CREAG CLUNIE NATIVE WOODLAND, INVERCAULD ESTATE, BRAEMAR.

Environmental Impact Assessment
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INTRODUCTION

A Woodland Grant Scheme (WGS) Deeside Forest Challenge Fund application (reference number 031000597) for 437ha on Creag Clunie & the Lion's Face was approved by the Forestry Commission in 1999. The scheme included 312ha of native woodland management and 94ha of natural regeneration without deer fencing, focusing on deer control measures as set out in a Deer Management Plan. The scheme included 230ha of the Creag Clunie & Lion's Face Site of Special Scientific Interest (SSSI) as well as the western extension of the Ballochbuie Special Area of Conservation (SAC) and Special Protection Area (SPA).

The aims of the WGS scheme were:

- To secure & enhance the condition & distribution of native woodland and montane scrub.
- To maximise the biodiversity interest of the site.

In 2009, a review by Forestry Commission Scotland (FCS), Scottish Natural Heritage (SNH) and the Deer Commission for Scotland under a Joint Working Agreement in consultation with Invercauld Estate, highlighted the potential for the creation of a larger area of native woodland as well as enhanced management of the existing woodland SAC & SPA on the site.

In 2010 a Statement of Intent (SOI) was submitted to the Scottish Rural Development Programme, Rural Development Contracts Rural Priorities (RDC RP) grant scheme to enclose 850ha within a new deer fence to allow the creation of 327ha of planted with 60ha of natural regeneration of native woodland as well as the management of 240ha of existing plantation and native woodland.

In July 2010 the FCS called an Environmental Impact Assessment (EIA) for the RDC RP application. The following reasons were given:

- The large scale of the proposals.
- Area is within the National Park.
- Also contains an SAC/ SPA.

NON TECHNICAL SUMMARY:

An outline proposal to plant a new woodland on Invercauld Estate, using trees naturally occurring in Scotland was submitted to the Forestry Commission Scotland for grant support in 2010. It is proposed to enclose a total area of 820 hectares (2,025 acres) of heather hill and existing Scots pine woodland within a deer fence. Approximately 40% of the area enclosed will be planted with trees, with just over 30% of the enclosed area already woodland.

This Environmental Impact Assessment identifies the main affects of creating a large area of new native woodland in this location. It also makes management recommendations to ensure that the proposals will not harm the current interests on the site.

In 1999 Invercauld Estate commenced a programme to reduce the numbers of red deer on part of this site to allow the growth of trees which had seeded themselves naturally. A 10 year review of this management approach revealed the difficulty in maintaining sufficiently low deer numbers to prevent damage to growing trees. Without the use of deer fencing, red deer continued to move from the surrounding area.

Creag Clunie on the edge of Braemar is an important site both in Scotland and the UK for the number of scarce birds as well as plants including mosses which are present there. One of these scarce birds called the capercaillie, require old Scots pine woodland in which to live. The proposal to create more Scots pine woodland next to the current area of Scots pine woodland will over time help increase both the numbers of capercaillie as well as this important type of woodland occurring only in Scotland. In the proposal to create new woodland, a deer fence is necessary to exclude red deer and allow the trees to grow. Deer fences can be a hazard to birds such as capercaillie as they can fly into these fences. To avoid this happening, wooden markers will be placed on the sections of fence deemed to be most at risk of birds flying into them to make the fence more visible. The design of the wooden markers follows the latest guidance and advice from the capercaillie officer. To ensure the woodland will be attractive to capercaillie, areas where the female birds with their chicks prefer to feed will be left unplanted. Surrounding these areas clumps of trees will be planted to provide cover when they are not feeding.

However there are scarce plants and mosses, that would be lost if woodland was created on the areas where they grow. These areas have been identified on the site and will be left unplanted to allow these important plants & mosses to thrive. There are also some other areas with important plants, particularly on the tops of the hills. Here small trees and shrubs are growing which will develop over time to create very open woodland and not negatively affect the important plants. It will also retain the views from the hill tops of the surrounding area for local walkers.

The use of a variety of naturally occurring trees and shrubs, which will grow on this site, is proposed. This design for the new woodland has been analysed to see what it will look like from a number of important

viewpoints in the local landscape by a landscape architect and was found not to have any negative impacts. These visual representations of the woodland are presented in the report.

A 10 year plan has been produced which says how deer, both roe & red, will be managed on Creag Clunie to allow the trees to grow. This has been approved by representatives of the Scottish Government. The number of red deer who live on Creag Clunie will be shot by experienced controllers so that they do not cause problems in neighbouring woods when the deer fence is constructed.

The river Dee is important nationally for the good quality of the water and the scarce animals and fish associated with the river. A number of the burns flow into the river Dee as well as provide a source of water for some local houses. The proposed work required to create the woodland will not have a negative effect on the water quality as it will follow the latest Scottish Government guidance and advice on protecting watercourses.

A few old crofting houses and associated buildings have been identified and will not be planted with trees.

Braemar is a popular area with walkers with a number of walks near Creag Clunie. The deer fence will not restrict the current walking routes. Should funding become available, there is potential to upgrade one of the existing walks.

SITE DESCRIPTION

Location:

Creag Clunie (NO175910) is situated 2 miles east of the village of Braemar on upper Deeside. It is located south of the River Dee and south & east of the A93 Glenshee to Aberdeen public road.

The area is owned and managed by Invercauld Estate.

Geology:

Creag Clunie: metamorphic rock - pebbly quartzite (north east slope) and graphitic schists & perlite (west slopes).

Carn nan Sgliat & Millstone Cairn: metamorphic rock - granite (upper slopes & summits).

Millstone Cairn: igneous fine grained rock – Calc-Alkaline Dyke Suite Felsite (lower western slopes).

Carn nan Sgliat: metamorphic rock – pebbly quartzite (north western slopes) with outcrops of Dolomitic limestone, Psammite & Pellite.

Lion's Face: sedmentary rock - Dolomitic limestone, Psammite & Pellite

(Geological Survey of Scotland, 1962)

Soils:

Carn nan Sgliat north west slopes:
Durnhill Soil Association – Peaty podzols some humus-iron podzols and gleys.

Creag Clunie & Lion's Face:
Strichen Soil Association – Peaty podzols, humus-iron podzols, some peaty gleys and rankers.

Carn nan Sgliat & Millstone Cairn summits:
Strichen Soil Association – Humus-iron podzols, some brown forest soils and gleys.

Millstone Cairn lower slopes:
Tarves Soil Association – Peat, peaty gleys, some peaty podzols and noncalcareous gleys

(Soil Survey of Scotland 1: 250,000 Sheet 5)

Hydrology:

Two upland burns drain part of the area.

1. Millstone Burn drains the south eastern edge of the scheme, flowing into the Callater Burn which is a tributary of the Clunie Water.

   The current status of the Clunie Water and Callater Burn (water body ID code 23361) are classified as overall status good with medium confidence on the River Basin Management Plans (RBMP) for Scotland.

2. The Allt na Claise Moire burn forms the north eastern boundary of the scheme, flowing into the River Dee at the Invercauld Bridge (NO185911).

The current status of the River Dee between Braemar & Ballater (water body ID code 23345) is classified as overall status poor with low confidence on the River Basin Management Plans for Scotland. Overall ecological status is poor with overall chemical status pass. The pressures contributing to the water bodies' failure to meet good ecological status or potential have been identified in the RBMP as road transport culverting (responsibility Aberdeenshire Council) & whisky production impounding sluice (responsibility Diageo) as barriers to fish migration.

In addition a number of springs occur on the western slopes of Carn nan Sgliat and Millstone Cairn as well as on the northern slopes of Creag Clunie.

Two springs on the lower western slopes of Millstone Cairn provide the private water supply to Easter Auchallater and Auchallater, see Archaeology & Hydrology Map Appendix 1.

Topography:
The native pine woodland occurs between 400 – 600 metres above sea level (asl) on the steep western & eastern slopes of Creag Clunie. Precipitous cliffs and crags occur on the northern facing slopes on both Creag Clunie & the Lion's Face as well as Millstone Cairn.

The cairn on Carn nan Sgliat is located at 690m asl with Millstone Cairn forming the highest point at 743m asl.

Habitats
The following information is collated from the M. D. Smedley's NVC survey (Smedley, 1996) and G. Rothero Bryophyte survey (Rothero, 1998) for the Creag Clunie & Lion's Face SSSI, with additional notes from a walk over survey completed in July 2010 by Mrs Carol Robertson, see Appendix 2, for the Habitats Map.

<u>Creag Clunie & Lion's Face SSSI:</u>

The mature Scots pinewoods of Creag Clunie comprise both the naturally self-sown woodlands on either side of the crag, and the plantations below Creag Clunie. The self-sown pine woodland includes one of the best examples of moderately herb-rich Caledonian pine woodland (National Vegetation Classification (NVC) W18c *Pinus sylvestris-Hylocomium splendens* woodland, *Luzula pilosa* subcommunity) on Deeside. Creag Clunie also has one of the best examples of stunted pine woodland at relatively high altitude in North East Scotland (SNH, 1998). These pinewoods as the western extension of the Ballochbuie SAC & SPA, form an extensive area of ancient Caledonian pine woodland.

European larch (*Larix decidua*) is widespread on the western and lower slopes of Creag Clunie where it is at least locally naturalised (SNH, 1998). Birch (*Betula pubescens*) is locally abundant mainly on the crags with rowan (*Sorbus aucuparia*), juniper (*Juniperus communis ssp communis*) and occasional aspen (*Populus tremula*) & bird cherry (*Prunus padus*). Creeping willow (*Salix repens*) is present in flushed areas on the middle slopes of Clais Mhor.

The Scots pine is believed to be of mixed origin, i.e. local plantation and genuinely native on the western slopes, with genuinely native pine on the upper eastern slopes (Callander & MacKenzie, 1994). The plantations below Creag Clunie are composed of pine of local origin and are planted on ground that would naturally support Caledonian pinewood (SNH, 1998). See Woodland Map Appendix 3.

On the west side of Creag Clunie the pinewood merges into birch woodland (NVC Type W17 *Quercus petraea – Betula pubescens – Dicranum majus* woodland). Other species occurring include alder (*Alnus glutinosa*), aspen and a variety of shrub & dwarf *Salix* species, including eared (*S. aurita*) and creeping willow, as well as scattered, browsed juniper. Hazel (*Corylus avellana*) and bird cherry are locally frequent on the limestone outcrops and screes of the Lion's Face. On the lower slopes west of Charter's Chest, a few mature Norway spruce (*Picea abies*) are present, some of which have windblown.

The birch and pine woods contain a good variety of deadwood habitat in the form of fallen branches and trees, as well as standing decaying stumps.

The field-layer is fairly characteristic of pine woodlands, being dominated by dwarf shrubs and feather mosses, and variably rich in *Sphagnum* mosses, and woodland herbs and grasses (Smedley, 1996). Woodland herbs such as wood sorrel (*Oxalis acetosella*) and hairy woodrush (*Luzula pilosa*) are frequent in the self-sown woodland on the western slopes, and in Clunie plantation (SNH, 1998). Mountain crowberry (*Empetrum nigrum hermaphroditum)*, is widely scattered throughout the Clunie pine woodland above 450m. The abundance of this species is probably greater than known in any woodland in Britain and closely comparable with pine woodland in areas of Norway (Smedley, 1996). Interesting species of note in the birch woodland include dog's mercury (*Mercurialis perennis*), primrose (*Primula vulgaris*) and herb-robert (*Geranium robertianum*). Several nationally scarce plants are present in the Creag Clunie area, including intermediate wintergreen (*Pyrola media*) and interrupted clubmoss (*Lycopodium annotinum*) on Claise Mhor (SNH, 1998).

The area is of national importance for the assemblage of lichen, moss & liverwort species occurring on the exposed rock and screes which includes five Nationally Rare and eleven Nationally Scarce species. The most diverse bryophyte & lichen flora is present in areas of calcareous rock as well as in areas where there is some mineral enrichment by flushing associated with the Lion's Face. Of note is a viable population of elm *Gyalecta* lichen, whose world status is rare and declining, (SNH, 1998). The Lion's Face is also the most important area for bryophytes on the SSSI both in terms of diversity of bryophyte populations and in the numbers of rare or interesting species. These include *Pseudoleskeella rupestris* a nationally rare species of montane limestone which is the first population to be recorded in Aberdeenshire. In the bealach (col) to the south and in the burns draining from this, there are areas of flushed grassland and calcareous, stony flushes. Associated with this area is a small population of the nationally rare moss *Stegonia latifolia* as well as the nationally scarce liverwort *Riccardia incurvata*. In contrast the acid outcrops and screes of Creag Clunie and Carn nan Sgliat support a much

less diverse bryophyte flora but one which does have with a number of rare species. In two important areas of crag and boulder on Creag Clunie and on the east side of Carn nan Sgliat there are stands of *Grimmia incurva* a nationally scarce species of sheltered acid rocks and one not recorded in Aberdeen for many years. In addition on Carn nan Sgliat there is a small population of *Cynodontium polycarpon* (Red Data Book listed) a nationally rare species only rarely recorded in Britain and also a tiny population of *Cynodontium strumiferum*, also nationally rare, (Rothero, 1998).

Table 1: Lower Plant Species Status – based on Rothero 1998

SPECIES	NATIONALLY RARE*	NATIONALLY SCARCE#	RED DATA BOOK LISTING	HABITAT
Mosses				
Cynodontium polycarpon	YES		Vulnerable	Acidic, large block scree
Cynodontium strumiferum	YES			Acidic rocks
Ditrichum flexicaule		YES	Data deficient	Limestone rocks
Grimmia incurva		YES		Acidic rocks
Leucodon sciuroides				Limestone rocks
Meesia uliginosa		YES		Calcareous flushes
Plagiopus oederi		YES		Limestone rocks
Pseudoleskeella catenulata		YES		Limestone rocks
Pseudoleskeella rupestris (moss)	YES		Lower risk near threatened	Limestone rocks
Pterigynandrum filiforme		YES		Epiphyte on juniper
Stegonia latifolia	YES		Lower risk nr threatened	Limestone rocks
Liverworts				
Anastrophyllum hellerianum		YES		Fallen Scots pine logs
Lophozia longidens		YES		Tree stumps and rocks
Marsupella brevissima		YES		Areas of snow-lie or exposed ridges
Riccardia incurvata		YES		Calcareous flushes
Scapania aequiloba		YES		Limestone rocks
Scapania degenii		YES		Calcareous flushes
Tetralophozia setiformis		YES		Acidic block scree

Lichen				
Gyalecta ulmi	*YES*			Shaded Limestone rocks

*Nationally Rare i.e. recorded in 15 or fewer hectads in the UK
#Nationally Scarce i.e. recorded in 15 to 100 hectads in the UK

The open ground above the Lion's Face and adjacent to Sron a Bhruic/ Claise Mhor is predominantly heather (*Calluna vulgaris*) moorland, including extensive areas of herb-rich heath (H12c *Calluna vulgaris – Vaccinium myrtillus* heath *Galium saxatile – Festuca ovina* sub-community) and small areas of calcicolous heath and grassland (H10d *Calluna vulgaris – Erica cinerea* heath *Thymus praecox – Carex pulicaris* sub-community and CG10 *Festuca ovina – Agrostis capillaris – Thymus praecox* grassland) by the Lion's Face. The ridge from Creag Clunie towards Carn nan Sgliat is mainly subalpine heath (H16c *Calluna vulgaris –Arctostaphylos uva-ursi* heath Cladonia spp sub-community) with small areas of mire (M19a *Calluna vulgaris – Eriophorum vaginatum* blanket mire *Erica tetralix* sub-community) & pools (Smedley, 1996). The wetter mid slopes on Claise Mhor have wet heath (M16 *E. tetralix - Sphagnum compactum)*.

Carn nan Sgliat

The birch woodland (W17) present on the north-western slopes of Carn nan Sgliat consists of a large irregularly sized area along with scattered small groups of trees on the rocky outcrops and terraces on the northern and western slopes. Other tree & shrub species present include rowan, alder, aspen, bird cherry, juniper and willow species including goat willow (*Salix caprea*), eared and dwarf willow.

Scattered seedling regeneration of birch, Scots pine, rowan, aspen and willow was recorded over the heather slopes. On the exposed ridge of Carn nan Sgliat, were noted occasional low growing seedlings of birch, juniper, larch and Scots pine.

The occurrence of ostrich-plume feather-moss (*Ptilium crista-castrensis)* within the birchwood is regarded as an indicator of ancient woodland.

The majority of the north western slope is heather moorland (H12) with pockets of enrichment with species recorded including wood anemone (*Anemone nemorosa*), wood sorrel, lesser twayblade (*Listera cordata)*, northern bedstraw (*Galium boreale*) and wood cranesbill (*Geranium sylvaticum*) through the heather. Of note are the small but scattered areas of calcareous grassland (CG10) and associated calcareous flushes dominated by yellow saxifrage (*Saxifraga aizoides*) (M11 *Carex demissa – Saxifraga aizoides* mire) on the slope south from the col at the Lions Face and hard water springs dominated by the moss *Cratoneuron commutatum*. These areas are associated with outcrops of Dolomitic limestone, Psammite & Pellite.

Over approx. 500m asl there is an increasing occurrence of crowberry, cloudberry (*Rubus chamaemorus*) as well as intermediate wintergreen in the heather with bearberry also occurring on the more exposed, wind clipped heather ridge of Carn nan Sgliat (H16).

The upper western slopes have variable sized areas of boulder scree with mats of crowberry, blaeberry and heather with very occasional birch and rowan seedling regeneration. The heather moorland, dominated by *Calluna* with blaeberry, bell heather (*Erica cinerea*) and occasional cowberry, on the mid to lower heather slopes has been extensively burnt in recent years. Herbs such as wood anemone, chickweed wintergreen (*Trentalis europaea*), tormental (*Potentilla erecta*) occur through the heather with occasional hard fern (*Blechnum spicant).* In the drier areas on the southern edge of the thinning birch wood, bracken (*Pteridium aquilinum*) is locally dominant. There are variable sized areas of dwarf willows present on the lower slopes opposite Easter Auchallater associated with pockets of wet heath (M16 *Erica tetralix – Sphagnum compactum*) with purple moor grass (*Molinia caerulea*) and bog asphodel (*Narthecium ossifragum*). A number of flushes are present on this slope, many originating from a bog area on the col between Carn nan Sgliat and Millstone Cairn with hare's tail cotton sedge (*Eriophorium vaginatum*), bog asphodel, sundew (*Drosera spp.*) and butterwort (*Pinguicula vulgaris*). Also on the east side of the watershed is an outcrop with scattered Scots pine, birch, juniper and a single rock whitebeam (*Sorbus rupicola*).

Millstone Cairn

The western slopes of Millstone Cairn are dominated by heather moorland which has been extensively managed by muirburn in recent years with muirburn extending up to the crags between 650 to 700m asl. On the upper slopes, cloudberry, bearberry, crowberry with occasional petty whin (*Genista anglica*) where noted in the dwarf heath. On exposed summits and ridges of Millstone Cairn the heath becomes windclipped with interrupted clubmoss present.

Scattered tree cover of Scots pine, rowan, birch and occasional larch persists on the south facing and north east crags of Millstone Cairn. With scattered regeneration of birch, rowan, larch and eared/ grey willow noted over the heather slopes.

A number of flushes are present on the lower slopes adjacent to the A96 road as well as the Callater and Millstone burns, with willows (including creeping and eared willows), purple moor-grass, bog myrtle (*Myrica gale)*, cross-leaved heath (*Erica tetralix*), bog asphodel, sundew and occasional pockets of jointed rush (*Juncus articulatus*). On the north facing slopes of Millstone Cairn, wet heath & associated flushes, with cloudberry, sundews and *Sphagnum* spps, are present, with occasional scattered Scots pine and rowan occurring on the drier heather dominated knolls.

The steep slope, extending east of Millstone Cairn along the south side of the Allt na Claise Moire, has scattered small pockets of scree & boulders amongst the heather, with mats of crowberry and blaeberry. Cloudberry & clubmoss are present through the heather, along with herbs such as lesser twayblade, chickweed wintergreen, heath bedstraw, violets and occasional wood anemone. Of note are small areas of calcareous grassland (CG10) with thyme, alpine ladies mantle (*Alchemilla alpine*), fairy flax (*Linium catharticum*), quaking grass (*Briza media*) etc. on the slope.

Nearer the Scots pine plantation, individual Scots pine trees, some standing dead, occur. Also present, both on the slope and adjacent to the burn, are mature rowan, with occasional willow and juniper. Scattered rowan seedling regeneration was noted associated with these groups of trees.

Creag Choinnich:
The lower slopes are dominated by Scots pine plantation with European larch, and occasional pockets of Norway spruce, Douglas fir (*Pseudotsuga menziesii*) and mature beech (*Fagus sylvatica*). The upper heather slopes have variable sized pockets of self seeded Scots pine. Scattered tree and shrub cover is present on the exposed high crags. Birch is the dominant species with Scots pine, rowan, larch, aspen, willow and bird cherry.

Within the pine plantation on the lower southern slopes, is an area of open water and associated *Carex* dominated mires & flushes.

Table 2. Summary of Habitat Types on Creag Clunie scheme area.

HABITAT	**NVC TYPE**	**STATUS**
Native Woodland	W17, W18, W19	UK BAP
Heaths	H11, H12, H16	UK BAP
Mire/ wet heath	M16, M19	UK BAP
Calcareous grassland	CG10	UK BAP

Fauna:
A species search for the area was completed by the North East of Scotland Biological Records Centre (NESBReC). In addition the bird records for the site were collated by Ian Hill with additional input from Ian Francis & Tim Poole, RSPB.

Mammals:
Two UK Priority mammal species occur on the site. Red squirrel (*Sciurus vulgaris*) activity was noted in the Scots Pine woodland & plantations on Creag Clunie and Creag Choinnich. Otter (*Lutra lutra*) activity has been recorded on the Callater Burn.

