Forestry Commission Scotland
Coimisean na Coilltearachd Alba

Lochaber Forest District
Land Management Plan

# GLEN NEVIS

2015-2025

FC Reference: 030/519/406

Lochaber Forest District

# GLEN NEVIS

Land Management Plan

## FOREST ENTERPRISE - Application for Land Management Plan Approvals in Scotland

**Forest Enterprise - Property**

| | |
|---|---|
| Forest District: | Lochaber |
| Woodland or property name: | Glen Nevis |
| Nearest town, village or locality: | Fort William |
| OS Grid reference: | NN 1193 6838 |
| Local Authority district/unitary | Highland Council |

**Areas for approval (Ha)**

| | Conifer | Broadleaf | Open space |
|---|---|---|---|
| Clear felling | 209.5 | | |
| Selective felling | | | |
| Restocking | 59.5 | | |
| Open space | | | 30 |
| Natural regeneration | 60 | 60 | |
| New planting (complete appendix 4) | 48 | 113 | |

1. I apply for Forest Design Plan approval for the property described above and in the enclosed Forest Design Plan.

3. I confirm that the initial scoping of the plan was carried out with FC staff on

4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.

5. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC agreed must be included.

6. I confirm that consultation and scoping has been carried out with all relevant stakeholders over the content of the of the design plan. Consideration of all of the issues raised by stakeholders has been included in the process of plan preparation and the outcome recorded on the attached consultation record. I confirm that we have informed all stakeholders about the extent to which we have been able to address their concerns and, where it has not been possible to fully address their concerns, we have reminded them of the opportunity to make further comment during the public consultation process.

7. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

| | |
|---|---|
| Signed<br>  <br>Forest District Manager | Signed<br><br>Conservator |
| Date<br><br>5/4/2015 | Date |
| Approval date | Approval ends |

# Contents





We manage Scotland's National Forest Estate to the United Kingdom Woodland Assurance Standard – the standard endorsed in the UK by the international Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification. We are independently audited.

Our land management plans bring together key information, enable us to evaluate options and plan responsibly for the future. We welcome comments on these plans at any time.

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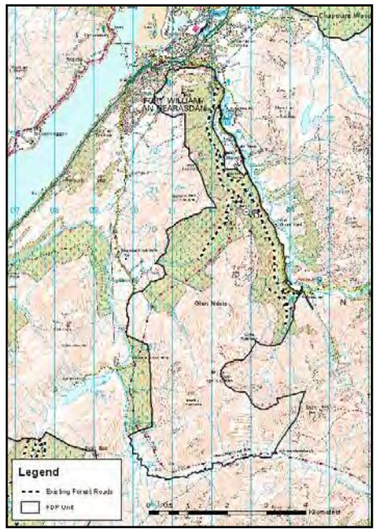
# GLEN NEVIS: Land Management Plan 2015-2025

## Summary of Proposals

- Felling of 209.5 hectares of commercial conifer timber over the next ten years. No new roads or major upgrades will be required over this period.
- Emphasis on restocking the lower slopes and better soils with commercial conifer including Norway spruce, Sitka spruce, Douglas fir and Scots pine.
- Restructure forest margins at Cow Hill and the far end of the glen to improve the integration with the surrounding landscape.
- Emphasis on creating a better woodland upper margin of upland birch and native pinewood to blend better with the surrounding landscape.
- Maintenance and enhancement of grazed areas of cattle and sheep to benefit habitats for hen harrier, black grouse, pearl-bordered fritillary and chequered skipper.
- Retention of Scots pine stands to retain a seed source for natural regeneration and provide habitat for red squirrels.
- Expand area of new woodland including 143 hectares of new native woodland and 18 of new commercial conifer woodland.

# 1.0 Introduction:

## 1.1 History of the forest




The Forestry Commission landholding around Glen Nevis comprises 2521 hectares of woodland and open hill to the south of Fort William. The current extent of the landholding has been created over a period of time. The earliest acquisition began 1924 followed by a series of acquisitions and disposals over subsequent decades. The latest of these has been the purchase of 1500 Ha of Blar a Chaorainn to the south in 2013. The area is situated to the south and east of Fort William and faces the principal approach to Ben Nevis. The area comprises around 1000 Ha of commercial forest and 1500 of open hill and mountain. Within this are remnants of native woodland and native Scots pine.

