

Balmeanach Wind Farm

Technical Appendix 3.3:

Assessment of Potential Areas for Woodland Removal for Peatland Restoration



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June 2023

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1. SUMMARY

Crosscut Forestry Ltd was commissioned by Wind2 Limited (Wind2) on behalf of Balmeanach Wind Farm Limited to assess the suitability of woodlands within the Coishletter Forest complex for conversion from forest to bog as part of the proposed Habitat Management Plan (HMP) for the proposed Balmeanach Wind Farm (the Proposed Development) near Edinbane on the Isle of Skye.

Seven woodland compartments have been identified (A to G as shown on **Figure 3.3.1**) which could potentially be suitable for restoration to peatland extending to approximately 77.75 hectares (ha) located on the upper margins of the forest and close to existing peatland habitats (**Figure 3.3.1**). Woodland compartments A to D were surveyed in detail onsite. Upon completion of the survey and following discussions with the ecological specialists in relation to the proposed HMP (as presented in **Technical Appendix 8.5**) it was recommended that no isolated blocks of woodland were left between the proposed HMP area and those areas already consented as HMP areas for the Ben Sca Wind Farm and Extension (areas as shown on **Figure 3.3.1**). Areas E, F and G are therefore also proposed to be included in the Habitat Management Area for the Proposed Development to ensure that no small areas are left incongruous with the wider landscape, avoiding creating an adverse landscape feature and maintaining connectivity of habitats to enhance the overall value of the peatland restoration proposals.

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. Additionally, these restoration areas offer the opportunity to complement the existing restoration areas planned for the consented Ben Sca Wind Farm and its Extension, enhancing priority habitats and their connectivity thereby potentially increasing its value as well as the value of the additional restoration areas.

The woodland is part of the extensive Coishletter Forest complex established in the early 1990's predominantly with Sitka Spruce/Lodgepole Pine (SS/LP) in intimate mixtures. The compartments proposed for restoration have particularly low Yield Class (SS YC8 LP YC4) for their species due to the high exposure and the fact that they are mostly located on nutrient poor unflushed blanket bog where peat depths regularly exceed 0.5m and in many areas are >1.0m.

Approximately 20.5ha of woodland in compartment A comprises dead trees most likely caused by the fire which occurred in 2018.

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). The areas of woodland where the trees are dead do not require to be assessed against the CoWRP (20.5ha). Therefore a total area of up to 57.25ha of woodland within woodland compartments A-G are assessed.

None of the woodland proposed for restoration is the type of woodland identified in the CoWRP where there is a strong presumption against its removal.

The policy does presume to protect all woodland, but woodland removal is acceptable where certain criteria are met.

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.

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, the depth of peat on site and the clear benefits of restoration, indicate that the proposal to fell without the need for restocking is appropriate at this site.

As a result, the requirements of CoWRP are met, as the deforested area is to be restored to peatland and integrated into the wider site HMP therefore '*significantly enhancing priority habitats (in this particular case – blanket bog) and their connectivity*'.

2. INTRODUCTION

Cameron Ross of Crosscut Forestry Ltd has been instructed to produce this report to provide supporting information for a planning application for the construction of Balmeanach Wind Farm (the Proposed Development) located on the Isle of Skye approximately 3km south of Edinbane.

This report assesses the proposed forest to bog restoration 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).

Cameron Ross undertook site visits on 06 April and 18 May 2023 to assess the extent and condition of the woodland.

3. PEATLAND RESTORATION SITE DESCRIPTION

The proposed peatland restoration site is located on the upper margins of existing coniferous woodland dominated by intimate mixtures of Sitka Spruce/Lodgepole Pine (SS/LP) planted in 1990/91 approximately 3km south west of Edinbane at an elevation of 90 -150m on the west facing slopes of Mullach Ben Sca on the Isle of Skye.

The woodland which would be directly affected are described specifically in Section 5.2 Woodland Description of this report.