Hill and woodland red deer as well as roe deer are present. Rabbits are active and locally dominant on the western slopes of Carn nan Sgliat. Mountain hares (*Lepus timidus*), a species of conservation concern, are present on the upper ridge on Carn nan Sgliat and Creag Clunie

Fish:
Atlantic salmon (*Salmo salar*), a locally important species of conservation concern, spawn on the Callater Burn.

Birds
Table 3 below, details the bird records for the area .

There are no capercaillie (*Tetrao urogallus*) or black grouse leks located within 2km of the proposed scheme. Golden eagle (*Aquila chrysaetos*) has been recorded flying over the area. The exposed crags are important roost sites for raptors. The Clunie & Callater valleys are important locations for ring ouzel (*Turdus torquatus*).

Table 3: Bird Records 2010 supplied by I. Hill

Species	***Latin name***	***Breeding status***	***UK Priority Species***
Blackcock	*Tetrao tetrix*	Present	Y
Red Grouse	*Lagopus lagopus*	Confirmed	Y
Sparrow hawk	*Accipiter nisus*	Present	
Buzzard	*Buteo buteo*	Confirmed	
Kestrel	*Falco tinnunculus*	Present	
Woodcock	*Scolopax rusticola*	Present	
Wood pigeon	*Columba palumbus*	Confirmed	
Tawny owl	*Strix aluco*	Present	
Green woodpecker	*Picus virdis*	Present	
Great Spotted Woodpecker	*Dendrocopos major*	Confirmed	
Meadow Pipit	*Anthus pratensis*	Confirmed	
Wren	*Troglodytes troglodytes*	Confirmed	
Robin	*Erithacus rubecula*	Confirmed	
Redstart	*Phoenicurus phoenicurus*	Confirmed	
Blackbird	*Turdus merula*	Confirmed	
Song Thrush	*Turdus philomelos*	Confirmed	Y
Mistle Thrush	*Turdus viscivorus*	Confirmed	
Gold crest	*Regulus regulus*	Present	
Spotted flycatcher	*Muscicapa striata*	Confirmed	Y
Longtailed Tit	*Aegithalos caudatus*	Confirmed	
Coal Tit	*Parus ater*	Confirmed	
Blue Tit	*Parus caeruleus*	Confirmed	
Great Tit	*Parus major*	Confirmed	
Treecreeper	*certhia familiaris*	Confirmed	
Carrion Crow	*Corvus corone*	Confirmed	
Chaffinch	*Fringilla coelebs*	Confirmed	
Greenfinch	*Carduelis chloris*	Present	
Bullfinch	*Pyrrhula pyrrhula*	Present	
siskin	*Carduelis spinus*	Present	
Crossbill	*unsure of species*	Present	Scottish Crossbill
Willow warbler	*Phylloscopus trochilus*	Confirmed	
Cuckoo	*Cuculus canorus*	Present	Y
Wheatear	*Oenanthe oenanthe*	Confirmed	

Amphibians:
Palmate newts (*Lissotriton helveticus*) have been recorded in the flushed areas on the lower, north facing slopes of Carn nan Sgliat and are present in the pools on Corrie Feragie.

Invertebrates:
Two UK Priority species have been recorded on the site. Wood ants (*Formica* spps.) are present within the Scots pine & birch woodlands on Creag Clunie as well as the plantation on Creag Choinnich. Northern Brown Argus butterfly (*Aricia artaxeres subsp artaxeres*) was recorded on the Lion's Face/ Corrie Feragie area in 2005. The butterfly is associated with sunny, light to ungrazed swards with rockrose and thyme on base rich soils.

NESBReC search for the period 2003 to 2009 record the following invertebrates on the Creag Clunie & Lion's Face area:

A further 4 species of butterfly:
Common Blue (*Polyommatus icarus*, 2003)
Small Heath (*Coenonympha pamphilus*, 2003)
Small Pearl-bordered Fritillary (*Boloria selene*, 2003)
Dark Green Fritillary (*Argynnis aglaja*, 2003)

6 species of moth: Silver ground carpet (*Xanthorhoe montanata*, 2009)
Barred red (*Hylaea fasciaria*, 2009)
Hook-streak Grass-veneer (*Crambus lathoniellus*, 2006)
Green carpet (*Colostygia pectinatoria*, 2009)
Yellow shell (*Camptogramma bilineata*, 2006)
Straw grass veneer (*Agriphila straminella*, 2006)

The food plants of these species range from Scots pine, bedstraw, grasses and wild thyme. Only the small heath butterfly has a habitat preference for a more open and shorter sward.

Archaeology
An archaeological records search was carried out by Aberdeenshire Council for the scheme area in 2010. The following sites are listed in the Council's Archaeological Sites and Monuments Record, see Archaeology & Hydrology Map Appendix 1.

No. 1 Easter Auchallater (Site Reference Number NO18NE0009) – Depopulated settlement, two longhouses sit on Knolls with associated field boundary walls. Whilst this site is located out with the scheme area there maybe traces of rig and furrow on the slope opposite. NOTE: A site visit by Moira Grieg, Regional Archaeologist on 24th February 2011 confirmed no rig and furrow was present on this slope.
No. 3 Corrie Feragie (NO19SE0012) – Depopulated settlement; remains of longhouses.
No. 5 Auchallater (NO18NE0005) – Depopulated settlement; There are several longhouses with curved ends and single entrances and the remains of others with partitions.

Past & Present Land-use
The lower north facing slopes of the Lion's Face and Creag Clunie fall within an area of importance to the Designed Landscape at Invercauld Castle, which originated in the mid 18th Century, with subsequent modifications over the following centuries. The southern boundary of the Designed Landscape today is delineated by the A93 public road.

A study into the Invercauld Designed Landscape, undertaken by consultants Turnbull Jeffery Partnership in 1997, recognised the wild wood character of Creag Clunie.

Thomas Pennant c. 1769 remarked that the hills around Invercauld were clothed with trees, particularly birch:

"*…the southern extremity is pre-eminently magnificent: the mountains form a vast theatre, the bottom of which is covered with extensive forest of pine*" (Turnbull Jeffery Partnership, 1997).

This historical record refers to Creag Clunie and Creag Choinnich to the west.

During the late 18th through the early 19th Centuries, the 10th laird of Invercauld took up tree planting on a grand scale, including exotic tree species such as larch. Exotics were often introduced into native woodland for landscape effect, for example the larch on the Lion's Face, which has since naturalised.

A Woodland Grant Scheme (WGS) Deeside Forest Challenge Fund application (reference number 031000597) was approved by the Forestry Commission in 1999, (see WGS scheme map page 18). The scheme totalling 437ha, included 230ha of the Creag Clunie & Lion's Face SSSI and the western extension of the Ballochbuie SAC & SPA, along with the western slopes of Carn nan Sgliat. The scheme consisted of 312ha of native woodland management encompassing the Caledonian pinewoods on Creag Clunie and birchwoods on Carn nan Sgliat with, 94ha of natural regeneration (which included the open ground on Allt na Claise Moire, the ridge between Creag Clunie and Carn nan Sgliat, and the north-western heather slopes of Carn nan Sgliat) without deer fencing. The focus was instead on deer control measures based on agreed annual cull targets as set out in a Deer Management Plan. Mr Ian Hill was employed as a dedicated wildlife ranger to undertake the approved deer cull targets and rabbit control measures within the scheme area to initiate woodland regeneration. Detailed in Table 4 below are the annual cull figures for red & roe deer during the 10 year period of the WGS. Over the period of deer control measure, changes were noted in the behaviour of red deer with them using the woodlands at night and moving onto the open hill during the day.

Table 4: Creag Clunie Cull Data 1999 to 2010 *supplied by I. Hill*

Year	Stags/Bucks	Hinds/Does	Calves/Kids	Totals
2000	24	41	15	80
2001	42	37	14	93
2002	25	19	4	48
2003	11	19	4	34
2004	17	10	7	34
2005	19	13	6	38
2006	16	7	1	24
2007	14	21	6	41
2008	18	12	2	32
2009	17	14	4	35
2010	11	16	4	31
Total	**214**	**209**	**67**	**490**

As part of the WGS scheme, a monitoring programme was established for the scheme area in 2000 with follow up monitoring in 2002 & 2004 with the principle aims of:

1. Assessing tree regeneration and recording seedling height and browsing damage in fixed quadrats over a five year period.
2. Assessing the impacts of grazing and trampling on dwarf-shrub heath vegetation.
3. Estimate deer occupancy by means of dung counts in quadrats.

The 2005 monitoring report concluded the following:

> Prior to the commencement of management for natural regeneration, persistent browsing by red deer, roe deer & localised rabbit populations had limited the development of young trees and shrubs over this site. The older 'seedling bank' was found to
>
> consist mostly of birch and rowan with scattered juniper and Scot pine. The reduction in red deer, roe deer & rabbit numbers, as expected, resulted in a good growth response from these seedlings. However lower numbers of individuals in the seedling bank were recorded particularly on the moorland areas to the east of Creag Clunie, with future regeneration relying on inputs from the adjacent seed sources and therefore the occurrence of good seed years, particularly for Scots pine, (SNW, 2005).
>
> Impacts on dwarf-shrub heath vegetation in 2000, along with measurements of mean utilisation rate of heather, indicated that there was some cause for concern in relation to the long-term sustainability of heather vegetation across the site. However, as was expected, impacts in 2004 showed a marked reduction in percentage shoots grazed and a general increase in height of heather following the initiation of the culling policy. However, further heavy culling and the passage of time will be required to enable existing as well as new seedlings and saplings to establish and grow, before woodland regeneration is seen as a reality over the site in general, (SNW, 2005).
>
> The numbers of wild herbivores present on Creag Clunie prior to the start of active management to regenerate the woodland were unknown. In 2000 the overall density of red deer was estimated at 24 red deer per sq km. By 2004, this estimate had reduced to 12 red deer per km^2 an estimated halving of the population between 2000 and 2004 however, in excess of the 4-8 deer per sq km that is considered to be required to achieve tree regeneration (FC, undated), (SNW, 2005).

In 2003 FCS approved a five year Woodland Improvement Grant (WIG) for Biodiversity covering 107ha of the native pine & birch woods on Creag Clunie & the Lion's Face SSSI & SPA. The application focused on maintaining and enhancing capercaillie by implementing a programme of predator control measures in line with LIFE Nature III Capercaillie Restoration Project guidance.

Present of on Creag Choinnich and lower eastern slopes of Creag Clunie are predominantly Scots pine plantations managed on an 80 to 175 year

rotation under Low Impact Silvicultural System (LISS). The seed sources of these plantations are local origin or local plantation origin pine (Callander & MacKenzie, 1994). Management of this area will be included under a Forest Plan which is currently under development for Invercauld Estate.

The heather slopes on the western face of Carn nan Sgliat and Millstone Cairn are located at the northern tip of the 16,500 ha Callater Beat which extends south to the Cairnwell. The Callater Beat is managed for sporting objectives, both driven grouse shooting and red deer stalking, by Invercauld Estate's gamekeepers. A programme of muirburn has commenced on the western face of Millstone Cairn over the last 10 years although no grouse drives have been undertaken on the area.

The scheme lies within the East Grampian Deer Management Group sub area 2. An annual red deer census, using digital as well as visual counts, has been completed by Scottish Natural Heritage, formally the Deer Commission for Scotland (DCS), of the East Grampian Deer Management Group area. The 1km² counts which were undertaken within the scheme area over the last five years are detailed in Table 5 below. In addition to the SNH/ DCS counts, annual foot counts were also undertaken by Invercauld Estate staff, Messer I. Hill & P. Fraser, on the Lion's Face & Creag Clunie and are detailed below.

Table 5 – Red Deer Counts Information supplied by SNH & I. Hill

Year	Stags		Unclassified animals		Totals	
	Invercauld Estate	SNH	Invercauld Estate	SNH	Invercauld Estate	SNH
2006	-	5	-	47	-	52
2007	12	0	53	57	65	57
2008	29	13	54	77	83	90
2009	18	3	86	50	104	53
2010	32	8	117	39	149	45

Under previous WGS sections of redundant deer fencing were removed around the north-western boundary of the native birchwood and the Scots pine plantations on Creag Choinnich. The scheme is currently enclosed by an existing deer fence on the northern and north western boundaries, i.e. along the A93 public road between Invercauld bridge to the Braemar golf course. A short section of deer fence occurs along the lower half of the Allt na Claise Moire burn. See Fencing Map Appendix 6.

The MLURI Native Woodland Model run for Invercauld Estate predicted the potential occurrence and distribution of woodland and scrub communities on this area to be dominated by W18 *Pinus sylvestris – Hylocomium splendens* woodland and W17 *Quercus petraea – Betula pubescens – Dicranum majus* woodland of the National Vegetation Classification (Rodwell, 1991a) with montane juniper scrub (W19) on the highest ridges.

Invercauld Estate marches with Balmoral Estate to the east of Sron a' Bhruc. The neighbouring moorland area is managed for sporting objectives both driven grouse shooting and deer stalking.

Status:
In 1998, 253 ha of Creag Clunie and the Lion's Face were designated a Site of Special Scientific Interest (SSSI) for its Caledonian pine woodland and associated bird species (capercaillie & Scottish crossbill) as well as its lichen flora (elm G*yalecta* lichen) notably on the Lion's Face. The SSSI area was also designated a Special Area of Conservation (SAC) under the Habitats Directive and Special Protection Area (SPA) under the Birds Directive in 2000 as an extension to the Ballochbuie SAC & SPA. The SSSI area also lies within the larger Cairngorms Massif SPA for golden eagle designated in 2010. See Designations Map Appendix 4.

The overall long term objectives for management for the SSSI is "*to maintain the integrity of the features of interest of the site (international, national & local features), (SNH, 2000).*

> *To maintain and if possible expand the Caledonian pine woodland by encouraging natural regeneration in suitable areas up to its natural upper limit.*
>
> *To maintain the diversity and range of plant & animal species contributing to the European and national interest of the Caledonian pine woodland.*
>
> *To maintain, and where possible enhance, the structure, deadwood component and abundance and diversity of native fauna and flora within the Clunie plantation by using e.g. variable felling coupes or continuous cover forestry.*
>
> *To maintain favourable site condition for the Schedule 8 lichen and associated species on the Lion's Face.*
>
> *To maintain favourable site condition for the hosted Annex 1 habitats (i.e. dry heath, wet heath, species-rich Nardus grassland) in the context of a pine woodland site.*
>
> *To maintain the populations of Annex 1 bird species, especially Scottish Crossbill and capercaillie at present levels."*

SNH staff undertook site condition monitoring of the designated features of the Creag Clunie & the Lion's Face SSSI:

> *Capercaillie* in 2001/02 – fresh droppings were found, favourable condition. "However it should be noted that the woodland is not ideal capercaillie habitat as it exists as a small block of woodland in quite close proximity to the main A93 trunk road."
>
> *Caledonian pinewood* in 2002: "... in favourable condition, all targets met, although limited regeneration was observed."
>
> *Elm Gyalecta lichen* in 2003: favourable condition. "Most of the trees located near the lichen colonies are already mature and will not grow much further and thus shade the lichen. Some bird cherry grows on slopes below the cliffs and this may threaten these colonies in future if it grows up to and shades the cliff."

The entire pine woodland on Creag Clunie as well as Creag Choinnich along with the remnant birchwood on the lower western slopes of Carn nan Sgliat are classed as of ancient semi-natural origin on SNH's Ancient

Woodland Inventory. Reference to Roy's Military maps of the 1750's reveals the presence of a much larger area of native woodland than exists today on the slopes of Carn nan Sgliat extending south to Easter Auchallater.

The Callater Burn (a tributary of the Clunie Water) is part of the River Dee SAC for Atlantic salmon, otter and freshwater pearl mussel (*Margaritifera margaritifera*).

Public & Educational Use
There is an excellent network of footpaths, several of which are designated Core Paths by CNPA (CNPA, 2010), in the vicinity of Creag Choinnich which are well used by both walkers and cyclists. These include:

- UDE 16 – Braemar Castle to the Queen's Drive
- UDE 17 – The Queen's Drive
- UDE 18 – Braemar village to the Queen's Drive
- UDE 19 – Creag Choinnich

The woodland on Creag Choinnich is currently deer fenced and has appropriate access provision in the form of deer height pedestrian gates along the fenceline, (Fran Pothecary CNPA coms).

An informal footpath is used by walkers to link the Queens Drive to the cairn on top of Carn nan Sgliat following the line of an old stone dyke. See Access Map Appendix 5.

LANDSCAPE AND VISUAL IMPACT ASSESSMENT
Prepared by Simon Bell

1. INTRODUCTION

This section considers the linked aspects of landscape and visual impact assessment. This means that the potential effects on the landscape, its character and any special elements as well as the visual impact of the proposals on residents and visitors must be evaluated. These two aspects consider landscape, firstly, as an object which is described and analysed in order to define what makes one area identifiably different from another and therefore the likely affect of planting on this character. The second aspect is the subjective perception and experience of people in relation to the landscape. Both aspects inform each another – character is partly defined by the way the landscape is perceived and perception is affected by the character of the landscape. In landscape and visual impact assessments the two aspects are often kept separate. In this assessment the connections will be kept as far as possible.

The steps of the approach are as follows:

1. Baseline assessment of the current landscape. This considers the existing character, the mode of experience of the landscape and uses a sample of key viewpoints to present the visual condition and qualities likely to be affected. The sensitivity and capacity of these landscape and visual resources to the changes likely to occur through extensive forest planting is also considered.
2. The essential elements of the landscape design of the proposal are presented and the way that landscape character and the potential effect on the key viewpoints are taken into account in the development of the proposal are explained and presented using visualizations. The intention is not to present a proposal with little or no design consideration and then undergo mitigation measures but rather to ensure that the design takes direct account of these factors as it is developed.
3. The potential landscape and visual impact of the proposal is evaluated and conclusions are drawn by assessing it against the sensitivity and capacity of the landscape as demonstrated in the baseline assessment.

2. BASELINE ASSESSMENT

2.1 Setting and context

The proposed woodland creation area at Creag Clunie lies on a well-defined landform unit which encompasses the eastern side of the junction of Glen Clunie with Upper Deeside. The northern section of the area is already wooded with mature pine and mixed conifer stands on a series of steep rock outcrops and this portion forms a major part of the setting of the village of Braemar. These rocks and crags also overlook the Dee valley and form part of the landscape composition of Invercauld House, providing picturesque views with diverse tree stands to emphasise the landscape. The southern section dominates lower Glen Clunie and is

currently almost bare of trees, only a few patches of relict birch being found here and there. The managed heather moorland is broken by patches of quartzite scree on mid slopes and rocky outcrops on the upper slopes. Muirburn gives the area a characteristic pattern. While the Dee valley is generally quite well wooded Glen Clunie is much less so at present, although an area on the west side opposite the proposal was planted in 2011 and this will also add significantly to the change in character expected to take place. The area is in Cairngorms National Park and Deeside and Lochnagar National Scenic Area.

2.2 Landscape character

Cairngorms National Park has recently produced a new landscape character assessment which is split into two main sections: lowlands and uplands. The area proposed for planting is covered by several of these relatively small lowland LCA units: the southern section of Upper Deeside: Invercauld; a small portion of the eastern section of the Upper Deeside: Allanaquoich Haughland (which will be ignored); the eastern section of Glen Clunie; Lower Glen. A small peninsular of the upland unit of Southeastern Hills: Southeastern Glens encompasses the entire area of the proposal. This leads to a huge overlap of the two systems of character areas which needs to be resolved in this assessment. Braemar is not included in the LCA. While in objective terms it would be simpler to use the upland unit, because of the main experiential aspects and viewpoints being from the lowlands and from other parts of lowland character units which are outwith the planting area it makes sense to include key aspects in the assessment. Table 6 summarises the main aspects of these LCA units which are relevant to the proposal, taken from the CNP LCA.

Table 6: Summary of main features of LCA units relevant to the Creag Clunie proposal(source: CNP LCA)

LCA UNIT	**MAIN FEATURES**
Upper Deeside: Invercauld	• The valley of the Dee swings round the small, craggy-topped conical quartzite hill of Creag Choinnich, a prominent feature at the junction between Glen Clunie and Deeside, to orientate northwest/south east. • Glaciers moving down Glen Clunie and converging with those along the Dee crowded towards the 'pinch point' of erosion through a resistant rock bar near Invercauld Bridge. This resulted in major glacial erosion, forming cliffs and crags and the Dubh Clais melt water channel in the granite on the southern flank of the valley • This is an extensively forested area with a mix of managed conifer woodland and more naturalistic native pine woodland on the hill sides. • 18th century Invercauld House, refashioned in the Victorian period, is set on a broad terrace above the Dee. • The house is a key focus in the extensive designed landscape, developed after the Jacobite rising. It overlooks parkland of informal clump and roundel

	plantings of larch, beech and occasional specimen trees, generally planted on small knolls and terraces. • A number of follies and monuments form part of this designed landscape. Natural features such as the 'Lion's Face', a craggy rock face to the south of the A93, have been accentuated by planting of larch and pine to form an 'eyecatcher' in views
Glen Clunie: Lower Glen	• The north/south aligned Glen Clunie links the high pass of the Cairnwell and the wooded glens of Deeside • The glen is framed by sweeping, concave-shaped hillsides rising to upper slopes of rugged rocky summits, with occasional screes reflecting post-glacial weathering • The glen floor is a well defined floodplain worked flat by the Clunie Water and edged with hummocks and terraces of well drained fluvio-glacial deposits • The floodplain is subdivided into regularly shaped, 18th/19th century improved fields which are fenced and grazed and, closer to Braemar, it is occupied by a golf course • The upper slopes are heather moor, and there is one conifer woodland associated with more accessible lower slopes above the floodplain • Occasional mature trees and sparse riparian woodland ensures that the glen appears open • There is some conifer shelter wood on the lower side slopes, which changes to more extensive birch woodland approaching Braemar • Settlement is limited to occasional late-18/19th century farmsteads, which appear to be on the sites of older settlements, located on the higher, free-draining hummocks of deposit at the edge of the glen • The main public road, on the eastern side of the glen, is elevated, sitting on top of deposits at the edge of the glen
Southeastern Hills: Southeastern Glens	• The irregular topography of interlocking ridges, long glens and the complex terraced terrain reflects the effects of erosion acting on Dalradian schist bedrock of diverse lithology • The long, often narrow, glens are contained by a complex topography of shallow side glens, intervening rocky ridges and truncated spurs created by a glacial activity deepening much older, broader valleys • These long, enclosed glens, such as Glen Tilt, Glen Taitneach, Glen Ey and Glen Clunie, penetrate deep into the interior of the mountains, forming passes which link Deeside with the Perthshire lowlands. • The hill tops are sinuous ridges or individual summits, rising to over 1000m, and many of the highest peaks are very steep-sided with summits rising above extensive scree slopes, created by post-glacial

	weathering of frost-susceptible quartzite • Heather and blaeberry over the upper glen slopes is often, although not always, managed as grouse moor, while extensive acid grassland with occasional bracken extends along lower slopes • The narrow floodplains on the glen floors carry more fertile grasslands on calc and mica schists, often maintained by continued grazing • Occasional conifer woodland extends into the most accessible glens, often established as shelter woods close to former farms or estate buildings • Elsewhere, broadleaved woodland is located on more inaccessible slopes, with riparian woodland along many of the watercourses, particularly to the west of this character area.