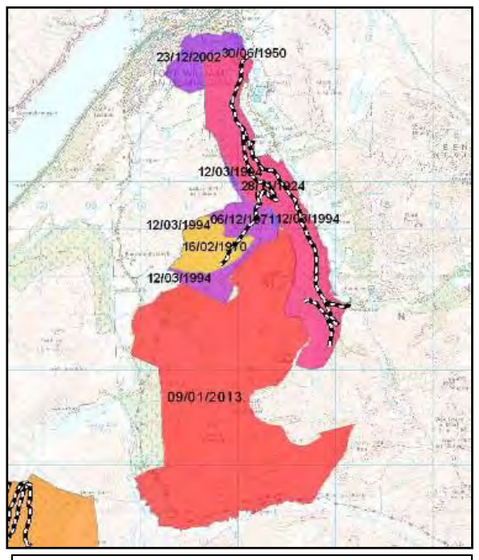

Timothy Pont's map of Lochaber c. 1600.

The area is shown on Timothy Pont's maps of Lochaber dating from around 1600. The area is not shown in detail but some woodland is indicated along the lower reaches of the River Nevis.

Roy's map of the highlands shows virtually no woodland beyond the immediate riparian zone of the rivers. Some form of cultivation is shown along the length of the glen on the lower ground. The Ordnance Survey of 1885-1900 similarly shows little woodland other than that along isolated burns.

Roy's map of the Highlands 1747-52


OS 1" 1885-1900




Acquisition of Glen Nevis by FC

# 2.0 Analysis of previous plan

## 2.1 Aims of previous plan and achievements

**Producing wood and marketing timber**
Majority of fellings completed. Some outstanding coupes currently in the programme. One has been withdrawn due to access issues but may be reprogrammed as these are addressed.
**Managing or regenerating forests and woodlands.**
Previous plan has improved diversification and more diverse forest.
**Enhancing the landscape.**
Felling of coupes along the principle road through Glen Nevis has improved the quality of the landscape for visitors along the glen. It has also improved views out from the forest road. Some of the felling coupes have been carried out and dropped over a long period of time and this has resulted in poor landscape quality in places for a number of years.
**Maintaining and creating new wildlife habitat.**
Some sites programmed for restock have regenerated and this has been recruited and incorporated into the design. Some of the felling coupes have also been amended in order to retain areas of Scots pine. Grazing on Cow Hill has benefited the habitat for chequered skipper.
**Providing public recreation.**
Facilities have been maintained to a high standard although the West Higland way is showing signs of deterioration due to wear and tear and increasing pressure. Braveheart car park has also suffered from storm damage and high usage. Walks around this area remain very popular.
**Conserving archaeological features.**
Known features have been conserved during forest operations. Felling around Dun Deardail has improved the quality of the experience in this area. The restock patter has sought to maintain the character of the area.

## 2.2 How previous plan relates to today's objectives

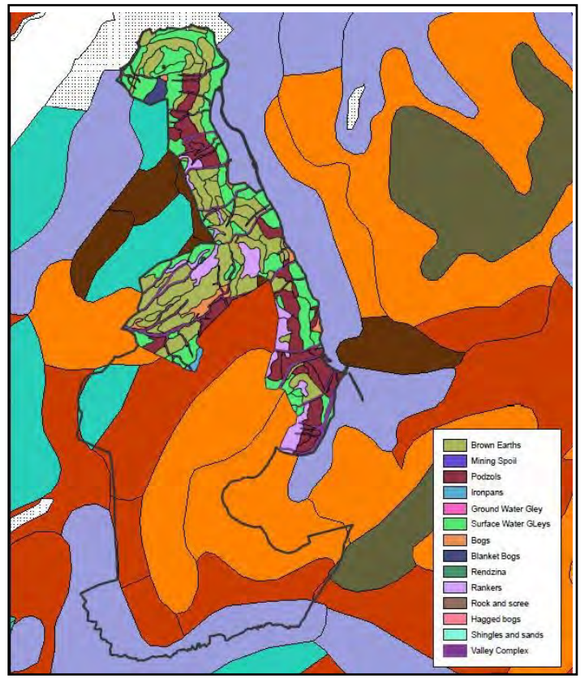
Managing recreation, managing and regenerating forest and woodlands and enhancement of the landscape were seen as high priorities in the previous plan. These remain high priorities in this sensitive location.
Timber production and creation of new wildlife habitats will remain as medium priorities.
Conservation of archaeological features was previously a low priority. However this should be regarded as medium to high on account of Dun Deardail and other sites such as the Tollie township.

