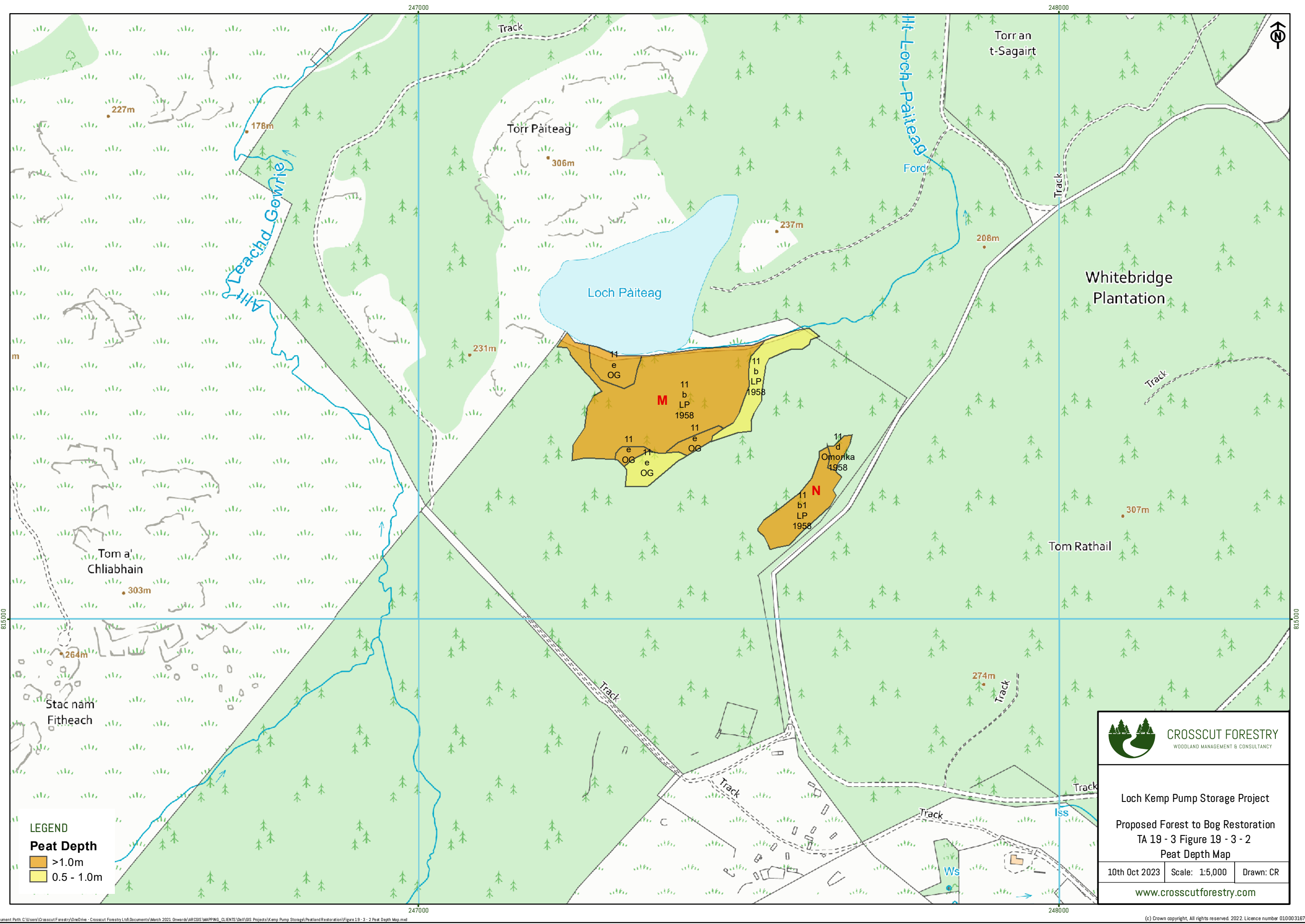
- LEGEND**
- Species**
- SS
 - SP
 - HL
 - LP
 - SP/HL
 - DF/HL
 - DF
 - MC
 - SS/SP
 - SS/LP
 - SS/DF
 - NS
 - Omorika
 - MC/NBL
 - NBL
 - OG
 - OG/NBL
 - felled