From Table 6 it can be seen that the character of the landscape is driven by the geology and glaciation overlain by natural vegetation and human activity. The steep cliffs and crags of the Lion's Face and Creag Choinnich at the north end of the site overhang the valley of the Dee and provide important picturesque elements used in the composition of the Invercauld policies, supplemented by the addition of larch and other trees. The rest of the site is a somewhat transitional landscape between the upper valleys of Glen Clunie and Glenshee and the Dee. The flat bottom of the glen, with cultivated land and golf course has fewer wildland qualities than the upper sections and the existing woodlands already impart more of a managed appearance.

The backdrop and setting for Braemar should not be overlooked as an important aspect, although there is no LCA for the village. Nevertheless, the feature of Creag Choinnich is an element that imparts Genius loci to the area. The designed landscape around Invercauld House and its use of borrowing of landscape elements beyond the policies is an important factor to bear in mind. Luckily the land is all part of the estate and under its control so that any impact on this can be rectified at the planning and design stage.

2.3 National Scenic Area

The proposed woodland scheme lies in the Deeside and Lochnagar National Scenic Area.

2.4 Invercauld Designed Landscape

The views from the designed landscape at Invercauld, especially from the house but also from walks laid out for the purpose of experiencing the landscape are important. The designed landscape is recorded in the Historic Scotland Inventory and the map shows the area of the Lion's Face and Creag Choinnich as an integral part of the landscape. The estate is given high or outstanding scores, especially for its historical and scenic values. While only small sections of woodland expansion lie within the visible area, these may have impacts on the values if not considered in the woodland design.

Table 7: Summary of sensitivity of landscape resources

LANDSCAPE RESOURCE	***DISTANCE FROM THE SITE***	***LEVEL OF IMPORTANCE***	***LEVEL OF SENSITIVITY***
Landscape character areas:			
Upper Deeside: Invercauld	*Site is partly in the area*	*N/A*	*High*
Glen Clunie:Lower Glen	Site is in the area	N/A	High
Southeastern Hills: Southeastern Glens	Site is in the area	*N/A*	*High*
Designations:			
National Park	*Site is partly within the designated area*	*National*	*High*
National Scenic Area	Site is within the designated area	National	High
Invercauld designed landscapes	Part of site is in designed landscape	National	High

2.5 Experience of the landscape

The landscape of Creag Clunie is experienced in many different ways. Residents in and around Braemar see the hill in glimpsed views from a number of locations, although clear views of the whole area are rare. The old military road leading south on the west side of the Water of Clunie offers some views such as from the golf course.

Travelling into or out of Braemar in the A93 offers views of different sections of the landscape and the LCA units are to a large extent bounded by viewsheds where a specific set of views are contained. The experience travelling from east to west and then south on the A93, coming up Deeside and then passing through Braemar and continuing up Glen Clunie presents an experience where the road, passing beneath the Lion's Face

and Creag Choinnich means that views are focussed north across the Dee towards the policies of Invercauld. The roadside is dominated to the south by the trees on the steep slopes. Passing through the village the area is more-or-less out of sight until leaving the built up area, when views of parts of the slopes are obtained before the road runs along the foot of the area proposed for planting allowing views to be focused over the Water of Clunie and up the glen. Thus, in this direction Creag Clunie is not a dominating feature. As the traveller proceeds along the road the landscape becomes ever more wild, treeless and remote with fewer signs of human activity.

Travelling from south to north and then east along the A93 presents a different picture, where the road descends from Glenshee down into Glen Clunie and the area proposed for planting appears in the focus of the view some considerable distance up the road. The area starts as a small-scale element framed by hill ridges and gradually grows in significance as the road descends the glen. It is a major feature for a section of road before the road follows the lower edge of the slope and the focus switches across the glen. The feature of Creag Choinnich appears from time to time until the traveller enters Braemar. On emerging through Braemar the attention is focused on the northern banks of the Dee and the policies of Invercauld so that Creag Clunie disappears from attention.
Walkers in the area can experience the landscape in various ways. One popular location is the walk up to the summit of Creag Choinnich and the sweeping views in all directions including south across the main ridge of Creag Clunie. This is perhaps less interesting than the views down Deeside or up Deeside and Glen Clunie. Walks in Invercauld Estate on the north side of the Dee offer some views south to the Lion's Face and Creag Choinnich. The main peak route is up Morrone where views back towards Creag Clunie vie with sweeping vistas towards the Cairngorm massif and down Deeside.

2.6 Viewpoints

Based on the expression of landscape experience a set of 8 representative viewpoints has been selected for use in the assessment. These include ones from the A93 travelling north and south, some from in and around Braemar, one from Creag Choinnich, one from Invercauld Estate and one from Morrone. Table 8 presents the viewpoints, their main features and their sensitivity.

Table 8: Summary of viewpoints used in the assessment.

VIEWPOINT NUMBER AND LOCATION	OS REFERENCE	CHARACTERISTICS
1. A93 travelling northwards	NO 314967, 786861	This view shows the more distant view of Creag Clunie which is also focal in the view, the eye being led towards it by the road, river and ridgelines on either side of the scene. Travellers see this scene for some distance as they come down Glen

		Clunie, moving from the wild heart of Glenshee to the more settled valley of the Dee. At present the landscape is largely devoid of trees so when planted the slopes will also be the first forest visible in the landscape, so acting as a transition from wild and treeless to settled and wooded. This viewpoint is highly sensitive because it is a focal view obtained by large numbers of tourists as well as residents.
2. A93 travelling northwards	NO 315405, 788109	The view starts to open out as the glen widens and some settled and cultivated land appears in the flatter bottom. More of the proposed planting area becomes visible. It remains focal in the view and as the traveller draws nearer more detail becomes apparent such as scree and rock. This viewpoint is highly sensitive because it is a focal view obtained by large numbers of tourists as well as residents.
3. Golf course, Braemar	NO 315193, 789869	This represents some of the lower views of the proposed planting area as seen by residents of Braemar and its surroundings. The hill rises above the flat river valley bottom with a line of trees separating the green manicured turf from the heather slopes. Scree is visible on part of the area. Creag Choinnich appears to the left of the view but is not a strong feature yet. This view is moderately sensitive since fewer people see it.
4. Footbridge over Water of Clunie, close to Braemar	NO 315055, 790977	This view represents the type of view glimpsed from various points around Braemar, where buildings and trees tend to obscure the view so that complete panoramas are rare. The wooded feature of Creag Choinnich, to the left of the view, is more visible in this view and patches of birch on the lower slopes in the middle of the scene as well as trees elsewhere in the landscape provide some links with the proposed planting. This viewpoint is moderately although it represents what most villagers will see at least in part.

5. Creag Choinnich	NO 316051, 791769	This viewpoint is a popular walk for tourists and others offering spectacular views all round the landscape. This aspect is looking south, with the proposed planting area in the centre, seen in conjunction with Glen Clunie to the right and The Dee valley to the left. The broader landscape can be seen as a mosaic of fields and forest on the lower slopes and valley bottoms with forest and moor on the upper slopes. The area proposed for planting already has some forest on the northern slopes extending south and westwards into some of the side valleys. There are also small pockets of birch in some of the gullies. This is a highly sensitive viewpoint owing to its popularity and also the sheer quality of the views, although they may focus more on the Dee.
6. A93 travelling southwards, close to Braemar	NO 315450, 790953	This is the main view of the area proposed for planting obtained by travellers leaving Braemar. Up to this point there are too many trees to see anything and beyond this point the road follows the lower edge of the site so that little can be seen and the attention of travellers is drawn to the west side of the glen. The scattered remnants of birch already provide some wooded elements to this smaller scale composition – most of the site is hidden behind the rise of this visible slope. This is highly sensitive because of the large amount of tourist traffic and also because it is the first view obtained on leaving Braemar.
7. Footpath in Invercauld Estate	NO 318351, 792207	This viewpoint is looking to the north of the River Dee overlooking the Lion Face and Creag Choinnich. This is a popular route giving superb views over the Dee valley, somewhat filtered by trees so that it is difficult to see it all at once. Most of the area proposed for planting is not visible but sections at the top of the deep side valleys will be wooded, extending the existing forest. Highly sensitive because it is also associated with views from the policies as

		well as being popular for visitors.
8. Summit of Morrone		Moderately sensitive because it is not an especially popular summit in CNP

Table 8 is also supplemented by Figures 2-9 in the visual materials, see Appendix 7, where panoramic photographs from each viewpoint are presented.

2.7 Landscape capacity

From the LCA and the selected viewpoints it can be seen that the area proposed for woodland expansion lies in a somewhat transitional area, from the wooded character of Deeside, where forests lie on almost all the valley sides in this LCA type, to the upper Glen Clunie with its remote and wilder character. Since the area would have been forested once upon a time, although not for several centuries at least, forest can be considered as part of the natural landscape and the lower Glen Clunie, with more visible signs of human intervention than the upper section and already with woodland expansion underway (the new Morrone block) certainly has capacity for woodland expansion. The proposed southern limit of the afforestation lies exactly at the point where the character changes from the lower to upper Glen. This is a logical place to locate the margin and the use of a side valley is also logical. Thus the idea of forest sweeping up into Glen Clunie out of Deeside seems perfectly logical. While the character will change from more open to more forested, this is not a change that is inappropriate.

The visual capacity of the landscape depends on the appropriateness of the proposal and the way it is designed to be unified, to maintain diversity and to relate to the shape and scale of the landscape. By designing the forest to fit into the scene as experienced from the viewpoints and when travelling around, the capacity is unlikely to be exceeded. The transition from Deeside up Glen Clunie will be visually experienced by travellers but there will be no abrupt or illogical transitions. The landscape will change in visual character.

3. DESIGN DEVELOPMENT

3.1 Factors influencing the forest design

The main factors affecting the layout and composition of the proposed woodland expansion are climate, elevation and soils, as noted elsewhere in this Environmental Statement. These factors led to the development of the main concept which was presented at the scoping meeting. This envisages a native pine forest extending up and over the tops, because the summits are below the climatic treeline for this part of Scotland. As well as Scots pine, birch and a range of lesser native broadleaves will be included. The dry podzolic or peaty podzolic soils are suited to pine with birch tending to be denser or pure on lower slopes and in wetter flushes as well as generally being in mixture with the pine. Alder, aspen, willows, rowan etc will also be components.

The other factors affecting the design are the shape and scale of the landscape, the presence of rocky outcrops and scree, the presence of the A93 and the location of the deer fence. Map 1 and Figures 10-16 in Appendix 7 present the local landscape character analysis used to understand the landscape of the area proposed for woodland development. The landform is expressed using the concept of "visual forces" and other factors have been noted on the map and the photographs.

The basic concept map has been developed into a more complex plan with areas of pine shaped to follow landform and to reflect the scale of the landscape as described in the various guidance produced by the Forestry Commission. These shapes are more complicated and organic than the layout shown in the concept. The forest comprises:

- More or less pure native SP (some other species will naturally colonise over time), planted and naturally regenerating, expected to grow into normal trees
- SP with an admixture of birch and other broadleaves, planted or naturally regenerating, but with planted areas specified in shape and scale.
- Native birch and other broadleaves with an admixture of SP, planted and with some areas of natural regeneration
- More or less pure broadleaves (birch plus other species) both naturally regenerating from remnant stands and planted
- Riparian woodlands of alder, willow etc, planted.

The design has been developed and is illustrated using computer-aided-design perspectives which visualise the design from the selected viewpoints (Map 2 and Figures 17-23 in Appendix 7).

4. ASSESSMENT OF IMPACTS

4.1 The impacts on each of the landscape and visual resources are assessed using a set criteria based on the scale and nature of the impact on each resource balanced by the level of sensitivity calculated at the baseline stage.

4.2 Impact on landscape resources. This depends on the combination of direct and indirect effects that the proposed planting will have on the resource. Since the planting will be within the boundaries of most of the landscape resources the impacts are likely to be greater. However, impacts can be positive, neutral or negative and how this is interpreted involves professional judgement and, since it is largely qualitative in nature is not entirely susceptible to conclusions solely based on the application of a set of standardised measures. Positive impacts are those where the landscape resource is improved or strengthened, negative impacts where they are changed for the worse and neutral where the changes may have no real effect on quality either way. The capacity of the landscape to accept more forest is not a problem so that it is mainly necessary to consider the effect on character, while noting that existing

character is not sacrosanct and that landscapes are continuously evolving over time.

4.3 The following Table 9 presents the assessment of impacts of the proposal on each landscape resource identified in the baseline study.

LANDSCAPE RESOURCE	***LEVELOF SENSITIVITY***	***NATURE OF THE EFFECT***	***LEVEL OF SIGNIFICANCE OF IMPACT***
Landscape character areas: Upper Deeside: Invercauld	*High*	Since only part of the site is within this LCA and is already mainly forest, as well as forming an integral part of the character of the area the effect is small, limited to some extension of forest in places. The proposal will expand forest in this character type so that in some ways it will change from an open to a forest landscape. However, this change is in keeping with the character and is neither especially adverse nor beneficial. This is a large character type that is only affected in a small area and the same comments as for Lower Glen Clunie apply	Permanent, slight neutral
Glen Clunie:Lower Glen	*High*		Permanent, moderate, neutral
Southeastern Hills: Southeastern Glens	*High*		*Permanent, low, neutral*
Designations: National Park Designed	High	In the context of the park as a whole, where	Permanent, moderate neutral

landscapes National Scenic Area	High	woodland expansion is a strategic aim, this extension of forest is logical and fits into the landscape. It is perhaps neither adverse or beneficial in absolute terms The character of the NSA is partly dependent on the presence of forest helping to provide the picturesque qualities that led to its designation	Permanent, moderate neutral

4.3 The overall picture of the impacts on landscape resources is neutral in nature and generally moderate in significance. Give that the proposal is for woodland planting all changes are permanent.

4.4 The conclusion is that the impacts of the proposal on landscape resources are such that no mitigation is required.

4.5 Impact on visual resources. This impact depends on the sensitivity of the viewpoint, representing the people who see the landscape. The nature of the impact depends on how much of the view is affected and what happens to the view, for example being blocked or enclosed. This section should be read in conjunction with the visualisations. Table 10 presents the assessment of impacts of the proposal on each viewpoint identified in the baseline study.

Table 10: Summary of impacts on visual resources

Viewpoint number	Overall sensitivity	Nature of the visual effects	Significance
1	H	A focal view down the glen changes from open moorland to forest	Permanent, major, neutral
2	H	The view which incorporates other woodland and fields will become more dominated by forest.	Permanent , major, neutral
3	M	The forest is seen in the context of the views over the golf course and the scale of the visible portion is limited.	Permanent, moderate, neutral
4	M	The forest is seen together with houses and other built features and the scene is limited in scale	Permanent, moderate, neutral

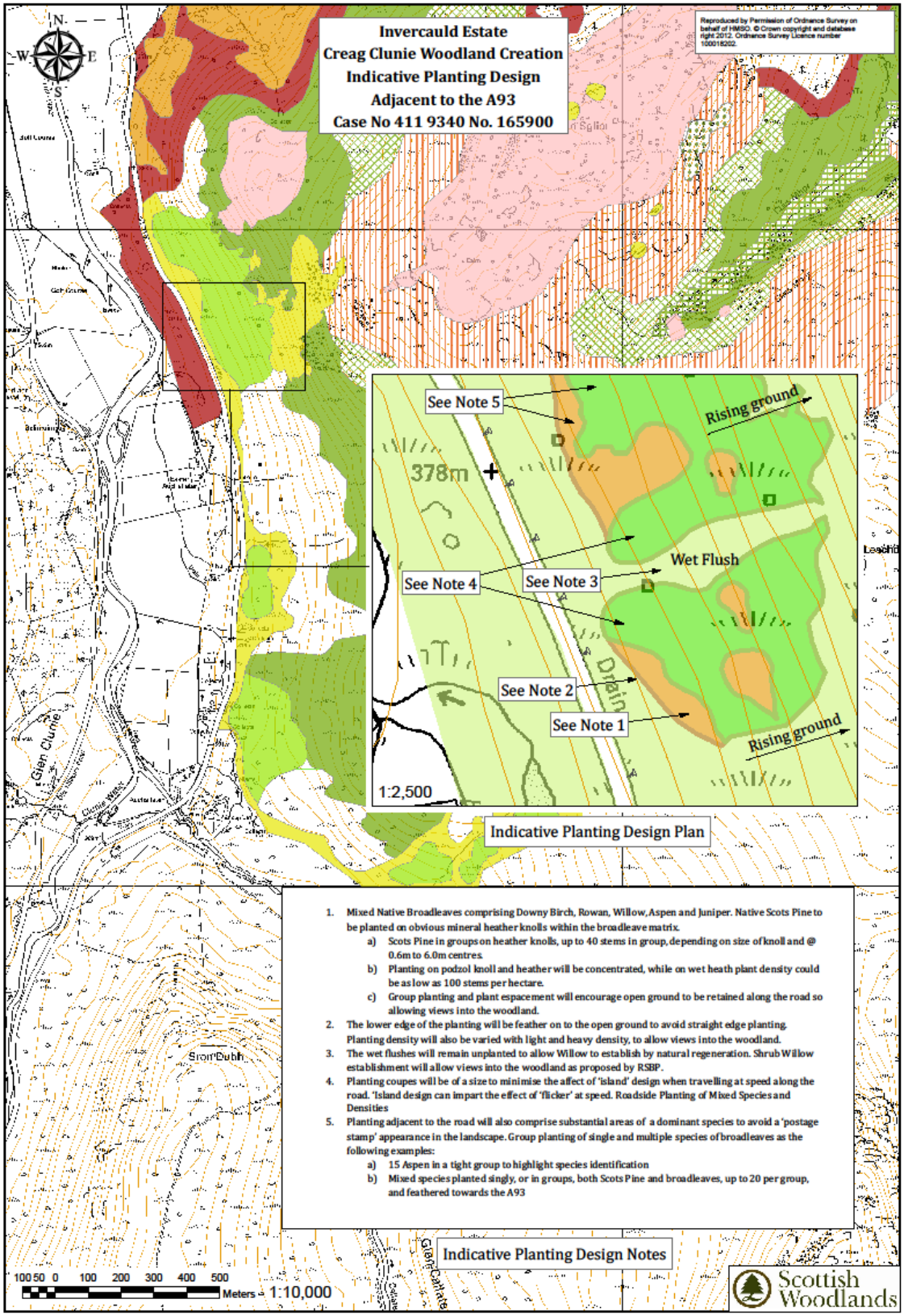
5	H	The forest is seen together with a sweeping panorama where forest is a major element already.	Permanent, major, positive
6	H	The small scale of the visible area and the existing woodland mean that the change will not be so significant	Permanent, moderate, positive
7	H	There will be little change to the view and the additional forest will link well with the existing areas.	Permanent, minor, positive
8	M	The enormous scale of the scene from the summit means that the area is a small element and naturally connects with existing features.	Permanent, moderate, neutral

4.7 The impact assessment assumes that the nature of the effect, while major or moderate in significance, is generally neutral or, in places, positive. The assumption is based on the fact that the project involves planting native woodland in a landscape already characterised by forest and in a way that maximises the design opportunities. Therefore, while there are changes, these can hardly be seen as adverse when compared with developments such as large buildings, wind turbines or motorways. They are mainly neutral in that they add woodland to the landscape but in such a way that the character is respected. In the case of forest planting the changes happen so slowly and over such a long period that most people get accustomed to the change. This is in contrast with the more dramatic changes occurring when large objects are being constructed and which affect people much more

4.8 The conclusion is that the impacts of the proposal on visual resources are overwhelmingly moderate in significance that no mitigation is required since the design has been carefully developed to fit into the landscape.