4. PLANNING CONTEXT

The purpose of this report is to provide supporting information on the effects of forest to bog restoration in support of the Planning application. In addition, the report aims to enable 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.

No site-specific pre-application consultation advice or scoping responses to the Proposed Development and woodland removal has been received from either Scottish Forestry or The Highland Council (THC). The pre-application consultation response from THC directed the Applicant to the following standard guidance documents:

- Scottish Government's woodland strategy and associated policies:
<https://forestry.gov.scot/support-regulations/control-of-woodland-removal>
- THC Guidance on Tree/Woodland Removal:
http://www.highland.gov.uk/info/1225/countryside_farming_and_wildlife/63/trees_and_forestry/

Both statutory bodies will expect the impacts of the Proposed Development upon woodlands to be assessed against the requirements of the Scottish Government's Policy on 'Control of Woodland Removal' (2009) (CoWRP), THC's guidance on Tree/Woodland Removal and Scottish Forestry guidance 'Deciding future management options for afforested deep peat' (2015).

The Scottish Government's Policy on 'Control of Woodland Removal' (2009) 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. 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.

However, for woodland situated on deep peats, the greenhouse gas and wider environmental implications of future management are more significant compared to 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.

The guidance '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.

5. WOODLAND SURVEY

5.1 Methodology

During the site visits, the woodland compartments A-D (**Figure 3.3.1**) were surveyed with the aim of identifying areas of different crop types and ages (**Figure 3.3.3**). Planting date information was provided by Wind2.

Areas E, F and G were not formally surveyed for this report and are therefore not shown on **Figures 3.3.2** and **3.3.3**. However, the crops within these areas are very similar, and likely subject to slower growth rates than the areas surveyed.

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 48 sample plots where the height of the largest diameter tree for each species was measured.

To further inform the report, peat depths were checked at approximately 50m intervals whilst walking on site. Approximately 180 peat depth samples were recorded to inform the peat depth across the site (**Figure 3.3.2**).

The existing crop data and the Ecological Site Classification (ESC) tool (**Annexes A and B**) were used to assess the sites' potential for tree growth as per Scottish Forestry Practice Guide – *Deciding Future Management Options For Afforested Deep Peatland*.

5.2 Woodland Description

Although there are separate areas extending to approximately 77.75ha which are being assessed for suitability for restoration to peatland, compartments A - G (**Figure 3.3.1**), they are all essentially part of the same crop and have been treated as such for this report.

The woodland was planted with a main crop of Sitka Spruce and Lodgepole Pine (SS/LP) in intimate mixture over two planting seasons - 1990-91 on double furrow deep ploughed ground with regular cross drains. The area proposed for restoration is located on the upper margins of the forest at an elevation of 90 – 150m and was planted in 1990. It is adjacent to existing peatland habitats and importantly is close to areas approved for restoration under the HMPs for the consented Ben Sca Wind Farm and its Extension.

Growth rates are variable across the whole forest but are generally poor to very poor at the higher elevations where restoration is proposed. A combination of harsher climatic conditions and poor site nutrition prevail in these areas and there are many areas where the crop has not fully closed canopy.

Within woodland compartment A there are extensive areas where the LP is dead or dying. It was not possible to be certain of the cause of this during the site visit, but it is understood that a fire which is known to have swept over the site during 2018 is the most likely cause. The areas of dead trees do

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not need to be assessed against the Control of Woodland Removal Policy as they no longer constitute woodland.

General Yield Class calculations for the crop identified the SS at YC8 and LP YC4. These are exceptionally poor growth rates which are a result of low nutritional value of the soils and the exposed nature of the site.

The site has a DAMS score of 19 - 20. DAMS (Detailed Aspect Method of Scoring) is simply a measure of the windiness of a site calculated from various criteria including elevation, aspect, and exposure. A score of 19 -22 is classed as severely exposed and is very close to a level (>22) that is deemed unsuitable for productive forestry.