# 3.0 Background information

## 3.1 Physical site factors

### 3.1.1 Geology Soils and landform

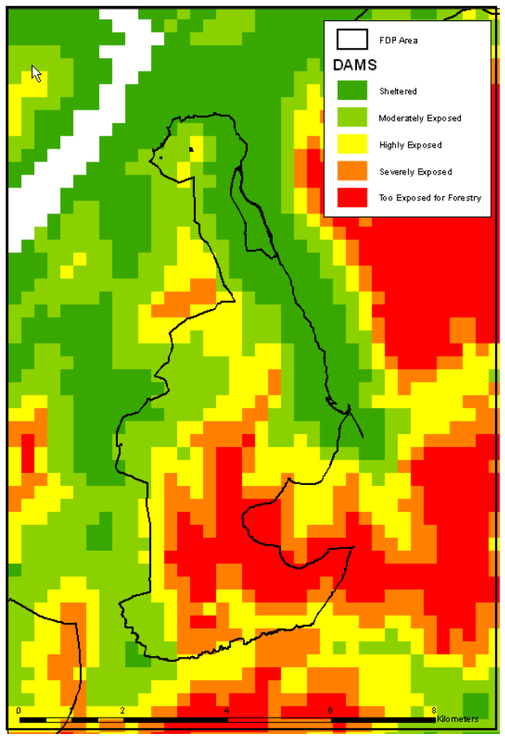
The underlying geology of Glen Nevis is Dalriadic metamorphic rocks, varying in nature from acidic white quartzites to schists and base-rich metamorphic limestone. The Grampian Highlands, to which Glen Nevis belongs, are the worn down remnants of an ancient mountain range which have been sculpted and polished by the relatively recent glaciation of the quaternary period. Glen Nevis itself is a classic broad U-shaped valley with truncated crags, steep sided valleys, hanging valleys and corries that are typically associated with glacial landscapes. Although there are some area of base rich-relatively free draining soils on the upper slopes, much of the site is covered by peaty gleys or peats. Soil type, however, changes rapidly across the site due to the complexity of the landform and underlying geology, so there are pockets of much drier well drained soil surrounded by wetter, less stable areas. In order to assist in the silvicultural potential of this area the Forestry Commission carried out a soil survey across the main part of the site.



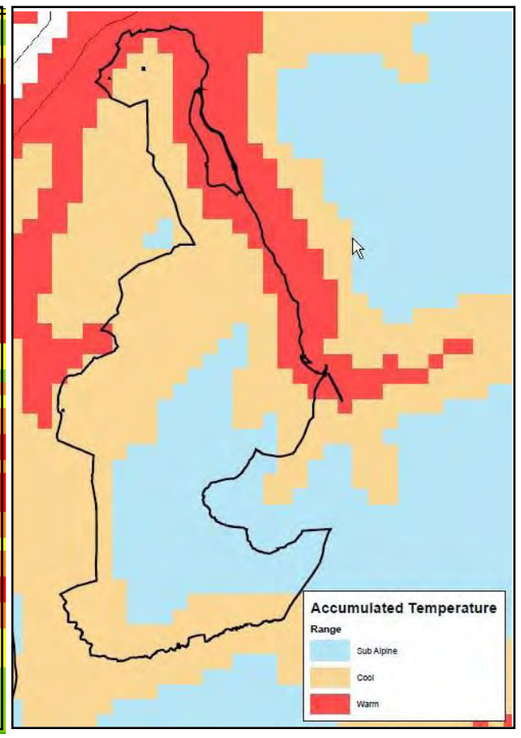

Solid geology

The landform is complex. The area is defined by the catchments of the River Kiachnish to the west and River Nevis to the east. The FC land area comprises a long north-south ridge dividing these catchments. To the south the ridge sweeps east to the south of Ben Nevis.

To the east the ridge is defined by steep corries and incised burns. To the west the fall into the glen is less severe.




Exposure




Moisture Deficit

### 3.1.2 Water

The ridge dominated by Mullach nan Coirean forms a watershed and forcing water to drain to east and west into the River Nevis to the east and River Kiachnish to the west. Both catchments are relatively small and drain into Loch Linnhe within ten kilometres. The River Nevis is a heavily modified water body although it has good ecological potential. Pressures on the river are not forestry related but nevertheless impacts of the forest on the river may be taken into account. Drainage of the main forest is characterised by a series of small, steep watercourses running straight down the slope. No properties take their water supply from the forest. The river Nevis is in good ecological condition, and has a healthy population of water voles. Although there are salmon in the river, it is not considered to be a major fishery.

A network of streams within Tollie drains into the Allt Riasgaig and then into the River Kiachnish which then flows into Loch Linnhe at Coruanan Lodge. As far as is known, no properties use the Kiachnish as a water supply. The River Kiachnish is less heavily modified but has only moderate ecological status. The reasons for this are forestry related, particularly with regard to afforestation on the upper reaches of the catchment around Tollie. The previous plan is has already begun to address this issues through felling and restocking with appropriate buffer zones. The plan will continue to contribute to this improvement through application of buffer zones in accordance with UKFS guidelines.

There are no known occurrences of North American signal crayfish, Japanese knotweed, giant hogweed, Rhododendron or Himalayan balsam in the area.

| Water body or protected area ID | Water body or water dependant protected area name | Type | Classification and pressures which the Plan could address |
|---|---|---|---|
| 20329 | River Nevis | Heavily Modified Water Body | Good ecological potential |
| 20328 | River Kiachnish | River | Moderate status due to riparian vegetation. |

Area of proposed felling in each catchment over the next ten years.
River Nevis = 140 Hectares
River Kiachnish = 69.5 Ha.