In response to additional landscape comments regarding the treatment of the woodland edge along the A93 road from Ms Penny Lawson CNPA, (ref letter dated 28th September 2011 in Appendix 8), the following detail was produced (see following):

- *An indicative planting design adjacent to the A93 road.*
- *Method statement outlining the factors identified within the EIA which have informed the road edge design.*


Invercauld Estate
Creag Clunie Woodland Creation
Indicative Planting Design
Adjacent to the A93
Case No 411 9340 No. 165900
Reproduced by Permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2012. Ordnance Survey Licence number 100018202.
N.
W
E
S
See Note 5
Rising ground
378m
Wet Flush
See Note 4
See Note 3
Drain
See Note 2
See Note 1
Rising ground
1:2,500
Indicative Planting Design Plan
1. Mixed Native Broadleaves comprising Downy Birch, Rowan, Willow, Aspen and Juniper. Native Scots Pine to be planted on obvious mineral heather knolls within the broadleave matrix.
a) Scots Pine in groups on heather knolls, up to 40 stems in group, depending on size of knoll and @ 0.6m to 6.0m centres.
b) Planting on podzol knoll and heather will be concentrated, while on wet heath plant density could be as low as 100 stems per hectare.
c) Group planting and plant espacement will encourage open ground to be retained along the road so allowing views into the woodland.
2. The lower edge of the planting will be feather on to the open ground to avoid straight edge planting. Planting density will also be varied with light and heavy density, to allow views into the woodland.
3. The wet flushes will remain unplanted to allow Willow to establish by natural regeneration. Shrub Willow establishment will allow views into the woodland as proposed by RSBP.
4. Planting coupes will be of a size to minimise the affect of 'island' design when travelling at speed along the road. 'Island design can impart the effect of 'flicker' at speed. Roadside Planting of Mixed Species and Densities
5. Planting adjacent to the road will also comprise substantial areas of a dominant species to avoid a 'postage stamp' appearance in the landscape. Group planting of single and multiple species of broadleaves as the following examples:
a) 15 Aspen in a tight group to highlight species identification
b) Mixed species planted singly, or in groups, both Scots Pine and broadleaves, up to 20 per group, and feathered towards the A93
Indicative Planting Design Notes
100 50 0 100 200 300 400 500
Meters
1:10,000
Scottish Woodlands

Method Statement:
The additional information below is to specifically inform and address the remaining comments from CNPA regarding the treatment of the woodland edge along the A93 road.
The proposed planting design along the A93 reflects a number of site factors. These include:

- Landscape Scale: EIA reference page 17 Landscape Assessment prepared by Simon Bell.
- Archaeology – Auchallater (NO18NE0005), EIA reference page 11 and Archaeology & Hydrology Map Appendix 1. Requirement to retain site as open ground with a 10m buffer.
- Hydrology – Private Water Supplies for both Easter Auchallater and Auchallater, EIA reference page 2 and Archaeology & Hydrology Map Appendix 1. Requirement for no ground preparation or planting within 5m of the supplies.
- Habitats – Muirburn management has occurred in all these areas.
    - Ancient Birch Woodland (NVC W17) – Birch with rowan, alder, aspen, bird cherry, juniper and willow species including goat willow & eared/ grey willow. EIA reference pages 6 & 7 and Habitats, Woodland and Designations Maps Appendices 2, 3, 4. The management focus within a 30m buffer area is natural regeneration to perpetuate native genotypes, with no scarification to minimise disturbance.
    - Heaths (NVC H12) & Mires/ Wet Heath (NVC M16) – The heather moorland, dominated by *Calluna* with blaeberry, bell heather and occasional cowberry, has been extensively burnt in recent years. Herbs such as wood anemone, chickweed wintergreen and tormental occur through the heather. Variable sized pockets of wet heath with purple moor grass, bog asphodel, bog myrtle, cross-leaved heath, sundew and pockets of jointed rush occur along the road and are also present on the slopes with hare's tail cotton sedge and butterwort. EIA reference pages 7 & 8 and Habitats Map Appendix 2.

      In these areas the proposal is to plant the following woodland types W18 merging into W17 with Native Broadleaves [downy birch, rowan, willow (goat and grey/ eared), aspen, Caledonian Scots pine (drier knolls), juniper and common alder on wetter flushes] planted @ 1,200-2,000/ ha; Native Broadleaves [as above minus common alder] and Caledonian Scots pine (CSP) planted at 1,200-2,000/ ha; and Caledonian Scots pine planted [CSP with NBL] @ 1,600/ 2,000/ ha.

      It is expected that regeneration of willows (including creeping and grey/ eared) will develop & establish within the wetter/

flushed areas of open ground helping to diversify the initial planted woodland structure.

Prior to planting, ground preparation will take the form of mechanical cultivation on the drier heather dominated areas with hand cultivation on the wet heaths. No cultivation will be undertaken on the areas of open ground.

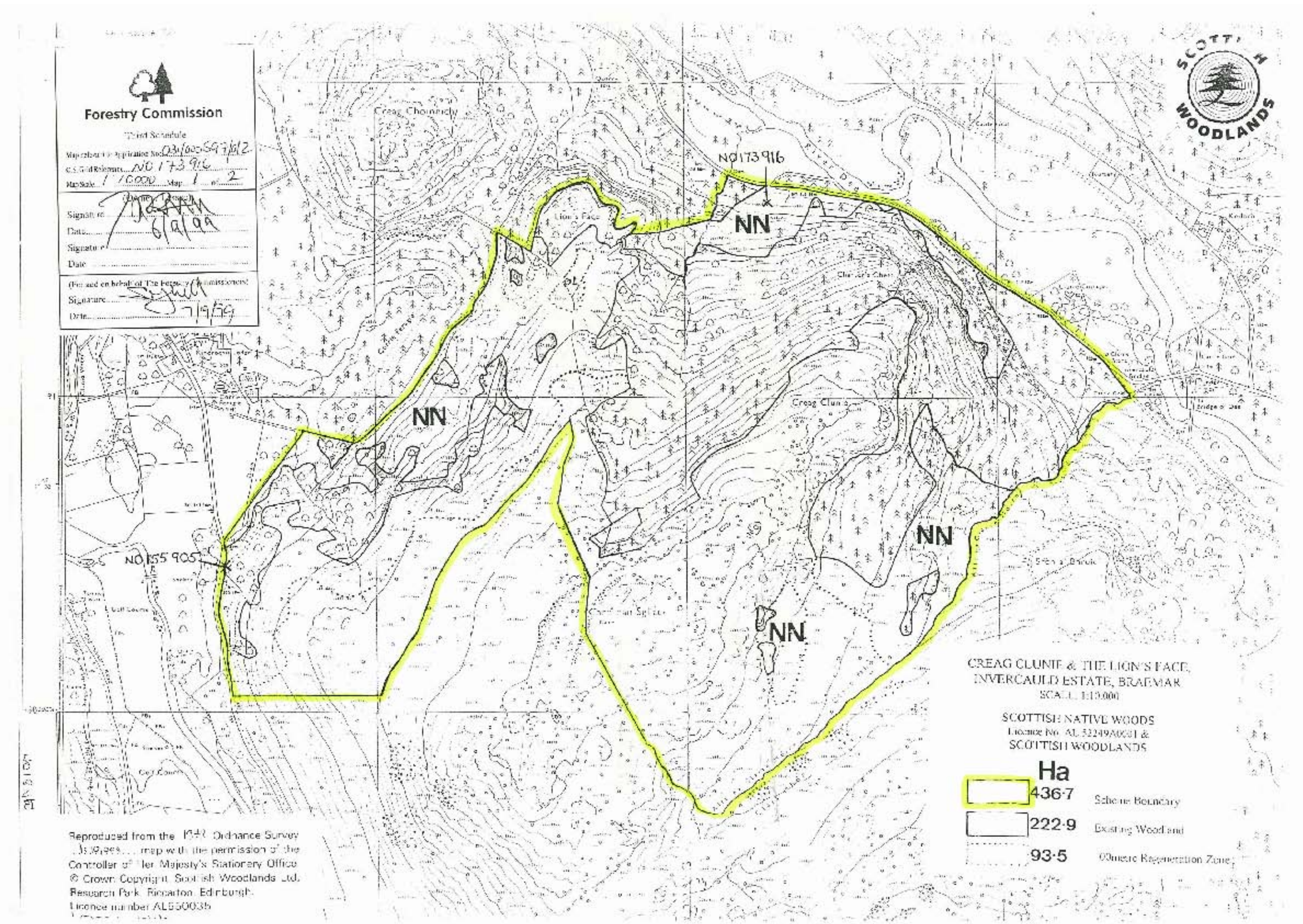
ALTERNATIVE & CURRENT MANAGEMENT PROPOSALS

Do Nothing:
The designated features on the site are considered by Scottish Natural Heritage to be in favourable condition as a result of the WGS control programme of wild herbivores. However SNH's *Target 1.1.3 Regeneration Potential - evidence of natural regeneration of Scots pine (e.g. presence of saplings greater than 1.5m high with presence of a leader) in suitable open spaces* recorded limited regeneration in the more open areas of woodland.

Monitoring of the WGS scheme has shown that the estimated population of red deer is in excess of the 4-8 deer per sq km which is accepted as the maximum required to achieve tree regeneration. This lack of established regeneration could lead to the fragmentation and decline in native woodland cover as well as the disappearance of remnant native genotypes such as aspen in this area, over the long-term.

The heather moorland areas on Carn nan Sgliat and Millstone Cairn, within the Callater Beat, would continue to be managed for sporting interests through a programme of muirburn thereby limiting the potential for native woodland expansion.

Alternative Management Approach:
A Woodland Grant Scheme (WGS) Deeside Forest Challenge Fund application (reference number 031000597) was approved by the Forestry Commission in 1999, see WGS map below. The scheme totalling 437ha, included 230ha of the Creag Clunie & Lion's Face SSSI and the western extension of the Ballochbuie SAC & SPA, along with the western slopes of Carn nan Sgliat. The scheme consisted of 312ha of native woodland management encompassing the Caledonian pinewoods on Creag Clunie and birchwoods on Carn nan Sgliat with, 94ha of natural regeneration (which included the open ground on Allt na Claise Moire, the ridge between Creag Clunie and Carn nan Sgliat, and the north-western heather slopes of Carn nan Sgliat) without deer fencing. This was due to concern at that time of the negative impact of bird strikes on the capercaillie population of a new deer fence. The focus was instead on deer control measures based on agreed annual cull targets as set out in a Deer Management Plan as well as rabbit control within the scheme area to initiate woodland regeneration. The approval of a WGS contract in 1999 for regeneration on Creag Clunie was recognition of the suitability of this site for native pine woodland expansion.


Forestry Commission
NO173916
NN
NN
NN
NN
NO155 905
Creag Clunie
CREAG CLUNIE & THE LION'S FACE,
INVERCAULD ESTATE, BRAEMAR
SCOTTISH NATIVE WOODS
SCOTTISH WOODLANDS
Ha
436·7
Scheme Boundary
222·9
Existing Woodland
93·5
Regeneration Zone
Reproduced from the Ordnance Survey
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Research Park, Riccarton, Edinburgh.
SCOTTISH WOODLANDS

WGS MAP

Monitoring within the WGS area, undertaken by MLURI and Scottish Native Woods in collaboration with Invercauld Estate, highlighted a positive growth response in the seedling bank as well as the ground vegetation as a result of the wild herbivore control measures undertaken. However it also highlighted low numbers of individuals in the seedling bank, particularly on the moorland areas to the east of Creag Clunie, emphasising the reliance on inputs from the adjacent seed sources and good Scots pine seed years.

Whilst estimates of deer numbers prior to 1999 were unknown, monitoring during the first five years of the scheme showed a halving of the deer population between 2000 (estimated at 24 red deer per sq km) to 2004 (at 12 red deer per km^2). However the estimated population is in excess of the maximum 4-8 deer per sq km that is considered to be required to achieve tree regeneration. The report concluded that, "further heavy culling and the passage of time will be required to enable existing as well as new seedlings and saplings to establish and grow, before woodland regeneration is seen as a reality over the site in general." (SNW, 2005) The recorded change in the behaviour of the resident deer population over the 10 year control period has resulted in increased cull effort for reduced reward.

The location of the WGS scheme on the edge of the Callater Beat and Balmoral Estate has made it difficult to reduce red deer numbers on the site to sufficiently low levels to achieve tree & shrub regeneration without the use of a deer fence. The cull required would result in a significant reduction in the total hill red deer herd and an unacceptable loss in valuable sporting income to both Invercauld Estate as well as neighbouring Estates. Therefore where these two conflicting land-use objectives meet a suitably marked, strategic deer fence would seem appropriate to achieve both sporting & woodland management objectives and secure dependant local employment. Red deer numbers would be more easily controlled over a shorter timescale within the fenced area and realise the benefits of native woodland establishment earlier. The principle of using a strategic deer fence is supported by *The Deeside Forest Economic and Technical Study, 2001.*

In addition, advances in the marking of deer fences have significantly reduced the concerns raised in 1999 regarding the use of protective deer fencing for the establishment of the new native pinewood and its impact on woodland grouse. The reduction in the capercaillie population supports the need for the creation of large areas of well designed new native woodland with potential to develop as future habitat. This is particularly where this expansion is contiguous with a core capercaillie habitat.

The lower plant interest, particularly on the limestone outcrops associated with the Lion's Face as well as the calcareous grassland (CG10) and species rich heath (H10c) within the SSSI requires a low level of browsing to maintain the current open canopy structure.

Management Proposals:

In 2010 a Statement of Intent (SOI) was submitted to the Scottish Rural Development Programme, Rural Development Contracts Rural Priorities (RDC RP) grant scheme to enclose 849.4ha within a new deer fence to allow the creation of 327ha of planted with 59.2ha of natural regeneration of native woodland as well as the management of 240ha of existing plantation and native woodland.

Aim – The expansion of the native pinewoods on Creag Clunie and into Glen Clunie through a mixture of planting and natural regeneration of Scots pine and native broadleaves.

In 2012 more detailed proposals were submitted to FCS to plant 264ha of new native woodland to create UK Priority Habitat W18, using local origin Caledonian Scots Pine (CSP) along with variable sized areas of Native Broadleaves (NBL) (e.g. birch, rowan, aspen, common alder & *Salix* species) to create UK Priority Habitat W17.

In the proposed planting design CSP will be concentrated on the mid to upper slopes, gradually reducing in stocking density from a maximum of 3000/ha to 500/ha with increasing altitude. This will give the appearance of the wood fading out into the moorland & create a habitat mosaic for the benefit of black grouse. NBL will be planted in mixtures & species groups on the lower slopes with spacing varying between 0.6m to 6m centres to give variation in the resulting canopy in accordance with FC Bulletin 112. Up to 25% allowance for open ground will be used to create open areas in the wood, particularly around the identified environmental and archaeological features.

A 30 metres buffer will be retained around the existing pinewood favouring the development of natural regeneration in a total of 39ha. It is anticipated that Scots Pine and native broadleaves from adjacent stands will regenerate in this area, helping to preserve native genotypes and soften regular woodland edges.

To ensure establishment of the woodland 5,000m of new deer fencing, with 2 gates & a stile will be erected in Yr 1 to exclude hill red deer & roe deer. To reduce bird strikes, 1,750m of new and existing fence will be marked following the recommendations of Tim Poole, the Capercaille Officer. The new fence extends an existing deer fence from Creag Clunie across Millstone Cairn to the existing deer fence at Auchallater. Fencing materials will be laid out using vehicles wherever access is possible. Where the terrain does not allow for this, a helicopter will be used to drop materials in bundles along the fence line.

To minimise the visual impact of any roadside fence, the design will incorporate a deer grid and associated by-pass gate near Auchallater bridge. This will allow the fence to follow the existing fenceline to Easter Auchallater and then new fence to the watergate leading over the Clunie Water.

Following the erection of the deer fence, ground preparation will be carried out. Mounding & scarification will be undertaken on the drier parts of the site. Where the terrain allows, tracked digger mounding will be used to create hinge mounds. Where the ground is too steep/rocky hand mounding will be used. In less visually sensitive areas a disc scarifier will be used to scarify the ground in discontinuous lines. No drainage works will be undertaken.

The development of the planting will be monitored and if required fertilizer rock phosphate will be applied by hand to assist establishment. A buffer of 20m from any watercourses will be adhered to.

A Deer Management Plan (see Appendix 9) has been prepared for the new planting as well as the 257ha of existing native woodland (Cpt 3) enclosed within the new deer fence. 120ha of this existing woodland forms the eastern extension to the Ballochbuie SAC & SPA.

A monitoring plan has been prepared for the areas of open ground of high environmental interest, See Appendix 10.

The works will be carried out in accordance with Forests and Water Guidelines, 4th edition

Planting Map see Appendix 7.

One of the main factors affecting the mortality of capercaillie & black grouse chicks is predation from foxes, stoats and crows. To improve the survival rates of chicks in the area, it is proposed to carry out approved predator control under a separate RDC RP application.

STRATEGIC FRAMEWORK

The RDC RP application adheres to the UK Forestry Standard's Note 3 *Creating "New Native Woodlands* and Note 5 *Managing Semi-natural Woodlands.*

The Scottish Forestry Strategy 2006
The proposed scheme will help deliver the following objectives under Outcome 3: High quality, robust and adaptable environment:

- Help to tackle climate change
- Contribute to landscape quality
- Help to protect & enhance biodiversity

UK Biodiversity Action Plan Process
The woodland management proposals will contribute to National Biodiversity Targets for Priority Species such as capercaillie, black grouse, red squirrel, elm *Gyalecta* lichen, juniper and species associated with aspen, as well as Priority Habitats such as native pinewoods, upland birchwoods, montane scrub and wet heath.

North East Glens Natural Heritage Futures, SNH 2002 (revised 2008)
The proposals would address actions under Objective 1 "To promote multi-purpose management of the forest resource, with emphasis on maintaining and enhancing the predominantly native character of the forest, while increasing the natural heritage value of non-native woods."

The Forests of the Cairngorms, Cairngorms National Park Forest & Woodland Framework, 2008.
The application will help deliver the following woodland priorities for the Deeside Forest:

a) "Conserve and enhance the predominantly **native character** of the Deeside Forest;
b) Restructuring existing pine woodlands to create woodlands with an **enhanced nature conservation and landscape value**, whilst sustaining timber production;
c) Encourage small-scale **broadleaved woodland regeneration or planting** projects on suitable sites where ground flora indicates remnant native woodland;
d) Encourage the establishment of **new native pinewoods** with a varying broadleaved component in higher ground (pine-birch areas), especially where this would facilitate forest connectivity between river catchments;
g) Establish conditions to allow the development of sub-alpine scrub and a natural tree-line in the upper catchment in targeted areas.

The Deeside Forest Economic and Technical Study, 2001.
This report investigated the economic and technical obstacles and opportunities to achieving the agreed Objectives and Recommendations of the Deeside Forest. One of the major obstacles was the reduction in deer stocks to promote natural regeneration without fencing, Recommendation 5. The study concluded that …."A reduction in red deer numbers to the levels that would permit tree regeneration would lead to a reduction in the capital values and annual sporting revenues. …. It is almost inevitable that some strategic deer fencing will remain in the Deeside Forest for the

foreseeable future. However effective deer control will be essential even within large, strategically fenced blocks of woodland."

EVALUATION OF POTENTIAL IMPACTS OF THE PROPOSALS

The scoping meeting was held on the 6th July 2010 for consultees at Invercauld Estate office and for the public was held at the Braemar Village Hall, Braemar. The minutes of scoping meetings and letters of response from consultees are attached in Appendix 8. It should be noted that the initial proposal for a mountain bike route by Scottish Woodlands Ltd. was not progressed by the Estate.

In addition to the scoping meeting, the following meetings & site visits were held with consultees:

- A site meeting held between Ralph Singleton, Principle Roads Engineer (Marr) from Aberdeenshire Council; Ian Hill Invercauld Estate; Steve Brown FCS & Bob Wilson, Scottish Woodlands Ltd. on the 8th September 2009. Copy of letter from Ralph Singleton attached in Appendix 8.
- A meeting was held between Maggie Laws, SNH; Steve Brown & Carol Robertson Scottish Native Woods on the 21st July 2010 in Inverdee House, Aberdeen. Minute of meeting attached in Appendix 8.
- A site visit was held made by Tim Poole, RSPB; Ian Hill & Carol Robertson on the 23rd August 2010 to discuss marking of the existing and proposed deer fence adjacent to Creag Clunie. Advisory Note prepared by Tim Poole attached in Appendix 8.
- A site visit was made on 24th February 2011 by Moira Greig, archaeologist with Aberdeenshire Council; Ian Hill & Carol Robertson to agree line of proposed deer fence across the Auchallater archaeological site. Note of visit attached in Appendix 8.
- A site visit was held on 31st October 2011 between Fiona Cruickshank, Dave Genny and Graham Sullivan all from Scottish Natural Heritage and Carol Robertson to discuss the open ground habitats in particular the plants in crevices on acid rocks.
- A meeting was held on 14th September 2012 between Fiona Cruickshank, SNH; Steve Brown, FCS ; Ian Hill, Invercauld Estate and Carol Robertson to agree and finalise management actions for the plants in crevices on acid rocks.

DEER FENCING:

To avoid the requirement to deer fence along the A93 public road, the construction of a deer grid on the A93 is proposed. The use of a deer grid will also allow native woodland to extend where appropriate below the artificial line of the road, which is a popular tourist route into the Cairngorms National Park. The site meeting with Ralph Singleton,

Principle Roads Engineer (Marr) with Aberdeenshire Council highlighted the specific site conditions required for the location of the grid, the grid design as well as the requirement for planning consent. These included the location of the grid on a straight section of road set back from the houses at Auchallater, erection of warning signs on approach to the grid, the construction of a gated by-pass alongside the grid to allow access by horse drawn vehicles and pedestrians, the design of the grid to comply with Highway Grid Type V1 (which includes hedgehog escape/ drainage duct). To ensure compliance with these regulations, only one potential location for the deer grid on the A93 road was identified, as shown on the Fencing Map, see Appendix 6.

NOTE: Following clarification from Aberdeenshire Council Roads Department in autumn 2012 regarding the location and costs of the proposed deer grid, this option has been removed. The amended scheme proposal is to now link the deer fence to the bridge at Auchallater. See Appendix 11 for the Fence & Planting Scheme maps showing the no grid option. As a result the total length of the new deer fence has been reduced to 4,900m.