A full peat depth survey was not carried out, but peat depths were recorded at approximately 50m intervals en-route across the site. 180 peat depths were recorded and were frequently >50cm across the survey area and in many cases exceeded 1m. These were used to estimate average peat depths across the site (**Figure 3.3.2**).

Dominant ground vegetation includes Calluna, Trichophorum and Eriophorum suggesting unflushed blanket bog habitats with a very poor nutrient regime.

Table 1 provides a summary of tree heights surveyed; while **Table 2** provides a summary of the woodland areas proposed to be removed for peatland restoration purposes.

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Table 1: Summary of Top Heights

Top Height (Sitka Spruce)	Top Height (Lodgepole Pine)
9.5m	9.3m

Table 2: Summary of Woodland Removal Area

Location (Compartment)	Species	Age	Yield Class	DAMS Score	Average Peat Depth	Area (ha)
A	SS/LP	32	SS YC8 LP YC4	19 - 20	0.5 – 1m	11.2ha (excluding 20.5ha of dead trees)
B	SS/LP	32	SS YC8 LP YC4	20	>1.0m	36.1ha
C	SS/LP	32	SS YC8 LP YC4	20	>1.0m	2.5ha
D	SS/LP	32	SS YC8 LP YC4	20	>1.0m	1.7ha
E	Not formally surveyed but considered to be of similar composition and yield class as areas A-D					5.75ha
F						
G						
					Total	57.25ha

Key: SS = Sitka Spruce; LP = Lodgepole Pine; YC = Yield Class; DAMS = Detailed Aspect Method of Scoring

6. CONCLUSION AND RECOMMENDATIONS

It is proposed that up to 57.25ha of woodland (within Compartments A-G) could be removed for restoration to peatland habitat and therefore the *'Control of Woodland Removal Policy'* is a material consideration (20.5ha is also included in the HMP area but comprises dead trees and is therefore not assessed).

The policy includes a strong presumption against removing the following types of woodland:

- Ancient semi-natural woodland;
- Woodland integral to the value of designated natural conservation sites;
- Scheduled Monuments;
- National Scenic Areas;
- Woodlands listed within the Inventory of Gardens and Designed Landscapes;
- Woodlands 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.

None of the above are applicable to the proposed woodland removal areas and, although the policy does presume to protect woodland, removal of other woodland types is acceptable where certain criteria are met.

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.

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"*.

The Forest Research decision support tool *Ecological Site Classification (ESC)* (**Annexes A and B**) provides 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.

Ecological Site Classification data for the site shows the area as marginal for Sitka Spruce with the Soil Nutrient Regime being the limiting factor (**Annex A: ESC_NG328488 Main Tree Species**). The growth rate of the current crop and the consistent deep peat across the site supports this data.