### 3.1.3 Climate

The general climate is mild, wet and windy. The range of altitude, from 20 metres to 400 metres above sea level means that exposure is variable with DAMS scores ranging from 9 on the more sheltered lower slopes to 20 on the exposed upper slopes. Much of the Mullach nan Coirean ridge is too exposed for woodland and forestry. The sheltered and moderately exposed sites lie in Glen Nevis itself and around the fringes of Blar a Chaorainn

## 3.2 Biodiversity and environmental designations

While the area includes less ancient semi-natural woodland relative to other forests in Lochaber, native pinewoods and birch woods support rare species such as black grouse and red squirrel. Black grouse are found in the open habitats above the forest in addition to the woodland itself where open glades and rides are particularly important. Red squirrel use stands of mature conifers through the forest and the patches of hazel woodland on the slopes of Cow Hill. These slopes are also important for the rare chequered skipper and pearl-bordered fritillary butterflies which breed in the sunny glades, kept open by careful grazing management with Forestry Commission cattle.

Upland heath covers much of the open higher ground in combination with areas of blanket bog and acid grassland. Less common habitats such as calcareous grassland and wet flushes are also present in addition to small pockets of montane willow scrub. The mountain summits support rarer Alpine plants.

*Woodland*

There is a small area of plantation on an ancient woodland site (PAWS) in the extreme south of the forest. This is surrounded by a larger area of restored semi-natural woodland, principally birch, but including some areas of planted Scots pine of local origin. Restored semi-natural woodland is a key feature of the southern part of the forest.

The scattered woodland on Cow Hill is considered to be of recent semi-natural origin, resulting from land use changes in the second half of the twentieth century. It is, however, of biological interest as well as being important in the landscape.

The mature conifers, principally larch species and Scots Pine towards the southern end support a very small population of red squirrels. The area does not lie within a scheduled squirrel reserve or within a squirrel buffer zone

*Open Ground*

As part of the restructuring process, the upper limit of restocking has been brought down the hill and in all the parts of the forest covered by second rotation crops there is a substantial amount of open ground. This is concentrated along the upper margins, but is also located around watercourses. The Dun Deardail site is another significant area of open ground and this is bordered by areas of failed plantation, on the shoulder between Tollie and the main forest block, giving a fairly natural transition between open ground and closed canopy forest.

Within the forest, regeneration of birch and willow in open areas is profuse and areas along roadsides that were once open have become in-filled with trees with a potential loss of biodiversity.

There is an area of alkaline grassland above the current tree-line just north of the Tollie area that is slowly regenerating with spruce.

At the moment this is only a minor threat, but increased tree regeneration would threaten this site. The incorporation of Cow Hill into the forest has substantially increased the proportion of open ground.

## 3.3 The existing forest:

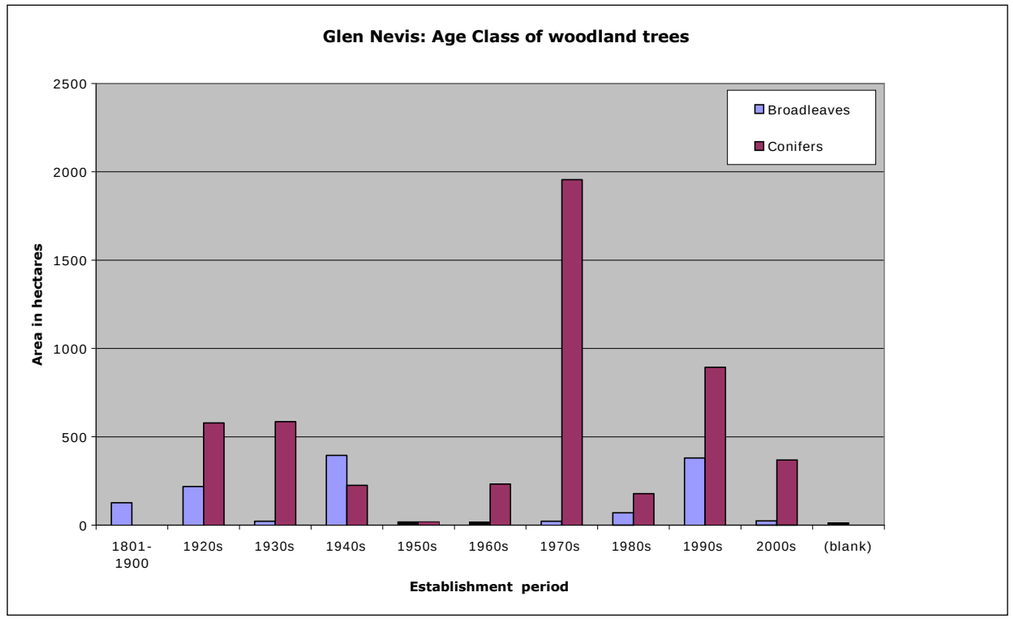
### 3.3.1 Age structure, species and yield class