The proposed line of the new deer fence presented at the scoping meeting was shown to cross the Callater Burn and following the southern edge of the access track along the Callater valley. At the scoping meeting, James Scott, SNH raised safety concerns regarding the proposed line of the fence from the Auchallater bridge along the A93 to the location of the deer grid, creating a tunnel which could trap deer. Due to these concerns over safety as well as concerns of track gates and watergates as potential weak spots in the fence, a revised scheme fence line following the northern bank of the Callater Burn is now proposed and is considered in the EIA report.

Whilst there are no lek sites for capercaillie and black grouse within 2 kms of the scheme, there is concern over the potential impact of bird strikes on the new deer fence on the local populations of capercaillie and black grouse. The proposed design of the new native pine & birch woodland with an irregular structure, woodland edge and open space, is likely to provide suitable habitat for these Priority species. No rabbit netting should be used to allow free movement of wildlife, particularly hens with chicks to and from the site.

Over recent years the use and design of fence marking using wooden droppers, has been shown to significantly reduce collisions, whilst achieving exclusion of red deer on exposed sites. The site visit with Tim Poole, RSPB, identified the sections of both new and existing deer fence at highest risk from bird strikes and recommendations on appropriate marking, using diagonal wooden droppers, were agreed, see scheme Fencing Map Appendix 6. The highest risk of bird collision is deemed along the northern section of the Allt na Claise Moire Burn adjacent to the pine plantation. This includes a section trialling a lightweight marking design suggested by Tim Poole on an exposed section of existing deer fence on the steep slope of the Sron a' Bhruc plantation (design reference http://www.suttoncenter.org/pages/fence_marking_instructions This section of fence of fence may require more frequent monitoring to ensure the design is effective.

Under previous forestry grant schemes, a number of deer fences were dismantled by Invercauld Estate in and adjacent to the woods around Creag Clunie & Creag Choinnich. The only remaining internal fence on the northern section of the Allt na Claise Moire Burn prevents movement of red deer from neighbouring Balmoral Estate and will be marked following the recommendations of the Capercaillie officer.

A five year Deer Management Plan (DMP) for both red & roe deer has been prepared for the scheme by Ian Hill in consultation with SNH. The DMP details agreed yearly cull targets, identified controllers and monitoring procedures for the plan period, see Appendix 9.

The objectives of the DMP are as follows:

1. *To maintain a very low deer density level to permit tree establishment of both planted and regenerated species within the fenced area.*
2. *Maintain the perimeter fence so it remains deer proof.*
3. *Regular visits around the fence to monitor bird strikes which will be recorded and to repair any damaged area as a result of either snow or wear and tear.*
4. *The deer fence will be removed once the trees have become established enough to allow the deer back in for shelter.*

The DMP is based on the foot count undertaken by Invercauld Estate on 19/02/10 of 32 stags and 117 others. A reduction cull is proposed to remove all the resident deer within the newly fenced area in the first 2 years of the new fence being erected. This will avoid displacement of resident deer onto neighbouring ground. The DMP also addresses the procedure should any potential tracking by red deer occur on the outer line of the fence. A management cull within the scheme is proposed to achieve Objective 1 of the DMP. Roe deer numbers are not known but will be shot on sight. The deer fence will be monitored by walking the fence line once a month looking for evidence of bird strike and where identifiable will be recorded. In addition, rabbit and mountain hares will be controlled where limiting tree establishment, the latter species will be controlled by shooting only, I. Hill pers coms.

There is a popular network of footpaths in the vicinity of Creag Choinnich. Pedestrian gates are located on the existing deer fence around the woodland on Creag Choinnich allowing access to this network. Apart from the deer grid, where there is a requirement for a gated by-pass, no further access points are required on the proposed line of the new deer fence.

Mr Simon Bell, landscape architect was commissioned to complete the Landscape Assessment of the Creag Clunie Native Woodland scheme and was presented to consultees. The need for quality landscape visualisations of the scheme was supported by consultees, in particular to address the alignment of the fence as well as identify any views (including roadside viewpoints on the A93) which are framed or obscured by the proposals. Simon Bell's landscape assessment and conclusions are

present in this report and have highlighted no significant visual impacts of the marked deer fence. See visualisations Appendix 7.

IMPACT 1: The potential of bird strikes for species such as capercaille & black grouse on the new fence.

SIGNIFICANCE: HIGH

SHORT TERM:

i. High risk sections of both existing and new sections of the deer fence have been identified and are to be marked to ensure visibility to woodland grouse to specification agreed with RSPB without reducing the effectiveness of the fence in excluding red deer within an exposed environment.

- Total of 1,100 metres marking of existing deer fence with specification - three quarter or full length wooden droppers up to gates (eastern location NO179903 & western location agreed with Estate). Droppers should be 1.2 or 1.8m and fixed on the diagonal, with horizontal spacing of 50cm.
- Up to 200m from the current woodland edge of new deer fence marked using half length wooden droppers (0.9m) fixed on the diagonal, with horizontal spacing of 100cm.
- Approximately 170 metres of existing deer fence is extremely exposed to the wind from Glen Clunie. The use of conventional marking would need huge amounts of support to maintain the fence condition. The suggestion by Tim Poole is to trial an alternative to conventional FCS-approved marking methods, such as marking with white plastic tabs.
- Approximately 450 metres of existing deer fence with specification - half length wooden droppers (0.9m) up from base of steep hill (NO178903) until the gate, fixed on the diagonal, with horizontal spacing of 100cm.

ii. Work on erecting and marking the sections of deer fence identified as of highest risk above should be undertaken during the summer months approx. July to September to minimise disturbance to capercaillie.

iii. The new deer fence will consist of rylock netting top and bottom. No rabbit netting will be used.

iv. The location & design of the deer grid, subject to planning consent, to meet with the agreed requirements of Aberdeenshire Council roads department. This will include a gated by-pass for pedestrian & horse drawn vehicles adjacent to grid. *The amended scheme proposal is to now link the deer fence to the bridge at Auchallater. See Appendix 11 for the Fence & Planting Scheme maps showing the no grid option.*

v. The new deer fence will be monitored once a month and records of bird strikes will be kept by the Estate staff for reference by FCS.

MEDIUM TO LONG TERM MITIGATION:

A review of the requirement of the deer fence should be made in discussion with affected neighbours and stakeholders when the woodland is no longer vulnerable to browsing damage or when the management aims of the adjacent land no longer conflict.

IMPACT 2: Displacement of deer onto neighbouring land & the potential tracking of red deer on the outside of the fenceline.

SIGNIFICANCE: LOW

SHORT TERM:

i. DMP propose reduction cull to remove all resident deer within the scheme area in the first two years of the new fence being erected. Reduction cull based on foot count by Invercauld Estate of 32 stags and 117 others.

ii. The new deer fence will be monitored. Where monitoring of the fence indicates tracking by red deer, identified controllers will consult with SNH on any required compensatory cull.

DESIGNATED FEATURES:

Caledonian Pinewood:

The ancient semi-natural woodlands of Creag Clunie & the Lion's Face are of high environmental value. Maintenance & expansion of these areas will contribute to national restoration targets for this Priority habitat under the UK Biodiversity Action Plan Process and SNH management priorities for the SSSI/ SAC.

Site Condition Monitoring of the SSSI/ SAC woodlands in 2002 found then to be in favourable condition, although limited regeneration was observed. Monitoring by Scottish Native Woods & MLURI of the WGS proposals recorded scattered regeneration at or below vegetation height. The significant reduction in red deer numbers within a deer fenced enclosure would realise SNH's "*Target 1.1.3 Regeneration Potential - evidence of natural regeneration of Scots pine (e.g. presence of saplings greater than 1.5m high with presence of a leader) in suitable open spaces* ". Enclosing an adjacent area provides the opportunity to significantly increase the area of native pinewood on suitable habitat using Deeside provenance plants without conflict with neighbouring land priorities.

Moorland:

Expansion of the pinewood onto Clais Mhor was supported in the 1999 Woodland Grant Scheme application and confirmed by SNH at the October site visit.

On the lower parts of the Clais Mhor, Coppins and Coppins (1999) have identified lichen interest on boulders within and at the edge of the Burn (M1 & M2). A management buffer is suggested adjacent to the course of the burn, in particular avoiding any scarification within a 5 metre buffer strip adjacent to the Allt na Claise Moire Burn.

Lower Plant (bryophyte & lichen) Interest:

The limestone outcrops on the ridge of the Lion's Face and on the east side are preferentially grazed by deer and occasional rabbits. In his bryophyte survey, Gordon Rothero highlighted the sensitivity of certain bryophyte species to shading and in particular the Nationally Rare *Stegonia latifolia* which cannot tolerate shading. In contrast, Gordon also stressed the benefit of a reduced deer population, particularly for species associated with flushes. He concludes:

> "It is a question of balance; the level of grazing which gives the correct balance will probably only emerge over a long period of management. Some direct intervention at critical sites, eg. for *Stegonia latifolia*, may be necessary."

The requirement for "direct intervention" was recognised within the 1999 WGS scheme, with the sensitive bryophyte area, on the low-angle limestone crags on the ridge above the Lion's Face, designated as open ground with a management prescription to remove any regenerating trees and shrubs from this area by hand pulling and cutting. This requirement must be continued within the RDC RP scheme proposals.

Gordon acknowledges that on the screes below the Lion's Face ".. the bryophyte interest would probably not be harmed by restocking by natural regeneration of native species". However, site condition monitoring by SNH has highlighted the potential negative impact should bird cherry sucker uphill and shade out the Nationally Scarce *Gyalecta ulmi* lichen on the cliffs above. Any expansion in the bird cherry following a reduction in browsing could be monitored using fixed point photography and the suckering controlled by cutting.

The important bryophytes of the higher block scree on Creag Clunie and Carn nan Sgliat can withstand light shading, (Rothero per coms). These exposed ridges will be left unplanted, but the scattered native regeneration of juniper, Scots pine etc. recorded will be allowed to establish to form a stunted tree line (NVC W19 type habitat) above the native woodland planting. Due to the hostile site conditions, the regeneration is expected to be patchy as well as slow & low growing. However monitoring of the important bryophyte crags, should alert to the development of any dense regeneration in the specific areas and the need for thinning.

"Over much of the rest of the site, likely management practices are going to have little effect on important bryophyte populations" (Rothero, 1998). Care is required if muirburn is proposed on Clais Mhor to prevent it extending to the upper crags with a possible effect on *Grimmia incurva*, *Cynodontium strumiferum* and *Cynodontium polycarpon*.

Additional information on the Protection and enhancement of the lichen interest on the site as informed by Coppins & Coppins (1999).

The range of habitats and features of lichen interest include:

- *Gylalecta ulmi* sites
- Limestone & Schist outcrops of the Lion's Face
- Cliffs SE of Charters Chest

- Boulder slope below cliffs of Charters Chest
- Pinewood
- Moorland

The Coppins & Coppins 1999 report highlights a number of management recommendations specific to each of these habitats and features.

During the development of the 1999 Woodland Grant Scheme proposals (scheme ref. no. 031000597), a site meeting was held between Mr & Mrs Coppins and Carol Robertson (nee Buist) at the *Gylalecta ulmi* sites. It was agreed that the management focus of the WGS on the reduction in grazing pressure through deer and rabbit control measures to reduce erosion and initiate woodland regeneration, would deliver benefits to the lichen interest on all of the habitats and features of interest.

Today the rabbit control measures have resulted in the recovery of the damaged turf layer, particularly in important locations such as G3. However deer numbers remain too high to initiate the flush of tree regeneration which would help retain the range of habitat characteristics over the long-term.

The focus of the 2012 planting proposals to expand the native pine and birch woodland would deliver a number of the 1999 management recommendations if the habitat requirements of the lichen interest in the following specific locations are undertaken.

Some tree regeneration is required to maintain the habitat for *Gylalecta ulmi (*ref locations G2 & G3 Coppins 1999) with the preference for an increase in the occurrence of rowan, aspen and hazel through small-scale enrichment planting. Tree cover however should remain light and scattered over the boulders. Achieving this careful balance may require active intervention in the future to manage the density of any tree regeneration as well as the potential spread of bird cherry which may result from the proposed reduction in deer numbers. The determination of the level at which any suckering and or tree regeneration becomes a detrimental factor on the lichen interest would require a specialist's opinion. Therefore these sites should be monitored during the scheme and the monitoring results reviewed by Scottish Natural Heritage's Lower Plant Advisor at an agreed review period.

Plants in crevices on acid rock.

Within the area of the proposed planting scheme this feature is located on the east facing slopes of Carn nan Sgliat predominantly above 540 metres asl in mosaic with rank heathland. Scattered pockets of native trees and shrubs including Scots pine, rowan, birch, aspen and juniper are present over a number of these crags. Scattered standing dead trees indicate a wider distribution of woodland cover over this slope in the past.

The main commercial planting proposal for the wet heath on Clais Mhor does not extend above this 540 contour. To soften the planting boundary the planting density should be gradually reduced up to this 540m contour and thereafter scattered, small pockets (12 to 20 plants) of broadleaf planting of rowan, aspen and juniper will be planted in the heather gullies between the rock outcrops. This broadleaf planting will not extend above

the extensive and partially wooded crags around 560m asl. No planting will be undertaken within 10 metres of the lower separated crags and large boulders.

Windclipped Arctostaphylos heath

Following the site visit with Scottish Natural Heritage staff, the key areas of H16 have been re-mapped (ref Habitats map amended in Appendix 2). In these areas located mainly on ridges and knolls, climatic factors such as exposure and site conditions e.g. thin soils have resulted in the development of this habitat and will continue to perpetuate it into the future. On the remaining area on the ridge of Creag Clunie and Carn nan Sgliat the predominant vegetation is heathland (H12) which in areas, is in mosaic with bearberry and crowberry. SNH staff did acknowledge areas of H12 where enrichment planting of juniper could take place.

Under the scheme proposals the upper slopes and summit are to be left unplanted. At present only scattered, occasional seedling regeneration of Scots pine, juniper and larch is present at these higher elevations. The regeneration is predominantly stunted in form with the majority not extending above ground vegetation height. Due to the hostile growing conditions it is anticipated that establishment of regeneration will be very slow and result in patchy, stunted scrub through the dwarf heath. This type of NVC 19 habitat or krumholz is very rare within the Cairngorms.

The potentially adverse impacts of tree regeneration on areas of A*rctostaphylos* H16 heath are recognised, however at these higher elevations, distant from seed sources, it is questionable whether tree regeneration will occur at sufficient density and grow to a height which would result in a complete loss of this habitat.

Decisions on the balance in these habitat types will only emerge after a long period of development.

To help inform future management decisions a Monitoring Plan with a Monitoring Map which summarises the methodology and sensitive habitat locations has been approved, (see Appendix 10).

Priority Bird Species:

Numbers of capercaillie in Scotland have declined to approximately 2,000 from a peak of 20,000 birds in the 1970s. In 2009, RSPB reported brood counts for that year as showing survival of capercaillie in both Deeside & Perthshire had reached critical levels. There had also been a decline in the spring counts at leks across much of the bird's Scottish range.

SNH's monitoring report from 2003 highlighted that the pinewoods on Creag Clunie in their currently extent were not ideal capercaillie habitat, forming a small block of woodland in quite close proximity to disturbance from the main A93 road. Whilst Creag Clunie is a component of the larger Ballochbuie SPA, the majority of which lies within the neighbouring Estate's ownership, the area of existing semi-natural woodland with its associated ground flora coupled with the proposed expansion of the native pinewood contiguous with the Ballochbuie SAC/SPA, is of a scale and design which would make a significant contribution to the maintenance &

enhancement of the capercaille and black grouse populations on Deeside in the longer term.

The proposed design of the new native pinewood with an irregular structure, woodland edge and open space, is likely to provide suitable habitat for capercaillie, as well as black grouse particularly in the short to medium term. To provide cover for foraging woodland grouse Tim Poole, the Capercaillie Project Officer requested high density planting of Scots pine on the knolls surrounding open boggy flushes, especially on Clais Mhor. Natural regeneration of willow (grey, eared and dwarf willow) should be allowed to develop & retained on the areas of open ground due to the species biodiversity value especially as an important food source for black grouse hens & young broods.

A number of native broadleaves, including aspen, bird cherry and common alder occur at low frequency through the existing native woodland. These tree species are of importance to a number of species including specialist UK Priority Species. Native woodland creation provides an opportunity to increase the frequency of these species especially common alder and aspen through a combination of planting using local provenance stock as well as the development of aspen suckers through the retention of a 10 metre buffer surrounding existing stands of aspen trees.

The quality of the blaeberry, an important food plant for adult capercaillie & chicks, is good in the Creag Clunie pinewood due to the deer control measures undertaken over the last ten years. However there is concern that once deer are excluded from the site and browsing pressure significantly reduced, heather may become rank and shade the blaeberry. Blaeberry is more shade tolerant than heather, often replacing heather under a partial tree canopy. Research into the features of a stand of trees likely to determine the presence of blaeberry and heather as an understorey has shown that greatest blaeberry cover was found beneath trees over 10m tall and at a stem density of less than 1,500/ha (Moss et al, 2004). Greatest cover of heather was found to occur when trees were short (up to 5m) as plots were established on heather moorland, and when trees were over 10m tall at stem density of 500/ha or less (Moss et al, 2004). It is therefore expected that blaeberry will remain a feature where it currently exists within the higher level pinewood, especially on the western side of Creag Clunie where current canopy cover will be retained. Over the short term, little new extensive blaeberry habitat is expected to develop on the planted heather moorland until the trees reach the stage of first thinning. However, within the areas of open ground, any resulting dominance of heather and potential deterioration in the quality of the habitat for capercaillie broods, advice should be sought from the Capercaillie Project Officer on heather management to facilitate brood habitat improvement.

In addition to the semi-natural woodland, the exclusion of deer from the adjacent pine plantations will also assist the development of a forest ground flora for capercaillie and the potential for the implementation of Low Impact Silvicultural System (LISS) management.

Included within the scheme proposals is an annual programme of fox and crow control within the semi-natural woodlands and pine plantations.

Both foxes & crows take eggs and chicks, and the fox may kill nesting hens and birds roosting on the ground.

Forestry has the potential to come into conflict with golden eagles. "The main effect on eagles of increased native woodlands in Scotland is related to prey abundance." (McGrady & Petty, 2005).

The diet of eagles varies depending on prey availability and habitat. In the eastern Highlands the abundant prey species are red grouse (*Lagopus lagopus*) and mountain hares (*Lepus timidus*) (McGrady & Petty, 2005). A reduction in grazing levels by fencing would initially promote the recovery of dwarf shrubs and live prey on which the eagle depends. However where there is rank vegetation or tree cover, their preferred food availability is reduced.

The size and shape of eagle territory are intimately connected with the density and distribution of prey, which is linked to habitat quality. Open habitats supporting live prey are important.

Considering the large area available to golden eagles for hunting, including & beyond Glen Callater, and the low density of red grouse and hares found on Creag Clunie, the current proposal is considered unlikely to have a major effect on their food supply.

Whilst the condition of the Scottish crossbill population within the SSSI/ SPA has not been assessed by SNH, under the scheme proposals the current area of pinewood will be maintained. It is therefore unlikely that there will be any negative impacts on this species. Any forestry operations in the wood should avoid the breeding season between early February and mid July (I. Martin, per coms).

IMPACT 3: Potential shading of sensitive lower plants, in particular *Stegonia latifolia & Gyalecta ulmi.*

SIGNIFICANCE: HIGH

SHORT TERM:

i. Area of designated open ground associated with *Stegonia latifolia* identified. NOTE: The area shown was mapped for the WGS at a site meeting between Mike Smedley & Carol Robertson in April 1999 and includes a minimum 20m buffer. Undertake Fixed Point Photography in years 0, 4 & 8 of the bealach (ref. Rothero '98 target note 9 NO16-91) to assess native tree & shrub regeneration. Management prescription is to remove any regenerating trees and shrubs from the *Stegonia* area by hand pulling and cutting. (*SNH condition 2 ref letter 4th July*)

ii. In year 1 mark the boundaries of the bird cherry canopy using wooden pegs. In years 5 & 10, record any expansion, through suckering, of the bird cherry out with this marked cordon. Any suckering out with the cordon to be controlled by cutting to avoid spread onto locations of *Gyalecta ulmi* lichen on the Lion's Face (ref Coppins & Coppins '99 G2). Undertake Fixed Point Photography in years 0, 4 & 8 of the open birchwood slope (ref Coppins & Coppins '99 G3) to assess native tree & shrub regeneration on this face.

iii. Undertake small scale enrichment planting of local provenance rowan and aspen through the open birchwood south and east of the Lion's Face (G3).

iv. No tree planting will be undertaken on the higher acidic crags on the eastern slope of Carn nan Sgliat. A 10 metre unplanted buffer will be retained around the lower scattered crags around 540 to 560m asl. Undertake Fixed Point Photography in years 0, 4 & 8 in a minimum of 2 to a maximum of 6 locations on this slope. (*SNH condition 3 ref letter 18th September*)

v. No muirburn to be undertaken on the moorland on Clais Mhor.

vi. Retain fallen dead wood and stumps for epiphytes.

vii. No scarification to be undertaken within a 5 metre buffer adjacent to the Allt na Claise Moire Burn.

viii. All monitoring results to be sent to Scottish Natural Heritage's Lower Plant Advisor for a review of the results and the agreement on any remedial action required at year 6 of the scheme. (*SNH condition 5 ref letter 4th July*)

MEDIUM TO LONG TERM MITIGATION:

A review of the requirement of the deer fence should be made in discussion with affected neighbours and stakeholders when the woodland is no longer vulnerable to browsing damage or when the management aims of the adjacent land no longer conflict.

IMPACT 4: Planting design & management to maximise habitat potential for Priority bird species in particular capercaillie and black grouse.