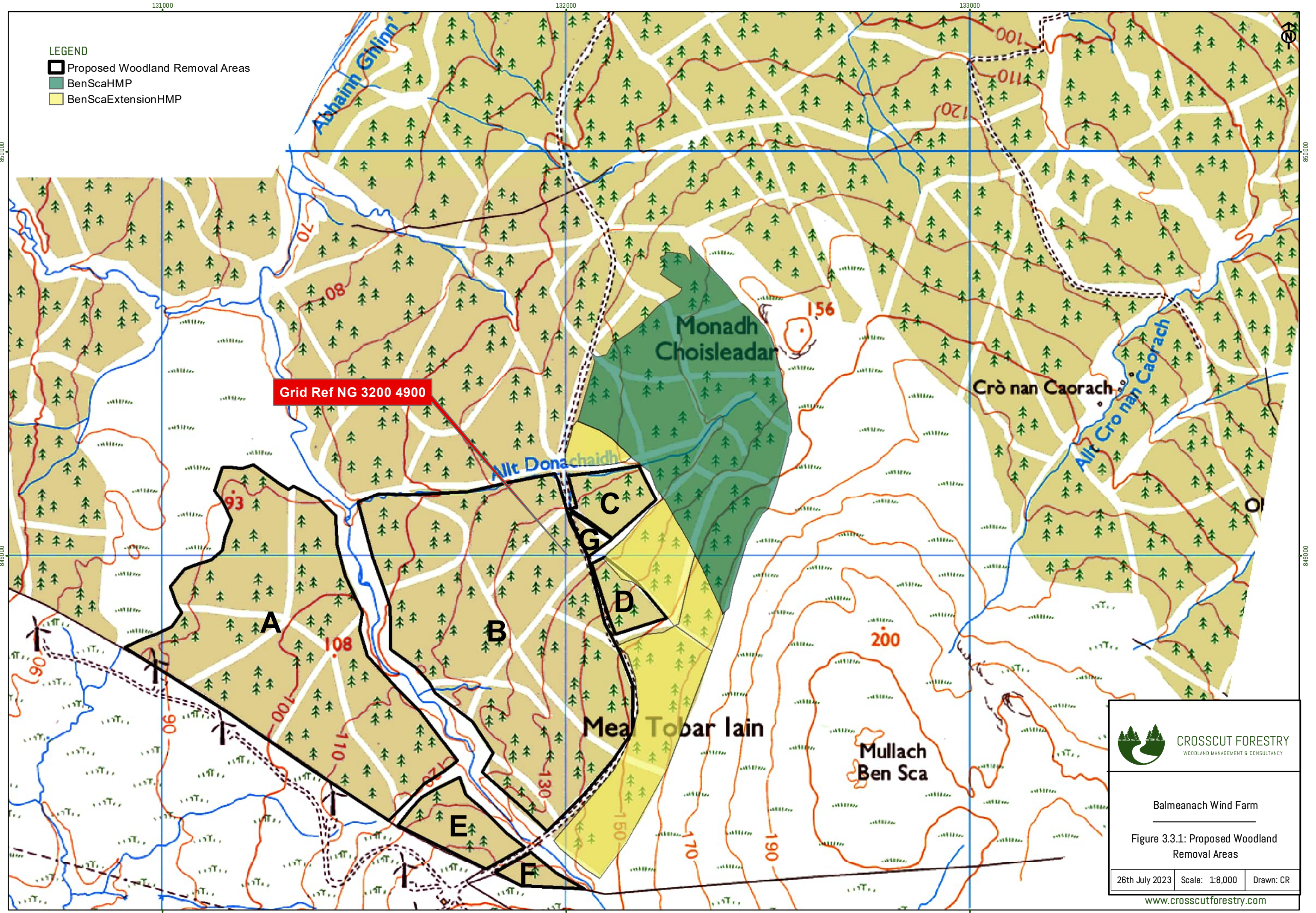
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The guidance note suggests sites should be suitable or very suitable for a species for conventional restocking to be undertaken.


The guidance does state that sites not suitable for conventional restocking should be considered for conversion to peatland edge woodland where ESC shows the site has potential for woodland providing >20% canopy cover.

ESC indicates that the site is marginal at best for W4 – Birch with Purple Moor Grass Peatland Edge Woodland (**Annex B: ESC_NVC_NG328488 - Native Woodland**), but when considering local site conditions including Soil Moisture Regime and Soil Nutrient Regime, along with the wider benefits of enhancing priority habitats and their connectivity, the removal of these woodland areas is appropriate within the context of the '*Control of Woodland Removal Policy*'.



LEGEND

- Proposed Woodland Removal Areas
- BenScaHMP
- BenScaExtensionHMP



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Figure 3.3.1: Proposed Woodland Removal Areas

26th July 2023	Scale: 1:8,000	Drawn: CR
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131000