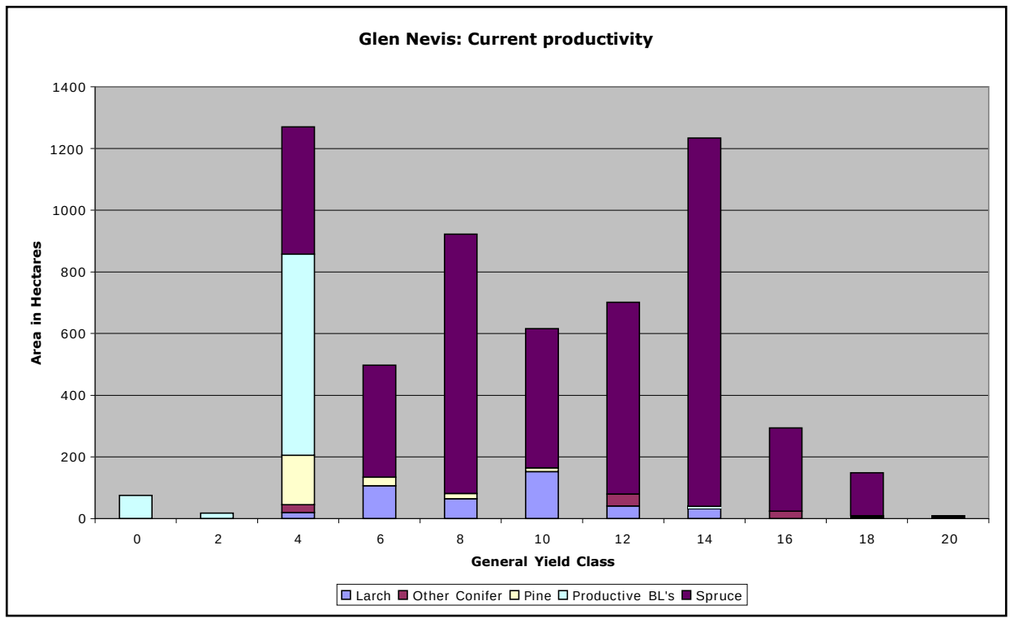
The woodland is fairly typical of the period. The slow period of accumulation of land in the glen has resulted in crops from the 1920s-1940s. There was a large period of expansion in the 1970s which is typically dominated by Sitka spruce. Older crops are more diverse and are comprised of larches, Norway spruce and pine.

Sitka spruce comprises 45% of the total land are and 67% of the current woodland area. There are further opportunities to reduce this figure following a refinement of soils information. The future of both larch and lodgepole pine remain in doubt at the present time due to plant health issues (*Phytophthora ramorum* and *Dothistroma-DNB* needle blight respectively). Existing stands of mature Scots pine are currently looking relatively unaffected by DNB, but there remains a threat. There is currently little ash in the woodland.

### 3.3.2 Access

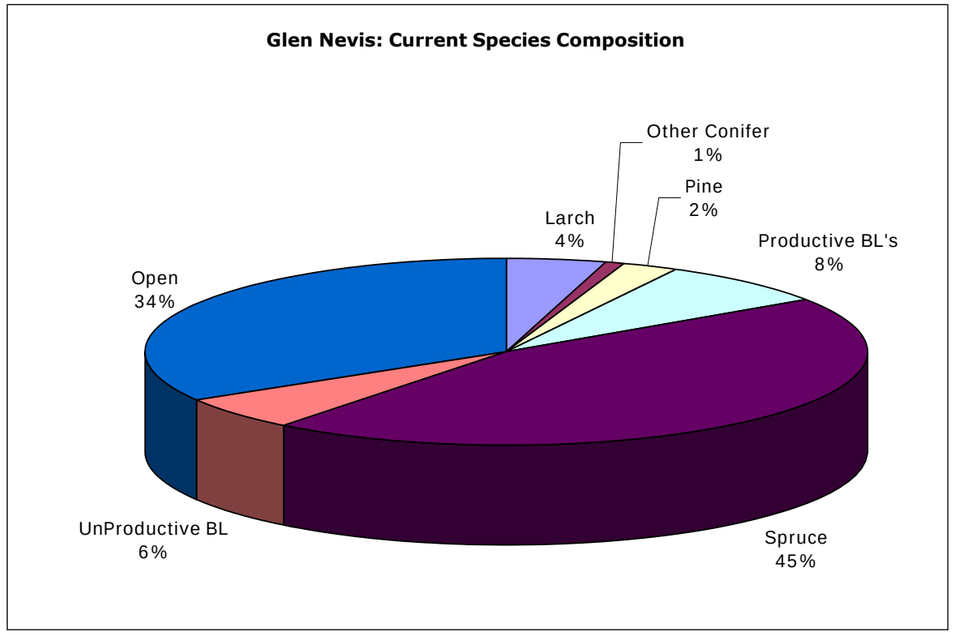
There is one main forest road running the full length of the main forest block, with two spurs leading up steeply towards Tollie and towards Sgorr Chalum. Tollie is largely un-roaded although a significant amount of road construction has been carried out under the previous plan. No new road construction or upgrade will be required during the period of this plan.