SIGNIFICANCE: MEDIUM

SHORT TERM:

i. Outline planting proposals include variable density planting to create mosaic of canopy cover, irregular edges and open space. Include within the species mix local provenance common alder and aspen.

ii. To provide cover for foraging woodland grouse, undertake pockets of high density planting of Scots pine on the drier knolls surrounding open boggy flushes, especially on Clais Mhor.

iii. Retain natural regeneration of willow (grey, eared and dwarf willow) on the areas of open ground (with the exception of lower plant areas, see IMPACT 3) to provide a food source for black grouse hens & young broods.

iv. Retain 10m unplanted buffer surrounding existing aspen stands to allow development of suckers.

v. Completion of an annual programme of predator control of foxes and crows, in accordance with latest guidance, within the scheme area.

vi. To minimise potential disturbance, no planting and associated ground preparation should be undertaken within a minimum of 30 metres of the existing pine woodland. Natural regeneration will be the favoured method of expansion within this buffer.

MEDIUM TO LONG TERM MITIGATION:

Advice to be sought from the Capercaillie Project Officer on heather management to facilitate brood habitat improvement as a result of any deterioration in the quality of the habitat for capercaillie broods as a result of dominance of heather.

Non-designated Habitats & Species:

Expansion of the Scots pine woodland will be undertaken predominantly on areas of dry heath and some wet heath. The majority of the heathland areas are currently managed by muirburn as part of the Callater Sporting beat. The heathland area enclosed within the fence is approx. 550ha which forms 3.33% of the 16,500ha Callater beat.

The occurrence of three higher plants (lesser twayblade, intermediate wintergreen & chickweed wintergreen) on this site, out of a list of seven plants suggested by Pitkin et al (1995) as characteristic of native pinewoods, are deemed a reasonable indicator of the suitability of the site for pine woodland. The presence of ostrich-plume feather-moss in the birchwood, regarded as an indicator of ancient woodland, supports the map evidence of a larger area of native woodland extending to Easter Auchallater in the past. Increasing the area of Caledonian pinewood habitat would have benefits for the local red squirrel populations over the long-term.

Non-woodland features of interest include areas of mire, calcareous grassland & flushes as well as bearberry heath. No planting or ground preparation works should be undertaken on or within a 10metre buffer of these areas. To avoid future shading a low density planting of mainly broadleaves such as birch should be favoured on the lower north western slopes of Carn nan Sgliat. The reduction in grazing pressure following the proposed herbivore control measures on the small scattered limestone outcrops, calcareous grassland areas and calcareous flushes would, on balance benefit the bryophytes (Rothero 1998). The resulting increase in flowering would also be of benefit to the wider invertebrate fauna of this area. There is the potential however for birch to regenerate naturally on those calcareous areas with deeper soils. This needs to be monitored and where required work undertaken, such as cutting of saplings, to retain an open or dappled woodland canopy. Within the mire areas natural regeneration of willow (grey, eared and dwarf willow) should be allowed to develop as an important food source for hens & young broods. *Arctostaphylos* (bearberry) heath is an infrequent habitat in Britain largely confined to the CNPA area. Scattered, wind clipped regeneration of juniper, Scots pine, birch and larch is already present through this habitat on the ridge and crags of Carn nan Sgliat and has the potential to form dwarf scrub over time. Natural regeneration would be a preferred method of establishment on these wind clipped and bearberry heaths resulting in a

random stunted woodland pattern of variable sized open space with minimal ground disturbance. Maintaining the open ground, around exposed crags would retain the habitat for bird species such as ring ouzel, peregrine and raven.

IMPACT 5: Maintenance of mires, wind clipped & bearberry heath, exposed crags and calcareous grassland & flushes.

SIGNIFICANCE: MEDIUM

SHORT TERM:

i. Open and unplanted ground within the scheme to correspond with these identified habitat areas and does not exceed the conditions of the grant scheme. No tree planting or ground preparation will be undertaken in these areas.

ii. On the calcareous grassland and flushes an unplanted 10 metre buffer will be retained around each area. A low density predominantly broadleaf planting should be undertaken on the lower north western slopes of Carn nan Sgliat where these areas occur. (*SNH condition 4 ref letter 4th July*)

iii. Natural regeneration of willows and juniper will be accommodated within the area of mires.

iv. Undertake Fixed Point Photography in three locations (one to include the mapped H16 area) along the ridge between Creag Clunie and Carn nan Sgliat in years 0 and 8 to assess the extent and development of tree regeneration. (*SNH condition 1 ref letter 4th July*)

v. Undertake Fixed Point monitoring in years 0 & 4 in two locations of the calcareous grassland and flushes to assess development of native tree regeneration. (*SNH condition 4 ref letter 4th July*)

ARCHAEOLOGY

Two archaeological sites have been identified within the scheme area and must be retained as open space within the scheme proposals with the required buffer to forestry operations of 10 metres. During a site visit with the Regional Archaeologist a line of the proposed deer fence crossing the scheduled monument Auchallater (NO18NE0005) was agreed whereby no damage would occur to the site features. To avoid potential damage to the site features in the southern section of this scheduled monument located out with the woodland scheme, the Regional Archaeologist requested that the track linking Auchallater to the sheep folds should not be used by forestry & fencing machinery to access the scheme area.

IMPACT 6: Maintenance of scheduled archaeological sites.

SIGNIFICANCE: LOW

SHORT TERM:

i. Prior to ground preparation all archaeological sites will be marked to ensure a 10m exclusion zone is maintained around each site for the duration of the planting.

ii. The new deer fence to follow agreed line crossing Auchallater (NO18NE0005) as shown on the fencing map which will be marked prior to construction. *The amended scheme proposal is to now link the deer fence to the bridge at Auchallater and not cross the archaeological site. The enclosed site is designated as open ground and will not be planted. See Appendix 11 for the Fence & Planting Scheme maps showing the no grid option.*

iii. The track linking Auchallater track to the sheep folds will not to be used by forestry or fencing machinery to access the site.

ACCESS

A network of well used Core Paths is located in the northern section of the scheme with suitable access points. The surface of an informal footpath linking the Queens Drive to the cairn on top of Carn nan Sgliat could be improved in places to enhance the walking experience and protect the local environment. The route of the footpath is generally open with views onto the adjacent Scots pine & birch woodland and the stone cairn affords panoramic views of the Cairngorms. The new native woodland planting should be held back from the footpath or of a very low density to retain this character. No planting should be undertake on the exposed ridge and cairn to retain this view, rather favour the development of low growing, wind clipped juniper & Scots pine regeneration over time.

The site will be accessed by contractors using existing tracks (with the exception of the Auchallater track see IMPACT 6) and across shallow hill slopes. Where the terrain does not allow vehicle access, it is proposed to use a helicopter to drop fencing materials along the proposed fence line.

To assist Estate staff achieve the Deer Management Plan cull targets and the safe extraction of deer carcasses, it is proposed to construct a track suitable for quad bikes, 1.5m wide by approximately 700 metres in length. The proposed track will cross the Clais Mhor and end at the edge of the pinewood on the western side of the Allt na Claise Moire burn and will not cross this watercourse. The new track will link to an existing vehicle track which runs through the Scots pine plantation to the A93 road.

As the proposed line of the new section of track will not link into the footpath network to the north, it is expected that the current low level of disturbance in the area surrounding Clais Mhor will remain. Both Tim Poole, Capercaillie officer and Maggie Laws SNH had no adverse comment to make on the impact of the proposed track on the SPA interest. However SNH confirmed consent will be required under the SSSI designation.

Subject to the required approvals from SNH and CNPA, preliminary discussion by the Estate with CNPA has lead to the following initial draft specification:

- *Excavate 250mm depth tray, 1.5m width filled with Type 1 sub base material (stone size 40mm to dust). Proposal to use crushed local material available at Inver Quarry which has been used on other local paths.*
- *The sub base should be compacted using a vibrating roller. If the path is on the level (i.e. not bench cut) then a 1: 40 camber should be achieved, similarly for cross fall 1:40.*
- *If the ground conditions are wet and boggy in places need to specify the use of a geotextile membrane to lay in the path tray.*
- *Where required for drainage, 150mm or 300mm culverts with natural stone headwalls to be put in with possible ditching on the top side (top of ditch width 500mm; 300mm deep; chamfered sides). To avoid siltation, any surface water drains will not discharge directly into the Allt na Claise Moire watercourse by retaining a minimum 2m vegetative buffer.*
- *To landscape the track, turf line ditches and path edges with turfs set aside when digging the path tray. The turfs should be laid just at the edge of the path rather than on the path in order to enable rain water run-off.*

IMPACT 7: Improvement of existing and construction of new tracks

SIGNIFICANCE: LOW

SHORT TERM:

i. Avoid planting or plant at a very low density along the informal footpath linking Queen's Drive to cairn on Carn nan Sgliat. Retain area surrounding cairn un-planted and allow development of natural regeneration of low growing trees and shrubs.

ii. Where funding available, improve the surface of this informal footpath using locally sourced materials.

iii. Work in or adjacent to existing woodland to be undertaken out with the breeding season; optimum time for operations between August to December where ground conditions are suitable.

iv. Secure required approvals from SNH & CNPA for the draft track specification and the proposed line.

v. Deer grid will include a gated access for pedestrians & horse drawn vehicles adjacent to the grid, (ref. IMPACT 1 iv above). *The amended scheme proposal is to now link the deer fence to the bridge at Auchallater. See Appendix 11 for the Fence & Planting Scheme maps showing the no grid option.*

vi. Stile to be erected on the line of the deer fence to allow access from Ballochbuie onto Milestone Cairn, (see Fencing Map amended Appendix 6).

HYDROLOGY

There is currently very little riparian woodland extending along the burns draining the scheme area as well as selected flushes. There is therefore an opportunity within the fenced area however to create broadleaf riparian woodland by planting local provenance broadleaf species such as aspen & common alder, which currently occur at low frequency within the existing woodland. These include along the Allt na Claise Moire and Millstone Burns as well as flushed areas on the mid to lower slopes due east of Easter Auchallater. Expansion of broadleaf woodland and tree cover along these watercourses would have benefits for the water quality through enhanced inputs of organic matter as well as shading from lethal water temperatures, (SNW, 2000). Enhanced broadleaf cover would have benefits for SAC designated species, in particular Atlantic salmon and otter. Whilst the southern line of the deer fence lies to the north of the Callater Burn, there is also an opportunity to expand the area of riparian woodland along the Callater through the use of small stock fenced exclosures (approx. 8x8m) planted with native broadleaves.

Millstone Burn, on the south eastern edge of the scheme is classified in the RBMP as in good ecological status. The Allt na Claise Moire burn, located on the north eastern boundary of the scheme, is currently classified as of poor status in the RBMP. The required remedial works identified relate to issues of road culverting and an impounding sluice. The forestry operations proposed will not lead to deterioration in the water quality in these watercourses, whose environment would be enhanced with the development of broadleaf riparian woodland.

With the areas of mire to be left unplanted as well as the low level of water abstraction (currently two rural dwellings) should minimise any potential decrease in runoff or groundwater flow for existing water needs. The focus on a planting mixture of native trees and good geological buffering in the catchment of the Clunie Water suggests it is extremely unlikely that any increase in stream acidity will occur as a result of the proposed woodland. Consequently risks to salmonid fisheries in the upper Dee are minimal.

Other water quality impacts involving increased suspended sediments levels, forest chemicals and stream colour are also unlikely provided that Forest & Water Guidelines are followed.

IMPACT 8: Pollution resulting from operations.

SIGNIFICANCE: LOW

SHORT TERM:

i. Contractors will access the site via existing tracks (with the exception of the Auchallater track see IMPACT 6) and across shallow hill slopes. Where the terrain does not allow vehicle access, it is proposed to use a helicopter to drop fencing materials along the proposed fence line.

ii. Any refuelling will be undertaken offsite at an appropriate area of hard standing away from the watercourses & flushes.

iii. Create areas of broadleaf riparian woodland using local provenance stock along watercourses and selected flushes within the deer fenced area. Expand the area of riparian woodland along the Callater burn using small stock fenced exclosures.

iv. Mires areas will be left unplanted, however any natural regeneration of grey, eared and dwarf willows as well as juniper which develops will be retained.

v. Forestry operations will adhere to the Forest & Water Guidelines, 4th edition.

vi. No scarification will take place within 2 metres of any surface water or wetland as well as 5 metres of a spring supplying water for human consumption and the margins of Allt na Claise Moire Burn (ref. IMPACT 3 vii above)

Table 11(amended): SUMMARY OF IMPACTS

IMPACT	SIGNIFICANCE	SHORT TERM MITIGATION	MEDIUM TO LONG TERM MITIGATION
1: The potential of bird strikes for species such as capercaille & black grouse on the new fence.	High	i. High risk sections of both existing and new sections of the deer fence have been identified and are to be marked to ensure visibility to woodland grouse to specification agreed with RSPB without reducing the effectiveness of the fence in excluding red deer within an exposed environment. • Total of 1,100 metres marking of existing deer fence with specification - three quarter or full length wooden droppers up to gates (eastern location NO179903 & western location agreed with Estate). Droppers should be 1.2 or 1.8m and fixed on the diagonal, with horizontal spacing of 50cm. • Up to 200m from the current woodland edge of new deer fence marked using half length wooden droppers (0.9m) fixed on the diagonal, with horizontal spacing of 100cm. • Approximately 170 metres of existing deer fence is extremely	A review of the requirement of the deer fence should be made in discussion with affected neighbours and stakeholders when the woodland is no longer vulnerable to browsing damage or when the management aims of the adjacent land no longer conflict.

		exposed to the wind from Glen Clunie. The use of conventional marking would need huge amounts of support to maintain the fence condition. The suggestion by Tim Poole is to trial an alternative to conventional FCS-approved marking methods, such as marking with white plastic tabs. • Approximately 450 metres of existing deer fence with specification - half length wooden droppers (0.9m) up from base of steep hill (NO178903) until the gate, fixed on the diagonal, with horizontal spacing of 100cm. *ii.* Work on erecting and marking the sections of deer fence identified as of highest risk above should be undertaken during the summer months approx. July to September to minimise disturbance to capercaillie. iii. The new deer fence will consist of rylock netting top and bottom. No rabbit netting will be used. iv. The location & design of the deer grid, subject to planning consent, to meet with the agreed requirements of Aberdeenshire Council roads department. This will include a gated by-pass for	

		pedestrian & horse drawn vehicles adjacent to grid (ref IMPACT 7 v below). *The amended scheme proposal is to now link the deer fence to the bridge at Auchallater. See Appendix 11 for the Fence & Planting Scheme maps showing the no grid option.* v. The new deer fence will be monitored once a month and records of bird strikes will be kept by the Estate staff for reference by FCS.	
2: Displacement of deer onto neighbouring land & the potential tracking of red deer on the outside of the fenceline.	Low	i. DMP propose reduction cull to remove all resident deer within the scheme area in the first two years of the new fence being erected. Reduction cull based on foot count by Invercauld Estate of 32 stags and 117 others. ii. The new deer fence will be monitored (ref. IMPACT 1 v above). Where monitoring of the fence indicates tracking by red deer, identified controllers will consult with SNH on any required compensatory cull.	
3: Potential shading of sensitive	High	i. Area of designated open ground associated with *Stegonia latifolia* identified. NOTE: The area shown was	A review of the requirement of the deer fence should be made in discussion with affected

lower plants, in particular *Stegonia latifolia* & *Gyalecta ulmi.*		mapped for the WGS at a site meeting between Mike Smedley & Carol Robertson in April 1999 and includes a minimum 20m buffer. Undertake Fixed Point Photography in years 0, 4 & 8 of the bealach (ref. Rothero '98 target note 9 NO16-91) to assess native tree & shrub regeneration. Management prescription is to remove any regenerating trees and shrubs from the *Stegonia* area by hand pulling and cutting. (*SNH condition 2 ref letter 4th July*) ii. In year 1 mark the boundaries of the bird cherry canopy using wooden pegs. In years 5 & 10, record any expansion, through suckering, of the bird cherry out with this marked cordon. Any suckering out with the cordon to be controlled by cutting to avoid spread onto locations of *Gyalecta ulmi* lichen on the Lion's Face (ref Coppins & Coppins '99 G2). Undertake Fixed Point Photography in years 0, 4 & 8 of the open birchwood slope (ref Coppins & Coppins '99 G3) to assess native tree & shrub regeneration on this face. iii. Undertake small scale enrichment planting of local provenance rowan and aspen through the open birchwood south	neighbours and stakeholders when the woodland is no longer vulnerable to browsing damage or when the management aims of the adjacent land no longer conflict. (ref. IMPACT 1 above)

		and east of the Lion's Face (G3). iv. No tree planting will be undertaken higher acidic crags on the eastern slope of Carn nan Sgliat. A 10 metre unplanted buffer will be retained around the lower scattered crags around 540 to 560m asl. Undertake Fixed Point Photography in years 0, 4 & 8 in a minimum of 2 to a maximum of 6 locations on this slope. (*SNH condition 3 ref letter 18th September*) v. No muirburn to be undertaken on the moorland on Clais Mhor. vi. Retain fallen dead wood and stumps for epiphytes. vii. No scarification to be undertaken within a 5 metre buffer adjacent to the Allt na Claise Moire Burn. viii. All monitoring results to be sent to Scottish Natural Heritage's Lower Plant Advisor for a review of the results and the determination of any remedial action required at year 6 of the scheme. (*SNH condition 5 ref letter 4th July*)	
4. Planting design & management	Medium	i. Outline planting proposals include variable density planting to create mosaic	Advice to be sought from the Capercaillie Project Officer on heather management to facilitate

to maximise habitat potential for Priority bird species in particular capercaillie and black grouse.			of canopy cover, irregular edges and open space. Include within the species mix local provenance common alder and aspen.	brood habitat improvement as a result of any deterioration in the quality of the habitat for capercaillie broods as a result of dominance of heather.
		ii.	To provide cover for foraging woodland grouse, undertake pockets of high density planting of Scots pine on the drier knolls surrounding open boggy flushes, especially on Clais Mhor.	
		iii.	Retain natural regeneration of willow (grey, eared and dwarf willow) on the areas of open ground (with the exception of lower plant areas, see IMPACT 3) to provide a food source for black grouse hens & young broods.	
		iv.	Retain 10m unplanted buffer surrounding existing aspen stands to allow development of suckers.	
		v.	Completion of an annual programme of predator control of foxes and crows, in accordance with latest guidance, within the scheme area.	
		vi.	To minimise potential disturbance, no planting and associated ground preparation should be undertaken within	

			a minimum of 30 metres of the existing pine woodland. Natural regeneration will be the favoured method of expansion within this buffer.	
5. Maintenance of mires, wind clipped bearberry heath, exposed crags and calcareous grassland & flushes.	Medium	i. ii. iii. iv.	Open and unplanted ground within the scheme to correspond with these identified habitat areas and does not exceed the conditions of the grant scheme. No tree planting or ground preparation will be undertaken in these areas. On the calcareous grassland and flushes an unplanted 10 metre buffer will be retained around each area. A low density predominantly broadleaf planting should be undertaken on the lower north western slopes of Carn nan Sgliat where these areas occur. (*SNH condition 4 ref letter 4th July*) Natural regeneration of willows and juniper will be accommodated within the area of mires. Undertake Fixed Point Photography in three locations (one to include the mapped H16 area) along the ridge	

		between Creag Clunie and Carn nan Sgliat in years 0 and 8 to assess the extent and development of tree regeneration. (*SNH condition 1 ref letter 4th July*) v. Undertake Fixed Point monitoring in years 0 & 4 in two locations of the calcareous grassland and flushes to assess development of native tree regeneration. (*SNH condition 4 ref letter 4th July*)	
6: Maintenance of scheduled archaeological sites.	Low	i. Prior to ground preparation all archaeological sites will be marked to ensure a 10m exclusion zone is maintained around each site for the duration of the planting. ii. The new deer fence to follow agreed line crossing Auchallater (NO18NE0005) as shown on the fencing map which will be marked prior to construction. *The amended scheme proposal is to now link the deer fence to the bridge at Auchallater and not cross the archaeological site. The enclosed site is designated as open ground and will not be planted. See Appendix 11 for the*	

		Fence & Planting Scheme maps showing the no grid option. iii. The track linking Auchallater track to the sheep folds will not to be used by forestry or fencing machinery to access the site.	
7. Improvement of existing and construction of new tracks	Low	i. Avoid planting or plant at a very low density along the informal footpath linking Queen's Drive to cairn on Carn nan Sgliat. Retain area surrounding cairn un-planted and allow development of natural regeneration of low growing trees and shrubs. ii. Where funding available, improve the surface of this informal footpath using locally sourced materials. iii. Work in or adjacent to existing woodland to be undertaken out with the breeding season; optimum time for operations between August to December where ground conditions are suitable. iv. Secure required approvals from SNH & CNPA for the draft track specification and the proposed line.	

		v. Deer grid will include a gated access for pedestrians & horse drawn vehicles adjacent to the grid, (ref. IMPACT 1 iv above). *The amended scheme proposal is to now link the deer fence to the bridge at Auchallater. See Appendix 11 for the Fence & Planting Scheme maps showing the no grid option.* vi. Stile to be erected on the line of the deer fence to allow access from Ballochbuie onto Milestone Cairn, (see Fencing Map amended Appendix 6).	
8. Pollution resulting from operations	Low	i. Contractors will access the site via existing tracks (with the exception of the Auchallater track see IMPACT 6) and across shallow hill slopes. Where the terrain does not allow vehicle access, it is proposed to use a helicopter to drop fencing materials along the proposed fence line. ii. Any refuelling will be undertaken offsite at an appropriate area of hard standing away from the watercourses & flushes.	

		iii. Create areas of broadleaf riparian woodland using local provenance stock along watercourses and selected flushes within the deer fenced area. Expand the area of riparian woodland along the Callater burn using small stock fenced exclosures. iv. Mires areas will be left unplanted, however any natural regeneration of grey, eared and dwarf willows as well as juniper which develops will be retained. v. Forestry operations will adhere to the Forest & Water Guidelines, 4th edition. vi. No scarification will take place within 2 metres of any surface water or wetland as well as 5 metres of a spring supplying water for human consumption and the margins of Allt na Claise Moire Burn (ref. IMPACT 3 vii above)	

REFERENCES:

Callander, R.F. & MacKenzie, N.A. (1994) The Native Woodlands of Highland Deeside (SNH).