Dell Estate
Whitebridge Plantation
Forest Plan 2022- 2041
TA 19 - 3 Figure 19 - 3 - 1
Current Species Map

7th Nov 2022 Scale: 1:10,000 Drawn: CR

www.crosscutforestry.com



LEGEND
Peat Depth
 >1.0m
 0.5 - 1.0m



Loch Kemp Pump Storage Project
Proposed Forest to Bog Restoration
 TA 19 - 3 Figure 19 - 3 - 2
Peat Depth Map

10th Oct 2023 | Scale: 1:5,000 | Drawn: CR

www.crosscutforestry.com

Annex 2: Miscellaneous Photographs



Image 1. Blanket Bog Habitat on Open Ground Within Area M.



Image 2. Single Furrow Ploughing Within Area M.



Image 3. Single Furrow Ploughing Within Area M.



Image 4. Evidence of Former Peat Cutting Within Area M.



Image 5. Evidence of Former Peat Cutting Within Area M.



Image 6. Blocked Drainage Ditch Within Area N.



Image 7. Dying Lodgepole Pine Due to Waterlogging Within Area N.

Annex 3: NH474154 Main Tree Species.

Ecological Site Classification Report

Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
247467	815411	NH474154	Baseline climate 1961-1990	Cool - Moderately exposed - Wet	All species	No brash present	No drainage installed	No fertiliser

Site Description and Variables

















































































The site has a cool, moderately exposed and wet climate. The soils are wet moisture status and vp2 very poor nutrient status. Wet soils may cause flotation problems for heavy machinery on establishment, and on harvesting, if only lightly crowned species are present (e.g. birch). Tree species recommendations in ESC do not take account of each country's regulatory approval process, so prior to including species in a forest plan advice should be sought from relevant forestry authorities.

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	1045.0	5.0	13.0	71.0	2.0(Wet)	0.5(VP2 Very poor)
Final	1045.0	5.0	13.0	71.0	2.0(Wet)	0.5(VP2 Very poor)

Species	Abbr.	Suit(Ecol)	Suit(Timber)	Yield	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
Corsican pine	CP	▲	●	3	SNR	▲	●	●	●	●	▲	3.3(A)
Lodgepole pine	LP	▲	▲	5	SNR	●	●	●	●	●	▲	3.1(A)
Macedonian pine	MCP	▲	▲	5	SNR	●	●	●	●	●	▲	3.1(C)
Maritime pine	MAP	●	●	0	SMR	●	●	●	▲	●	▲	3.1(C)
Monterey/Radiata pine	RAP	●	●	0	MD	●	●	●	●	●	▲	3(C)
Scots pine	SP	▲	●	4	SMR	●	●	●	●	▲	▲	3.3(A)
Weymouth pine	WEP	●	●	0	SMR	●	●	●	●	●	●	3(C)
Norway spruce	NS	●	●	1	SNR	●	●	●	●	●	●	3.3(A)
Oriental spruce	ORS	●	●	0	SMR	●	●	●	●	●	●	3(C)
Serbian spruce	OMS	●	●	3	SNR	●	●	●	●	▲	●	3(B)
Sitka spruce	SS	●	●	5	SNR	●	●	●	●	●	●	3.4(A)
Sitka spruce (Imp.)	Imp.SS	●	●	5	SNR	●	●	●	●	●	●	3.4(A)
Douglas fir	DF	●	●	0	SMR	●	●	●	●	●	●	3.1(A)
Hybrid larch	HL	●	●	1	SMR	●	●	●	●	●	▲	3(A)
Japanese larch	JL	●	●	3	SMR	●	●	●	●	●	▲	3(A)
European larch	EL	●	●	0	SMR	●	●	●	●	●	●	3(A)
Western red cedar	RC	●	●	0	SNR	●	●	●	●	●	●	3.1(A)
Japanese red cedar	JCR	●	●	0	SMR	●	●	●	●	●	●	3(B)
European silver fir	ESF	●	●	2	SMR	●	●	●	●	●	●	3(B)
Grand fir	GF	●	●	0	SNR	●	●	●	●	●	●	3(A)
Noble Fir	NF	●	●	0	SMR	●	●	●	●	●	●	3(A)
Nordmann fir	NMF	●	●	0	SNR	●	●	●	▲	●	●	3(C)