### 3.3.3 Silvicultural systems

The majority of the crops have been traditionally managed under clearfell/restock systems. In recent years much of the glen has been felled and restocked with commercial conifer species such as Sitka and Norway spruce. Clearfelling will remain as the principal mechanism for initiating landscape change for the next ten years.




Until the mid 1980s most crops were thinned, offering potential for alternative silvicultural systems. However, due to changing policies this practice was abandoned resulting in largely un-thinned crops from the 1980s onwards. Consequently there are few opportunities for alternative silvicultural systems within existing mature stands. Exceptions to this are among older Scots pine stands that have been well thinned and some occasional retentions of spruce.

Younger stands of spruce on less severe slopes provide opportunities for future alternatives to clearfell (ATC). These are largely concentrated in the lower part of the glen. Early thinning will be an important aspect of realising the future potential for this (see thinning plan).

Broadleaved stands largely comprise birch on the upper margins and will be left to minimum intervention. These will be retained as such but assisted in spreading expanding where possible through active deer management.

### 3.3.4 Current and potential markets

There is a strong demand for the principle products of the forest. Spruce is in high demand and finds a ready market at BSW in Corpach and James Jones at Mosstodloch. Small round wood and bio-fuel also find access to ready markets via the A82 and A86.

## 3.4 Landscape and land use

### 3.4.1 Landscape character and value

The forest of Glen Nevis is located within the Ben Nevis and Glen Coe National Scenic area. The small block of Tollie is located just outside. The area has been designated for its iconic mountain scenery for which Scotland has global fame and Glen Nevis is considered by many to be one of the most beautiful glens in Scotland. The forest forms a significant part of the woodlands that cover the lower reaches of the glen sides. The valley floor is pastoral, broken up by a meandering river.

The bulk of the Nevis range dominates the scenery. The huge mass of rocky mountains rises steeply out of glacial valleys that divide up the area. The Nevis Forest is located in areas identified, by the Landscape Character Assessment (LCA) of Lochaber (SNH, 1997), as "Mountain Massif" and "Smooth Moorland Ridges".

The forest within Glen Nevis itself is located within the **Mountain Massif** zone, which contains '*the highest summits and deepest glens*'. The smooth rock and scree sides of Glen Nevis that plunge down from the summit of the Ben demonstrate tremendous visual force of the '*steep sweeping concave slopes*'. The landscape is on '*a vast and imposing scale*'.

The landscape of the side valley containing the Tollie block is transitional between the mountain massif and **Smooth Moorland Ridges** which is described as being of a far gentler nature, of undulating hills cloaked in heather and grasses. At Tollie the landscape is more undulating where it meets the Mountain Massif. Forests from large blocks on the hillsides and lower foothills and broadleaves are associated with croft settlements, loch edges and the lower slopes.

To the south of Tollie lies the imposing ridge dominated by Mullach Nan Coirean. This is more sweeping in it character than that of Tollie nad Cow Hill area and is characterised by smooth, steep sided mountain ridges.

### 3.4.2 Visibility

The forest is a major feature in the enclosed landscape of Glen Nevis and particularly from Ben Nevis. It is mostly seen in views from the lower sections of the walkers' path to the summit of Ben Nevis and from the visitors' facilities on the floor of the glen near Achintee. From Fort William the northern end of Cow Hill his highly conspicuous. With its distinctive telecommunications mast, Cow Hill is a well known orientation point in the local landscape.

The lower boundary of the forest follows the line of the only public road access down the glen to Lower Falls. It is seen as a significant component of local views from this road.

The smaller area of Tollie, in the side valley above Glen Nevis is seen from the scattered dwellings and farms of Blarmachfoldach and is a dominant foreground feature in the views from the fort Dun Deardail. It is also visible from the middle section of the paths to Ben Nevis from between 200m and 900m. However, given the scale and drama of the surrounding landscape it is only a minor element within the extensive views. The West Highland Way passes through the forest. From it there are some opportunities to see the forest in its landscape context, though local views mostly dominate.