CNPA (2010) Core Paths Plan, Map 6 Braemar

Coppins, A.M. & Coppins, B.J. (1999) Creag Clunie and the Lion's Face SSSI Lichen Survey. Report for Scottish Natural Heritage.

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McGrady, M.J. & Petty, S.J. (2005) "Golden Eagles and New Native Woodland in Scotland" (FC, Information Note).

Moss, R. & Picozzi, N. (2004) Management of Forests for Capercaillie in Scotland, FCS Bulletin 114.

Pitkin, P.H., Lusby, P.S. and Wright, J. (1995) Biodiversity and the ecology of pinewood plants. In: Our Pinewood Heritage, ed R. Aldhous, 196-205

Ross, I. & Lorraine Smith, R. (2001) The Deeside Forest Economic and Technical Study

Rothero, G. (1998) Survey of Bryophytes on Creag Clunie & Lion's Face SSSI (SNH).

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Scottish Native Woods (2005) The impacts of grazing and trampling on the semi-natural vegetation and tree regeneration in native woodland quadrats on Creag Clunie, Invercauld Estate, Aberdeenshire: Year five monitoring report (SNH)

Smedley, M.D. (1996) NVC Vegetation Survey of Creag Clunie Pinewoods (SNH).

SNH (1998) Creag Clunie and the Lion's Face SSSI Citation.

SNH (2000) Creag Clunie and the Lion's Face SSSI Management Statement.

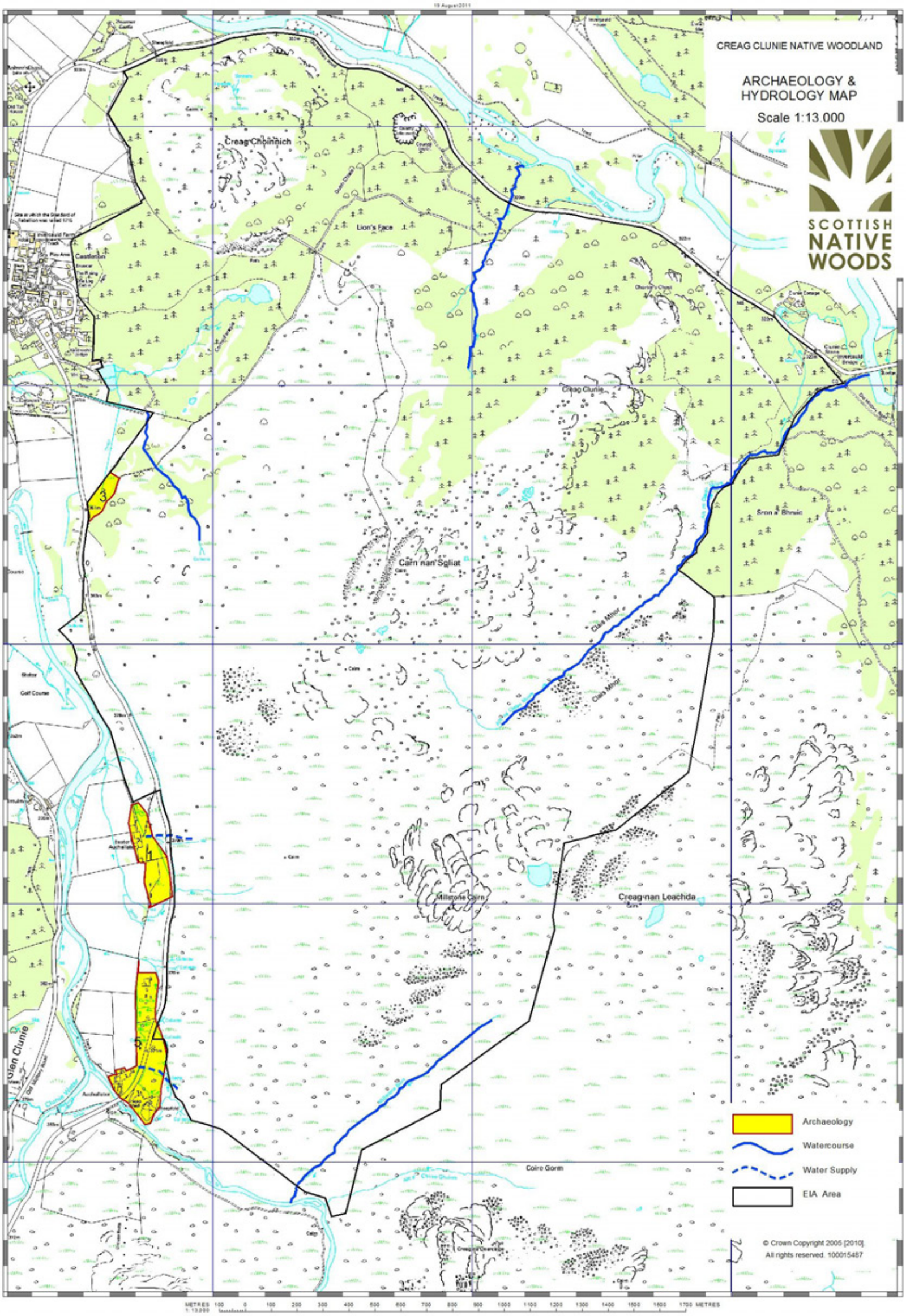
Turnbull Jeffrey Partnership (1997) Invercauld Estate Designed Landscape Management Plan (SNH).

APPENDICES

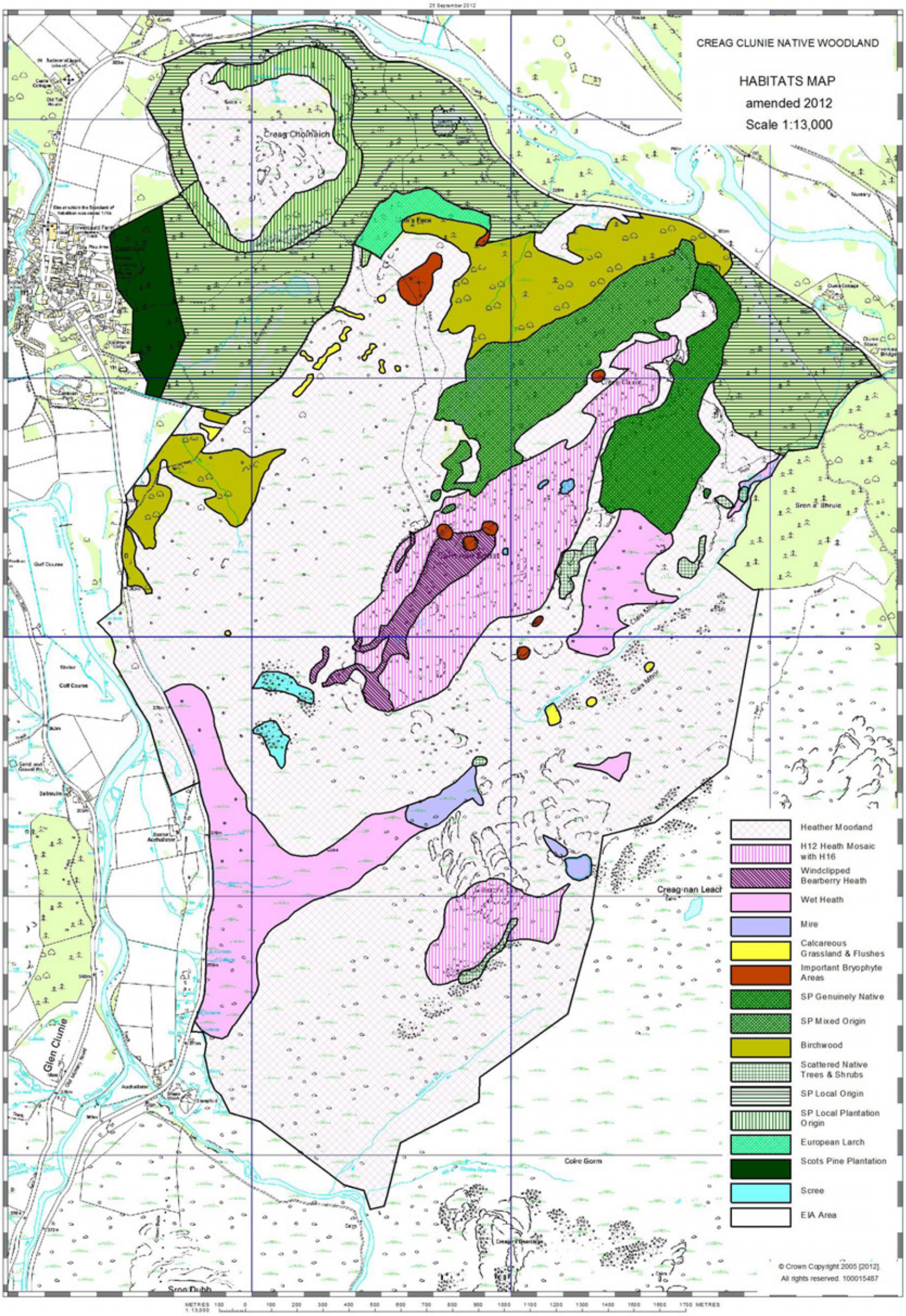
1. 1: 13,000 Archaeology & Hydrology Map
2. 1: 13,000 Habitats Map (amended)
3. 1: 13,000 Woodland Map
4. 1: 13,000 Designations Map
5. 1: 13,000 Access Map
6. 1: 13,000 Fencing Map (amended)
7. Landscape Appraisal – visual material prepared by Simon Bell

   Includes New Native Wood Planting Map: 12,000 scale
8. Minutes of Scoping Meetings & Consultees' comments
9. Deer Management Plan.
10. Monitoring Plan and Map
11. 1:13,000 Fencing Map (No Grid) & New Native Wood Planting Map (No Grid): 12,000 scale

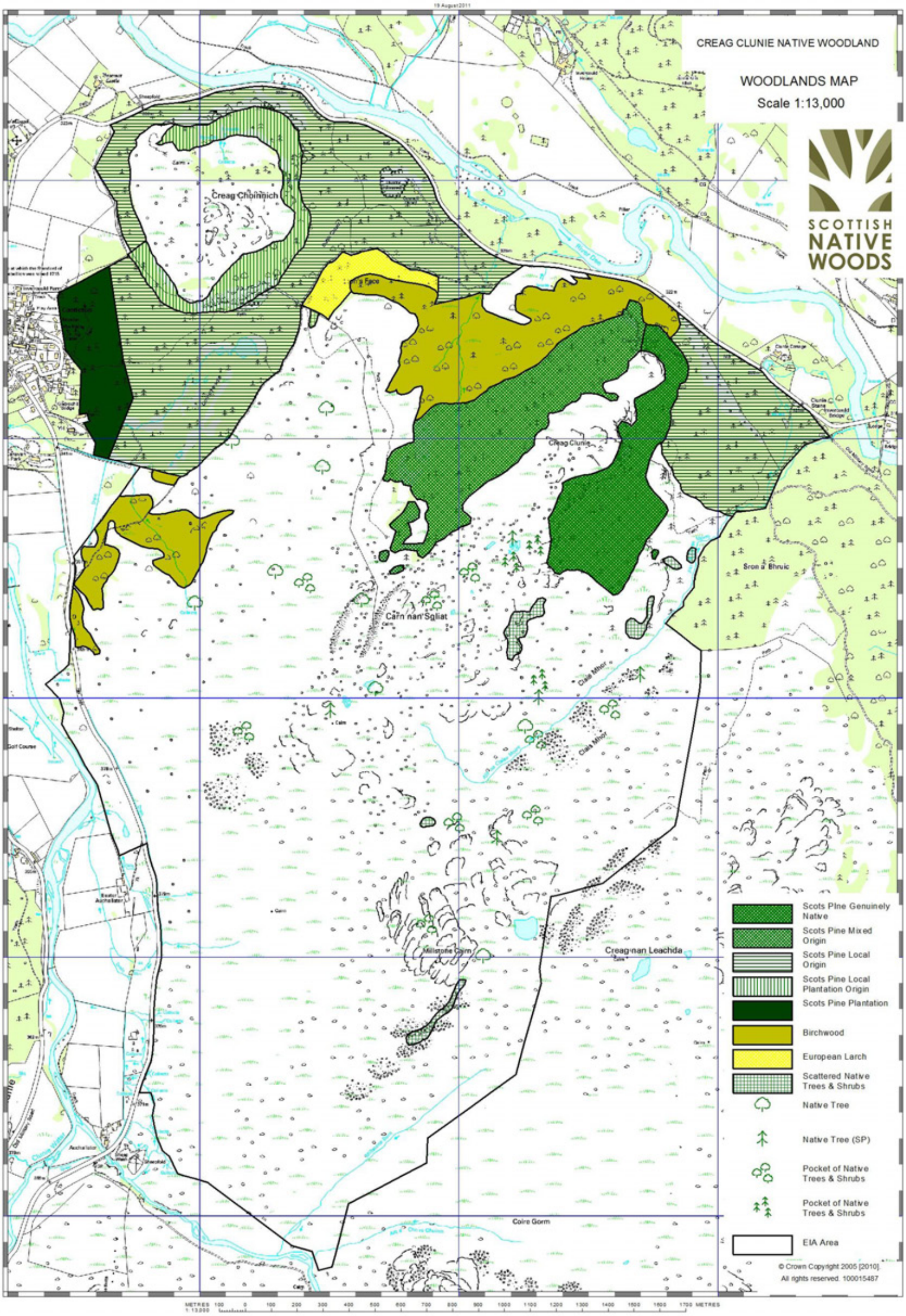
APPENDIX 1: ARCHAEOLOGY & HYDROLOGY MAP



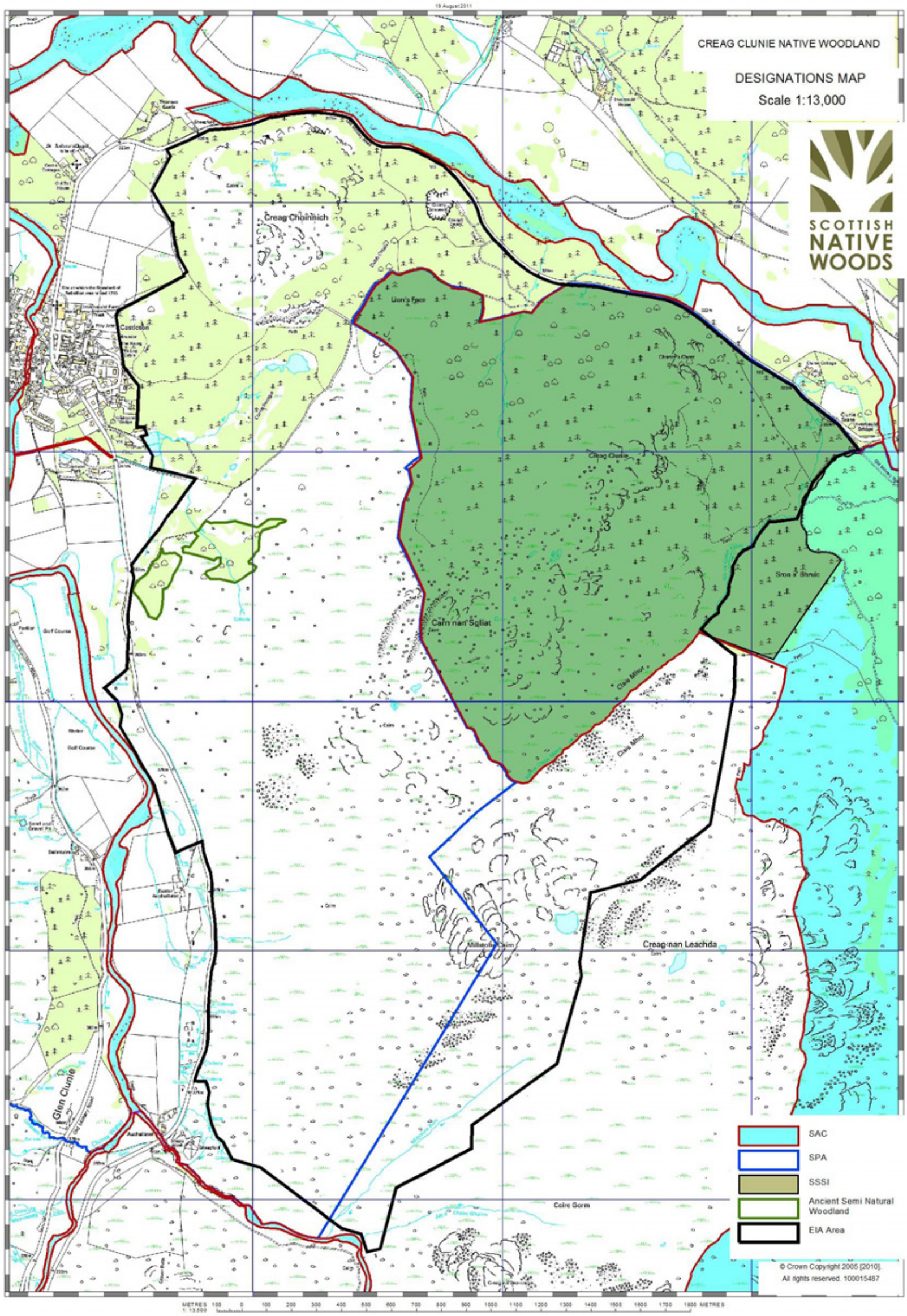
APPENDIX 2: HABITATS MAP (amended)