Ecological Site Classification Report												
Pacific fir	PSF			0	SMR							3.4(C)
Leyland cypress	LEC			0	SMR							3(B)
Western hemlock	WH			0	SMR							3(A)
Giant redwood	WSQ			0	SMR							3(B)
Coast redwood	RSQ			1	SNR							3(B)
Lawson's cypress	LC			1	SNR							3(B)
Downy birch	PBI			3	SNR							3.2(A)
Silver birch	SBI			0	SMR							3.2(A)
Big leaf maple	AMA			0	SMR							3.1(C)
Norway maple	NOM			0	SNR							3(B)
Sycamore	SY			0	SMR							3.3(A)
Beech	BE			0	SMR							3.1(A)
Roble beech	RON			0	SNR							3.1(B)
Ash	AH			0	SNR							3(A)
Pedunculate oak	POK			0	SNR							3.1(A)
Red oak	ROK			0	SMR							3(B)
Sessile oak	SOK			0	SNR							3.2(A)
Aspen	ASP			0	SNR							3.2(A)
Black poplar	BPO			0	SNR							3.1(A)
Rauli beech	RAN			0	SMR							3.1(B)
Common alder	CAR			1	SNR							3.2(A)
Red alder	RAR			0	SNR							3(B)
Grey alder	GAR			3	SNR							3.1(B)
Italian alder	IAR			1	MD							3.2(B)
Shining gum	ENI			0	SMR							3(C)
Cider gum	EGU			4	SNR							3(C)
Rowan	ROW			0	SMR							3.3(A)
True service tree	TST			0	SMR							3(A)
Wild service tree	WST			0	SMR							3(A)
Black walnut	JNI			0	AT5							3(B)

Ecological Site Classification Report

Common walnut	JRE			0	SMR							3(B)
Hornbeam	HBM			0	SNR							3(A)
Small-leaved lime	SLI			0	SNR							3(A)
Wych elm	WEM			0	SMR							3(A)
Wild cherry	WCH			0	SNR							3(A)
Sweet chestnut	SC			0	SMR							3(A)
White willow	WWL			0	SNR							3(C)
Holly	HOL			0	SNR							3(C)
Willow (SRC)	SRC			0	SNR							3(C)
Eucalyptus glaucescens (SRF)	SRF			0	SNR							3(C)

Annex 4: ESC_NVC_NH474154 - Native Woodland

Ecological Site Classification Report - Native Woodland Classification






















Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
247467	815411	NH474154	Baseline climate 1961-1990	Cool - Moderately exposed - Wet	All species	No brash present	No drainage installed	No fertiliser

Site Variables

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	1045.0	5.0	13.0	71.0	Wet	VP2 Very poor
Final	1045.0	5.0	13.0	71.0	Wet	VP2 Very poor

Woodland	Suit.	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
W1-Sallow with marsh bedstraw		SNR							4(A)
W2-Alder with common reed		SNR							4(A)
W3-Sallow with bottle sedge		SNR							4(A)
W4-Birch with purple moor grass		SNR							4(A)
W5-Alder with tussock-sedge		SNR							4(A)
W6-Alder with stinging nettle		SNR							4(A)
W7-Alder-ash with yellow pimpernel		SNR							4(A)
W8-Mixed broadleaved with dogs mercury		SNR							4(A)
W9-Mixed broadleaved with dogs mercury(Upland)		SNR							4(A)
W10-Mixed broadleaved with bluebell/wild hyacinth		SNR							4(A)
W11-Oak-birch with bluebell/wild hyacinth		SNR							4(A)
W12-Beech with dogs mercury		SMR							4(A)
W13-Yew		MD							4(A)
W14-Beech with bramble		SMR							4(A)
W15-Beech with wavy hair-grass		SMR							4(A)
W16-Oak-birch with bilberry/blaeberry		SMR							4(A)
W17-Oak-birch with bilberry/blaeberry(Upland)		SMR							4(A)

Ecological Site Classification Report - Native Woodland Classification

W18-Scots pine with heather		SMR							4(A)
W19-Juniper with wood sorrel		SNR							4(A)
W20-Salix lapponum-Luzula sylvatica		SNR							4(A)