The newly acquired area of Blar a Chaorainn extends to along this parallel glen with the River Kiachnish along its bottom. The glen is enclosed and not visited by many people other than those walking the West Highland Way. Nevertheless the scale of the landscape here is sweeping within a large U-shaped glen.

### 3.4.3 Neighbouring land use

Glen Nevis Forest is set among a typical mixed upland landscape of small-scale crofts, upland farms, commercial forestry plantation and deer forest. The lower part of the glen is well-developed for the tourist industry. There is adjacent forestry activity on the east side of Blar a Chaorainn at Lundavra.

Much of Glen Nevis is managed as open sheep pasture or deer forest. Until the point of acquisition Blar a Chaorain was managed as a hill farm with cattle and sheep. All the cattle and a significant number of the sheep have been removed from the hill, but a portion of grazing animals will remain as part of the future management regime.

## 3.5 Social factors

### 3.5.1 Recreation

The mountain landscape and Ben Nevis in particular attracts thousands of sightseers, walkers and climbers, many of whom base themselves in the tourist accommodation in Glen Nevis. The West Highland Way, an extremely popular long distance path, passes through the forest on its last leg to Fort William. The first views of Ben Nevis and their destination are seen from the Tollie valley. Provision of a high quality recreation infrastructure is therefore of great importance in Glen Nevis. There are three main groups of people who use the forest and each group experiences it in a different way. Firstly are the people who access the forest from the bottom of the Glen. These people are typically either staying in the camp site, youth hostel or chalets within the glen, or they are day visitors parking in one of the car parks. The major access points for this group are via the Braveheart and Lower Falls car parks, but there are also access points at the end of the peat track and near the Youth Hostel.

The second group of users are those people following the West Highland Way, either on foot or by mountain bike. This route enters the forest via the southern edge of Tollie, drops down to the main forest road and exists via the peat track to join the public road into Fort William.

The third group are mainly residents of Fort William, or people staying in the town. Access tracks from behind the leisure centre, from the Plantation and from Upper Achintore lead up on to Cow Hill and this area has long been used for informal recreation. The Sugar Loaf View path connects Cow Hill with the forest road, making it possible to complete a circular path from the town via this path and the peat track. The recent addition of a new multi-user path from the top of the peat track, across the upper slopes and joining the Sugar Loaf View path provides an alternative route and gives opportunities for several different circuits. Cow Hill has a WIAT (Woodlands in and around towns) designation and is seen as an important area for addressing the Forestry Commission's social agenda.

### 3.5.2 Community

There are strong links between the forest of Glen Nevis and the local communities. In the past there has been a considerable amount of work provided by the establishment of the forest. This has dwindled over recent years. However, the purchase of Cow Hill in 2002 provided for the opportunity for stronger links between the forest and the local community. There is now a long walk around Cow Hill with a link to a view point at the mast. The circular walk ties into the communities at Fort William in several places providing informal access on foot.

With fewer opportunities for local people to enjoy gardening or grow their own produce, the residents of Fort William have formed an allotment association to solve the problem. Working with Forestry Commission Scotland, the Sunny Lochaber United Gardeners (SLUG) have secured 17 allotments on forest land in Cowhill,

The local community has been very involved in the formation of the allotments with open days being held to encourage people to get involved. A number of local groups have been actively involved in the project including Highland Council, the police, local health professionals and a number of local community groups.

### 3.5.3 Heritage

There is one scheduled ancient monument within the forest, the iron age vitrified hill fort of Dun Deardail. This is a particularly well preserved example of its type and sitting in the middle of a large area of unplanted ground is under no serious threat from the current structure of the forest at encroachment on the open space from natural regeneration of conifers.

There are the remains of a deserted village Tollie. It appears to have been deserted as a result of a cholera outbreak, probably in the early nineteenth century. The 1972 planting did not take this feature into account and the site is currently hidden beneath the tree canopy albeit well-preserved.

The peat track has been identified as being of cultural and historical interest. This was used by the residents of Glen Nevis to gain access to the peat cutting grounds above Upper Achintore. The path has recently been upgraded to a high standard and is an important part of the recreational access network.