132000

133000

860000

860000

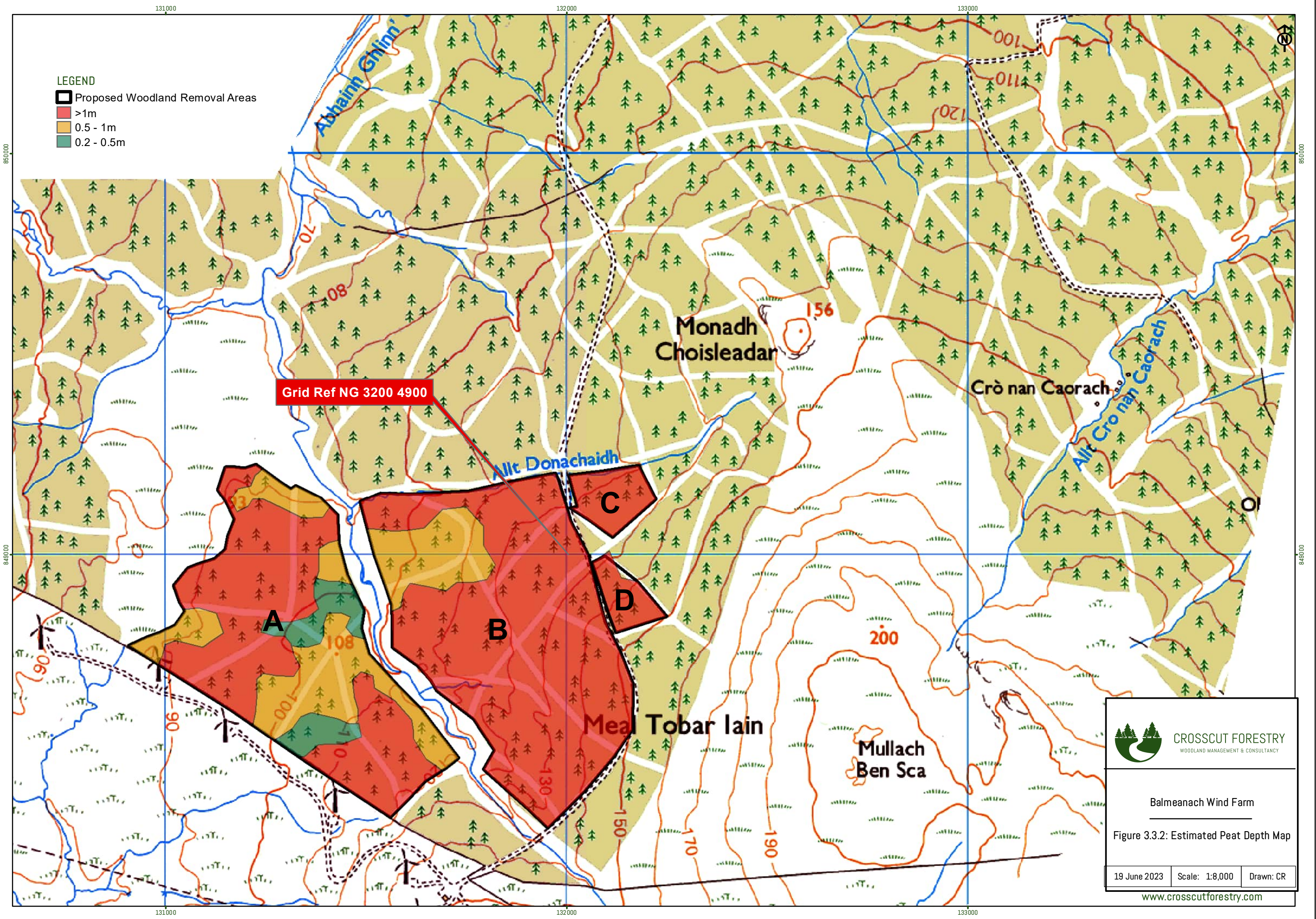
860000

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131000

132000

133000



LEGEND

- Proposed Woodland Removal Areas