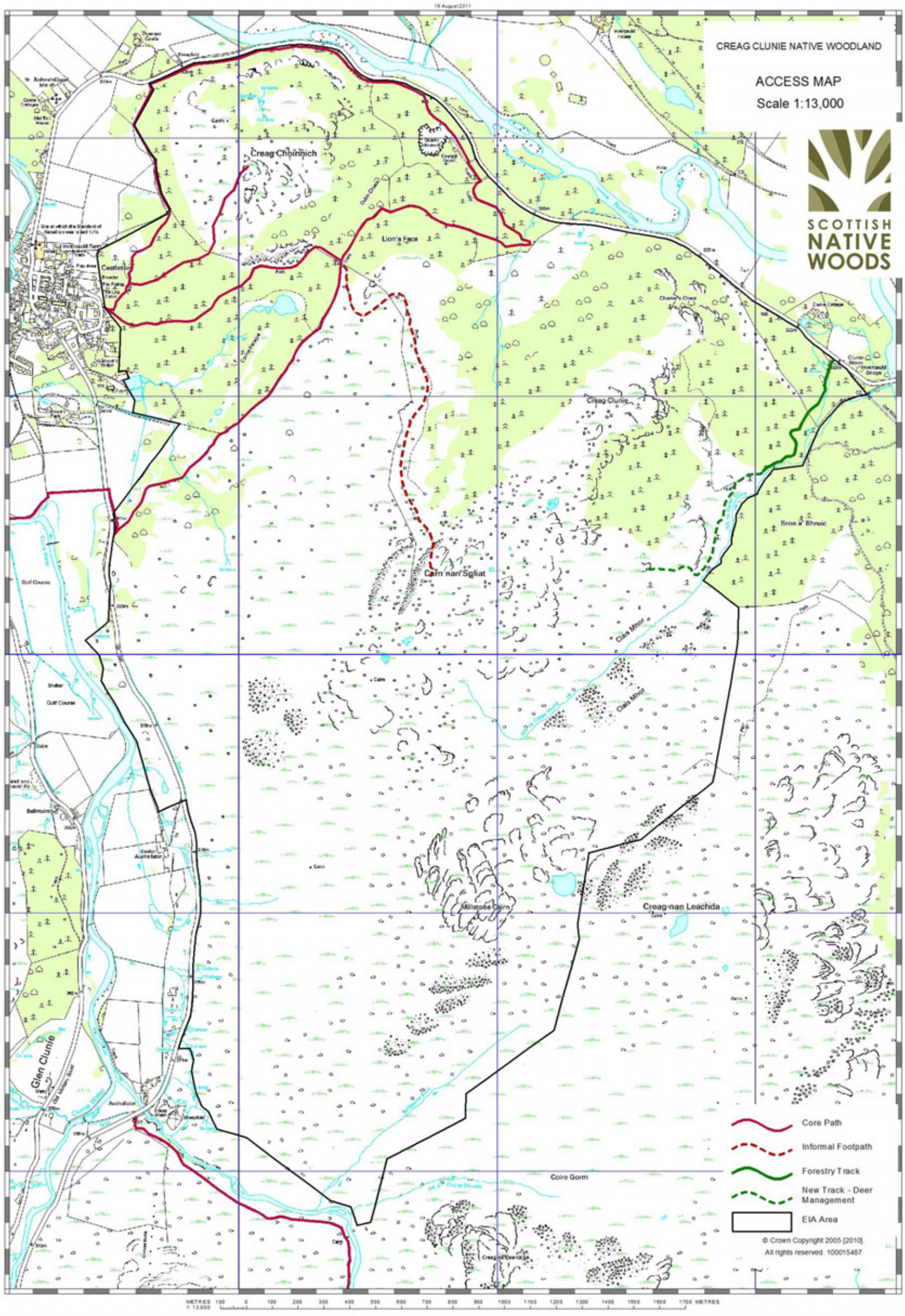
APPENDIX 3: WOODLANDS MAP



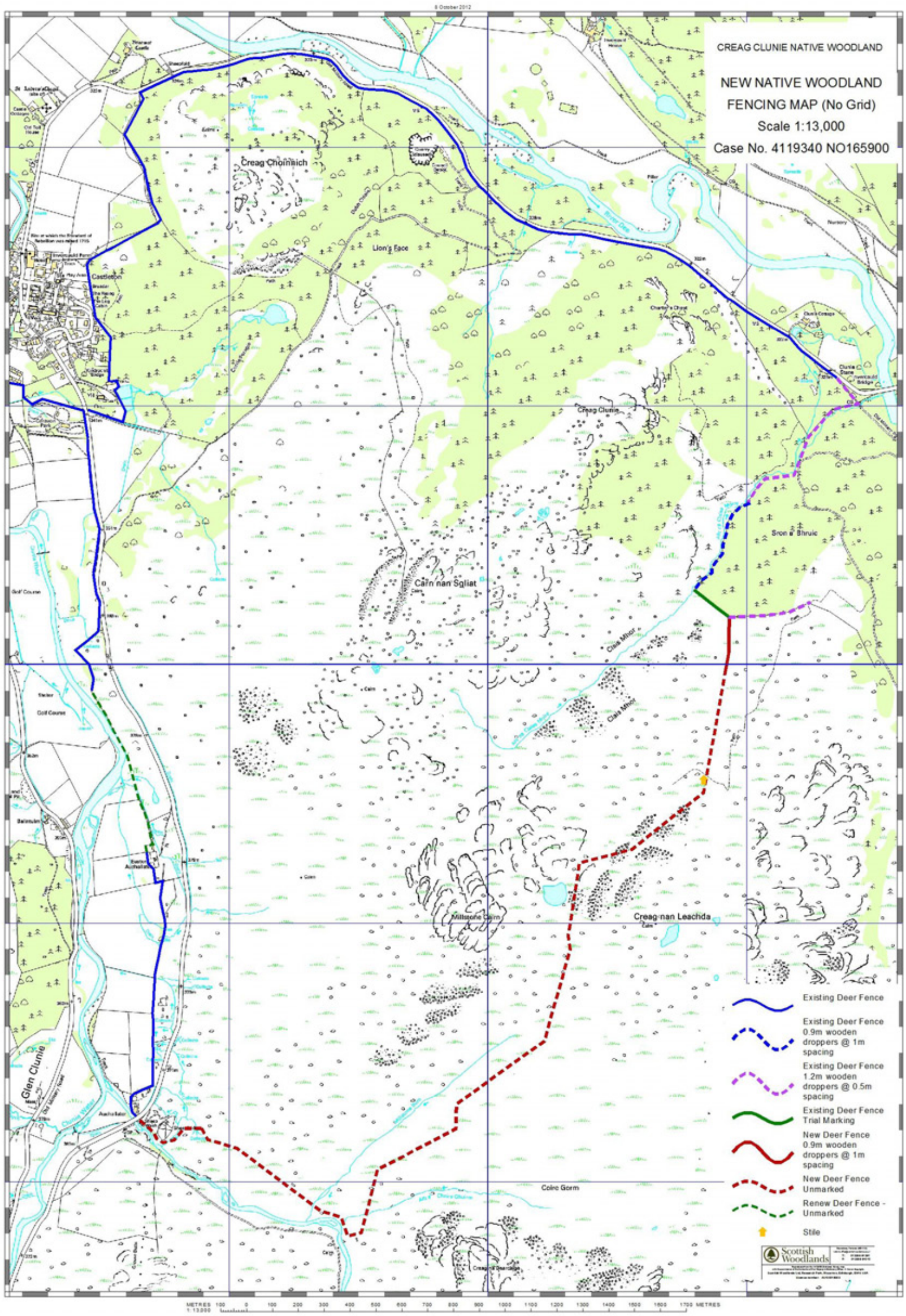
APPENDIX 4: DESIGNATIONS MAP



APPENDIX 5: ACCESS MAP

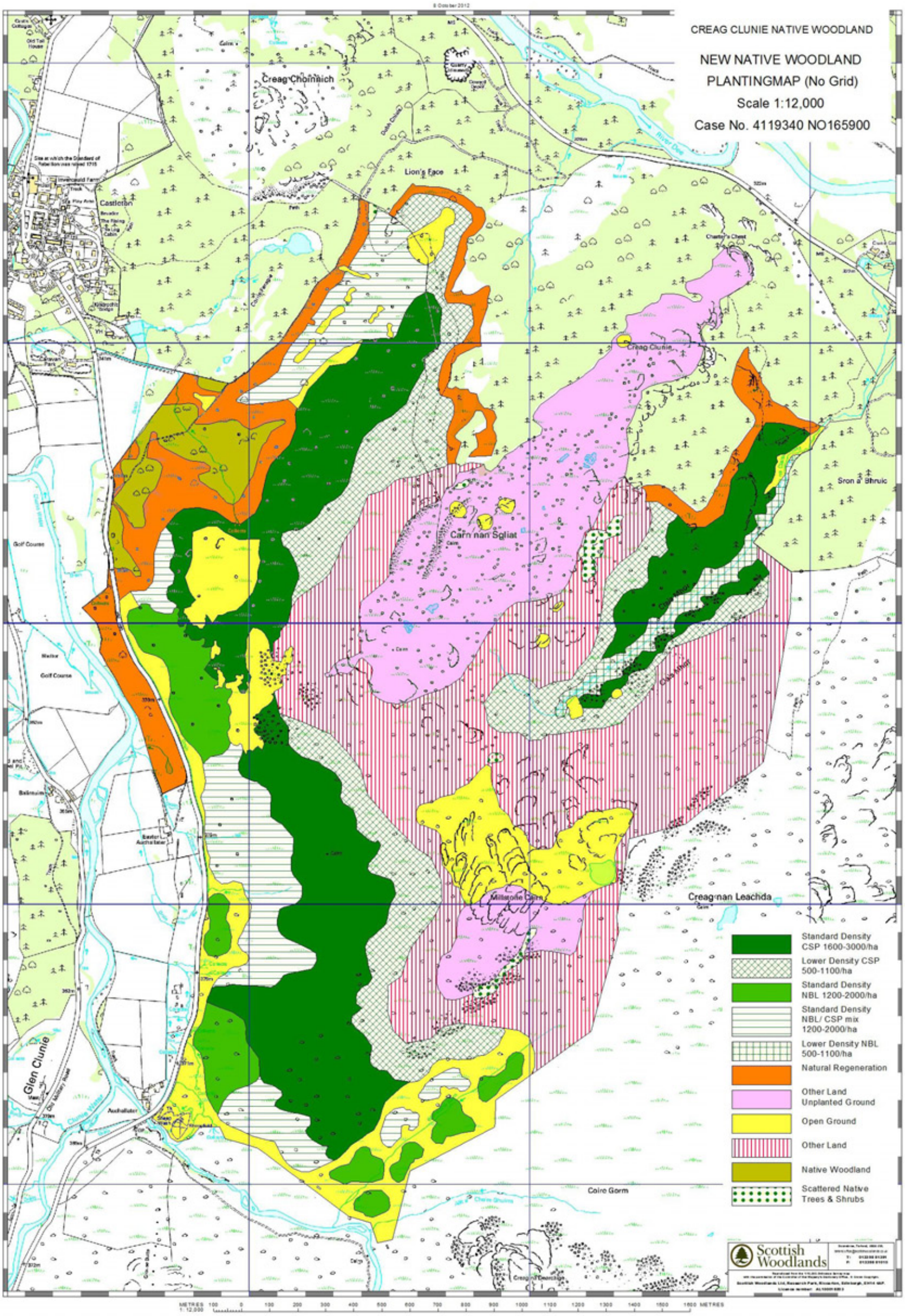


APPENDIX 6: FENCING MAP (amended)



APPENDIX 7: LANDSCAPE APPRAISAL – VISUAL MATERIAL Prepared by Simon Bell

See separate pdf file for Landscape Appraisal – visual material.
Planting Map below. CSP – Caledonian Scots Pine; NBL – Native Broadleaves



APPENDIX 8

INVERCAULD ESTATE
CREAG CLUNIE WOODLAND CREATION EIA SCOPING MEETING

Meeting held at Invercauld Estate Office, 06 July 2010

Attendees
Steve Brown (FCS) Chair **(SBr)**
Simon Blackett, Invercauld Estate Factor **(SBla)**
Bob Wilson, Scottish Woodlands Ltd **(BW)**
Mike Thomson, Scottish Woodlands Ltd minutes **(MT)**
Carol Robertson, Scottish Native Woods **(CR)**
Simon Bell, Landscape Architect **(SB)**
Matthew Hawkins, Cairngorms National Park Authority (CNPA) **(MH)**
Moira Grieg, Aberdeenshire Council Archaeology Department **(MG)**
James Scott, Deer Commission Scotland **(JS)**
Elizabeth Clements, SNH **(EC)**

BACKGROUND TO THE PROPOSAL
SBla As well as treating its forestry seriously, the estate also has a major deer stalking interest. Striking a balance between these 2 passions is the aim of the estate and the main reason for the proposed deer fence.
West side of Ballochbuie is owned by Invercauld . A regeneration scheme is in place but the regeneration is struggling without a fence and it can't at present be managed in the way both the agencies and the public wish. The woods are part fenced but open to the hill. A fence is required as the only way to manage the deer is to fence or mass cull. Many options for the fence have been looked at and the present line is considered the best in terms of landscape, cost and deer management

SBr FC involved in regeneration scheme on lower slopes. Deer management has allowed the understorey to regenerate but not the trees.

TECHNICAL DETAIL
BW.
Site Description & Location
Elevation between 350 – 743m
Underlying geology is acid rock
Ground vegetation details provided by SNH
Screes above the road will provide an open aspect
Designations need to be accounted for in the planting design to ensure they are best protected
Fencing
Fenceline is hoping to disappear from view from A93 asap & deer grid will remove the necessity for the fence to come along the roadside
Fence will be constructed of rylock top & bottom with possible marking on the eastern side close to Ballochbuie. Marking will be minimised for landscape purposes
Watergates required over the Auchallater burn to allow fence to cross stream
Cultivation
A mixture of scarification and mounding.
Scarifier will be used to disturb the heather & expose the soil
Tracked digger to produce raised mounds of densities ranging from 3000+ to 3/400 in the upper edges
Hand mounding where mechanical cultivation is not possible

Wet flushes will be left and the scheme will concentrate on the drier areas
SBr could areas of rank heather be burned? **SBIa** Yes, if possible
Tree Species
Principally Caledonian Scots pine – 70%
Native Broadleaves – 30%
Planting planned for 2012 with cell grown & bare root stock
Fertiliser
Will be applied by hand where deemed necessary, particularly on Scots pine
Flora & Fauna
Bird species include peregrines, ring ouzel & golden eagles
Deer – removed once fencing up. Control to be carried out by the estate
Hares – possible concern over mountain hares
Maintenance
Beating up, weeding & fence maintenance will be carried out as required
Water
SEPA have made contact to say Forests & Water Guidelines should be followed at all times & if any areas of deep peat are encountered these should be surveyed
Timescale
BW produced a flowchart showing the timeline (Appendix 1). The proposal is still on schedule as per this document
Mountain Biking
Produced a map showing an outline of a possible mountain bike route through the scheme (**SBIa** – not likely to ever be part of the scheme)

CONSULTEES DISCUSSION

SB
Landscape
Scheme lies wholly within Cairngorms National Park & is prominent from many viewpoints:
- Creag Choinnich
- A93
- Braemar golf course
- Morrone

CNPA has carried out a landscape character assessment which splits Glen Clunie into 2 units- upper & lower Clunie. This scheme straddles both of these
Significant that the woods in the area lie north of River Dee but do not extend up Glen Clunie – this scheme should restore a natural woodland area
The scheme will have areas of pure broadleaves & pine with some mixtures
Proposed woodland comes high up Carn na Sgliat so question as to where the natural tree line will be in landscape terms
Auchallter will be important as car park positioned here & people will walk in the area
Roadside planting will be highly visible & this will require a variable edge

CR
Can purpose of muirburn be clarified? (**BW** – remove rank heather. **SB** – burning may create a phosphate flush)

MG.
Archaeology
Most sites on the west side of the scheme
Deer fence will go through an old settlement (**BW** already an existing fence there)
North of Auchallater Burn – reasonable sized site with sheep pens etc
Site to south of Auchallater track but looks like the scheme misses this
MG to be notified if any other sites discovered during operations

MH
Species – keen to see montane scrub encouraged with direct intervention if possible (**SBI** – scheme within the treeline zone so may not get too much scrub. **BW** - no grant available at present. **SBr** - possible there will be some regeneration on rocky outcrops). Would also like to see aspen included
Black grouse – marking of fence possibly for this species (**SBIa** – no leks in area but 1 on Balmoral)
Landscape – alignment of fence important, avoid straight lines down the hill (**SB** – planting will break up the linear features)
Viewpoints – any views that are framed/obscured? Consider both of these for visitor experience especially roadside viewpoints entering Braemar
Public Access – are their established walks within the area where views might be interrupted?
Mountain Biking – serious consideration & some concerns about network

JS
Questions on fenceline on A93 where deer grid is – appears to create a tunnel that could trap deer
Concerns over track gates and watergates as these will create weak spots (**SBIa** – watergates probably OK as loch at top of burns alleviates flooding. Track gates will include pedestrian swing gate)
Have cull figures been set & is there likely to be a compensatory cull? (**SBIa** – recent count carried out & cull figures must involve discussions with Balmoral. Reality is a substantial cull, likely around 100 – will be a positive thing for road safety)

EC
SNH concerned with inside and outside fence. What effect will deer have on outside of fence on Ballochbuie SPA/SAC? Condition of these cannot be allowed to deteriorate further
Need latest deer counts (**JS** – cull will be whole hefted population inside & out fence. Tracks will be monitored & if on Invercauld land, estate will have to act)
Would like EIA to include alternatives to deer fencing (**SBr** – already 10 years experience of no fencing in Creag Clunie).
Concern about fence on east of scheme and effect this will have on Capercaillie (**SBr** – fence will be sited & marked)
Can part of existing fence be removed to mitigate new fence? (**SBIa** – existing fence on east is Balmoral's. Fence along roadside will remain at present for road safety)

SBr closed the meeting by thanking everyone for their attendance and summarising the discussions. **MT** to produce a set of minutes to be submitted to FCS & form part of the EIA report

INVERCAULD ESTATE
CREAG CLUNIE WOODLAND CREATION EIA SCOPING MEETING

Public meeting held at Braemar Village Hall, 06 July 2010

No members of the public attended.

Aberdeenshire COUNCIL Transportation and Infrastructure Operations

T&I Operations Roads (Marr)
Carlton House
Arduthie Road
Stonehaven
Aberdeenshire
AB39 2QP

Our Ref S/1/1220//70
Your Ref RGW/ALB
Please ask for Ralph Singleton
Direct Dial 019755 64926
E-Mail ralph.singleton@aberdeenshire.gov.uk

24 June 2010

Mr R Wilson
Manager North East Scotland
Scottish Woodlands
Dounebrae
Tarland
ABOYNE
AB34 4UL

Dear Mr Wilson

INVERCAULD ESTATE, BRAEMAR
CREAG CLUNIE WOODLAND CREATION PROPOSAL
ENVIROMENTAL IMPACT SCOPING MEETING

I refer to your letter of 9 June, 2010.

I am afraid I will be on holiday on 6 July, but please note my comments in connection with the proposed deer grid on the A93 at Auchallater.

- Planning consent may be required
- The deer grid must be sited on a straight section of road such that a vehicle travelling on the road is not required to making a change of direction whilst on the grid.
- Warning signs will be required on both approaches to the deer grid.
- A gated by-pass will be required

If you have difficulty in reading this paper please contact Ralph Singleton (019755) 64926

- The deer grid will have to comply with the Highway Grid Type V1 in accordance with the enclosed drawing.

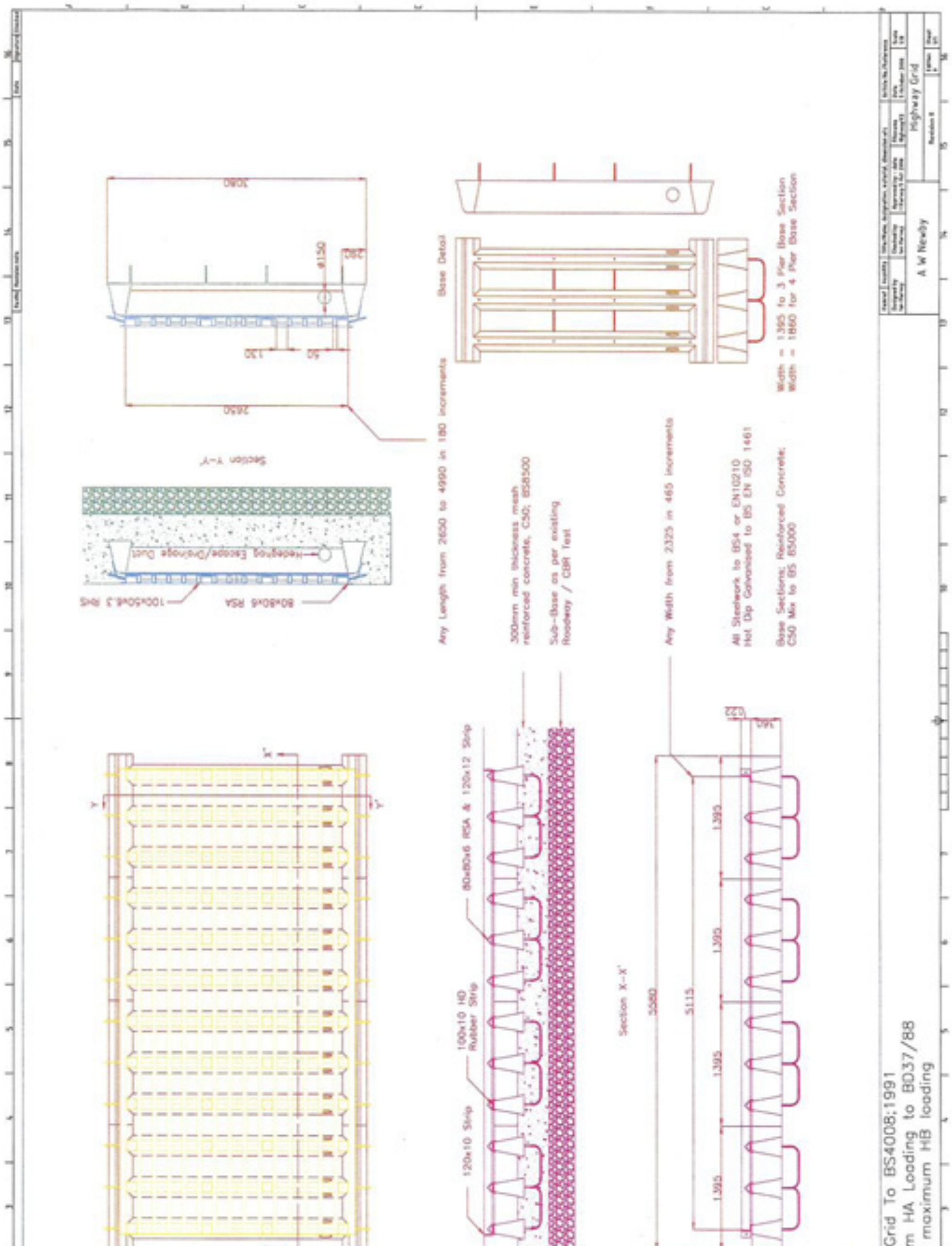
I trust this meets your requirements.

Yours sincerely

R Singleton.

Ralph Singleton
Principal Roads Engineer Marr

If you have difficulty in reading this paper please contact Ralph Singleton (019755) 64926


Highway Grid To BS4008;1991
240 kN/m HA Loading to BD37/88
30 Units maximum HB loading
Section X-X'
Section Y-Y'
Base Detail
120x10 Strip
100x10 HD Rubber Strip
80x80x6 RSA & 120x12 Strip
100x50x6.3 RHS
80x80x6 RSA
Hedgehog Escape/Drainage Duct
Any Length from 2650 to 4990 in 180 increments
300mm min thickness mesh reinforced concrete, C50; BS8500
Sub-Base as per existing Roadway / CBR Test
Any Width from 2325 in 465 increments
All Steelwork to BS4 or EN10210
Hot Dip Galvanised to BS EN ISO 1461
Base Sections; Reinforced Concrete;
C50 Mix to BS 8500
Width = 1395 for 3 Pier Base Section
Width = 1860 for 4 Pier Base Section
2080
2650
5580
5115
1395
A W Newby
Highway Grid

CREAG CLUNIE NATIVE PINEWOOD SCHEME, INVERCAULD ESTATE, BRAEMAR

Environmental Impact Assessment Meeting 21/07/10 between Ms Maggie Laws, Scottish Natural Heritage, Mr Steve Brown, Forestry Commissions Scotland and Mrs Carol Robertson, Scottish Native Woods (minutes).

Key is the capercaillie interest on the site, in particular the impact of the scheme proposals on population and the potential of the habitat created for expansion. Issues to be addressed:

- Deer fencing and its impact on colonisation of the new habitat.
- Habitat development e.g. blaeberry to assist colonisation by capercaillie.
- Any displacement of deer to surrounding areas.

Need for an extension to the existing assess track to assist site management as well as ground preparation prior to planting were discussed and the requirement for SSSI consent confirmed.

NATURA appraisal will be carried out for the notified features, capercaillie and possibly heath, by the Agencies.

Need to identify areas of important bryophyte interest and retain as managed open space.

Support for montane scrub development on the upper areas by supplementing the existing natural regeneration. (Reference made to FCS draft paper on montane scrub development with potential for up to 25% of scheme area eligible).

Review Landscape Assessment of the fenceline down the south side of the Callater Burn to ensure the "best line" in landscape terms is achieved. Explore potential to expand or formalise an access route within the scheme.