- >1m
- 0.5 - 1m
- 0.2 - 0.5m

Grid Ref NG 3200 4900

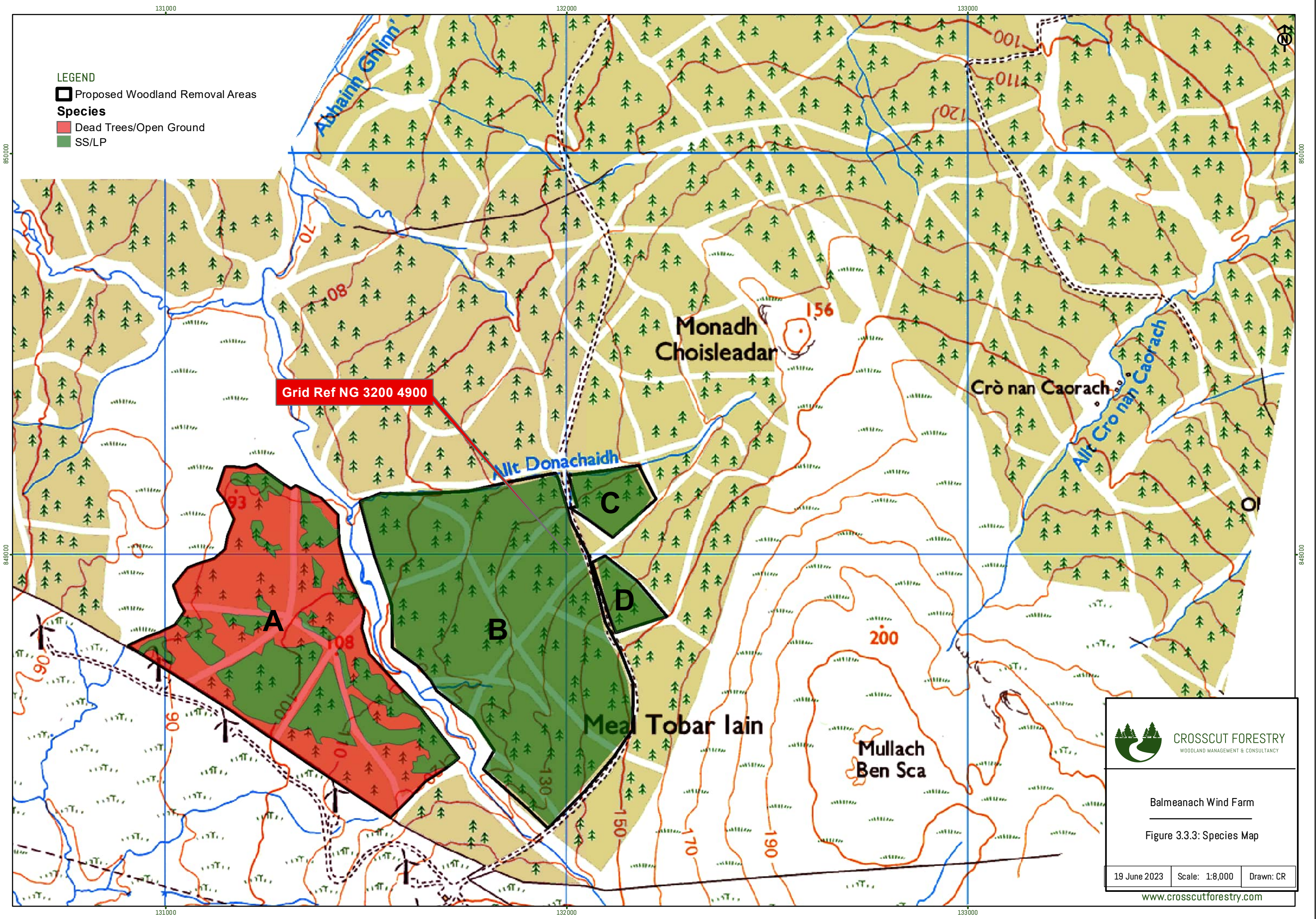
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Figure 3.3.2: Estimated Peat Depth Map

19 June 2023
Scale: 1:8,000
Drawn: CR

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LEGEND

□ Proposed Woodland Removal Areas

Species

■ Dead Trees/Open Ground

■ SS/LP

Grid Ref NG 3200 4900



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Figure 3.3.3: Species Map

19 June 2023	Scale: 1:8,000	Drawn: CR
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Ecological Site Classification Report												
Noble Fir	NF			0	DAMS							3(A)
Nordmann fir	NMF			0	DAMS							3(C)
Pacific fir	PSF			0	SMR							3.4(C)
Leyland cypress	LEC			0	DAMS							3(B)
Western hemlock	WH			0	SMR							3(A)
Giant redwood	WSQ			0	DAMS							3(B)
Coast redwood	RSQ			0	DAMS							3(B)
Lawson's cypress	LC			0	DAMS							3(B)
Downy birch	PBI			2	DAMS							3.2(A)
Silver birch	SBI			0	DAMS							3.2(A)
Big leaf maple	AMA			0	DAMS							3.1(C)
Norway maple	NOM			0	DAMS							3(B)
Sycamore	SY			0	DAMS							3.3(A)
Beech	BE			0	DAMS							3.1(A)
Roble beech	RON			0	DAMS							3.1(B)
Ash	AH			0	DAMS							3(A)
Pedunculate oak	POK			0	DAMS							3.1(A)
Red oak	ROK			0	DAMS							3(B)
Sessile oak	SOK			0	DAMS							3.2(A)
Aspen	ASP			0	DAMS							3.2(A)
Black poplar	BPO			0	DAMS							3.1(A)
Rauli beech	RAN			0	DAMS							3.1(B)
Common alder	CAR			0	DAMS							3.2(A)
Red alder	RAR			0	DAMS							3(B)
Grey alder	GAR			5	DAMS							3.1(B)
Italian alder	IAR			0	DAMS							3.2(B)
Shining gum	ENI			0	DAMS							3(C)
Cider gum	EGU			0	DAMS							3(C)
Rowan	ROW			0	SMR							3.3(A)
True service tree	TST			0	DAMS							3(A)

Ecological Site Classification Report

Wild service tree	WST			0	SMR							3(A)
Black walnut	JNI			0	AT5							3(B)
Common walnut	JRE			0	DAMS							3(B)
Hornbeam	HBM			0	DAMS							3(A)
Small-leaved lime	SLI			0	DAMS							3(A)
Wych elm	WEM			0	DAMS							3(A)
Wild cherry	WCH			0	DAMS							3(A)
Sweet chestnut	SC			0	DAMS							3(A)
White willow	WWL			0	DAMS							3(C)
Holly	HOL			0	DAMS							3(C)
Willow (SRC)	SRC			0	DAMS							3(C)
Eucalyptus glaucescens (SRF)	SRF			0	DAMS							3(C)

Annex B

Ecological Site Classification Report - Native Woodland Classification






















Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
132800	848800	NG328488	Baseline climate 1961-1990	Cool - Severely exposed - Wet	All species	No brash present	No drainage installed	No fertiliser

Site Variables

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	1064.0	3.0	22.0	53.0	Very Wet	VP2 Very poor
Final	1064.0	3.0	22.0	53.0	Very Wet	VP2 Very poor

Woodland	Suit.	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
W1-Sallow with marsh bedstraw		MD							4(A)
W2-Alder with common reed		MD							4(A)
W3-Sallow with bottle sedge		SNR							4(A)
W4-Birch with purple moor grass		SNR							4(A)
W5-Alder with tussock-sedge		MD							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		MD							4(A)
W9-Mixed broadleaved with dogs mercury(Upland)		SMR							4(A)
W10-Mixed broadleaved with bluebell/wild hyacinth		MD							4(A)
W11-Oak-birch with bluebell/wild hyacinth		SMR							4(A)
W12-Beech with dogs mercury		MD							4(A)
W13-Yew		MD							4(A)
W14-Beech with bramble		MD							4(A)
W15-Beech with wavy hair-grass		MD							4(A)
W16-Oak-birch with bilberry/blaeberry		MD							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		SMR							4(A)
W20-Salix lapponum-Luzula sylvatica		SMR							4(A)