## 3.6 Statutory requirements

| Designation | Feature | Impact |
|---|---|---|
| Ben Nevis and Glencoe National Scenic Area | Some of the NSA special qualities pertinent to the Glen Nevis area.<br>• A land of mountain grandeur<br>• A land of classic highland vistas<br>• Human settlement dwarfed by mountain and moorland<br>• The impressive massif of Ben Nevis<br>• The wild Mamores and secretive Glen Nevis<br><br>Extract from: Scottish Natural Heritage (2010). The special qualities of the National Scenic Areas. SNH Commissioned Report No.374. | The plan seeks to conserve and enhance the principal qualities of the landscape, initially through clearfelling, but complemented by ongoing management of woodlands, stock and deer. |
| Water | The River Nevis is a heavily modified water body although it has good ecological potential. Pressures on the river are not forestry related but nevertheless impacts of the forest on the river may be taken into account. Drainage of the main forest is characterised by a series of small, steep watercourses running straight down the slope. No properties take their water supply from the forest.<br><br>The River Kiachnish is less heavily modified but has only moderate ecological status. The reasons for this are forestry related, particularly with regard to afforestation on the upper reaches of the catchment around Tollie. | The river Nevis is in good ecological condition, and has a healthy population of water voles. Although there are salmon in the river, it is not considered to be a major fishery.<br><br>The previous plan is has already begun to address this issues through felling and restocking with appropriate buffer zones. The plan will continue to contribute to this improvement through application of buffer zones in accordance with UKFS guidelines and a diversification of the species composition in the upper reaches of the catchment. The Lairig Mor new planting plan provides significant areas of new riparian woodland which will improve ecological status of the watercourse. |
| Core Paths & PRoW | There are a number of core paths and Public Rights of Way through the area. These include the West Highland Way. | Forestry Commission staff have worked closely with outdoor access officers to maintain access through the forest during forestry operations in line with the Scottish Outdoor Access Code. This continuing fruitful relationship will be key to ensuring that the plan is delivered through the proposed operations. |

# 4.0 Analysis and Concept

See Site Analysis and Design Concept Maps

# 5.0 Land Management Plan Proposals

## 5.1 Management Vision

It is proposed that the landscape within Glen Nevis will gradually appear to be less intensively managed over time. The future woodland type and its management will include elements of semi-natural woodland, native species and areas of continuous cover management that will complement the open hill and mountain, increase naturalness and enhance the ecology.
Over time, the landscape will move away from one of a polarised land-uses (forestry plantations contrasting starkly with open grazed hills) to one in which the transition from woodland to open hill is less well defined. There will be room for commercial plantations, but also for intermediate open margin upland birch woods as well as some mixtures.

This will help to make what is now a heavily wooded flank of the glen sit more comfortably into its surrounding landscape. Felling coupes and areas of planting or natural regeneration will focus on managing this transition. An overarching aim of the proposals is to achieve apparent naturalness throughout the glen. This will complement the rugged features and irregular skylines that are key characteristics of the landscape character. At the mouth of the glen and on the lower slopes there will be a higher level of management intervention and planting of commercial conifers will be favoured where soil and access conditions allow. Deeper into the glen and on the upper margins a more naturalistic approach will be favoured, creating more integration between woodland and open hill. This reflects the landscape character in other parts of the glen.

This approach to creating a more natural woodland character, using native and semi-natural cover, is also a characteristic of the recent new planting at Blar a Chaorainn. It is proposed to extend this woodland south along the lower western slopes of Meall a' Choarainn, using woodland cover that will also be dominated by native species, but also small groups of non-native species on some of the lower slopes. These lower slopes are characterized by small scale, fertile hummocky land form, and a diversity of species will be used to pick out this detail.

Any additional new planting proposed to extend into the more remote glen south of Meall a' Choarainn will be entirely of native woodland planting, reinforcing the strong sense of relative remoteness on this stretch of the West Highland Way.

The existing conifer woodland at Tollie will be reshaped so that the outer margin reflects the shape of the land form, and restocking proposals will incorporate open space and riparian woodland to pick out the dramatic gulleys, a well shaped and scaled setting of open space and broadleaves to create a setting for Dun Deardil and a mixture of native woodland to link with the recent new planting on Blar a Choarainn. This will be combined with some areas of commercial conifer woodland in the more accessible locations.

Overall, the intention is to significantly increase the amount of native and semi-natural woodland in the more remote, most visually dramatic and less accessible locations; to enhance the landscape by reshaping awkward margins and encouraging a more natural transition between forest and open hill top; to extend biodiversity interest by establishing networks of riparian, native woodland and open space where they will link existing and new woodland; and to establish a base of accessible commercial conifer and broadleaved woodland that could be managed through continuous cover, on lower slopes more closely associated with managed land and built development.

## 5.2 Future habitats and species

Glen Nevis will remain a highly productive area in terms of timber production for many decades. Existing stands of mature conifer will gradually be felled in suitable sized coupes over time.

The plans proposed will produce a wide range of ecological benefits over a long period of time.

Areas of high montane scrub and heathland will be maintained and enhanced. Deer numbers will gradually diminish through culling and sheep number will be reduced through removals thereby limiting grazing pressure and enrichment.

There will be some planting of the corries around Blar a Chaorainn with montane willow and montane tree and shrub species that will assist in ecological transition from woodland to open hill and mountain. This will enhance habitat for montane species such as

The upper margins of the existing forest will be managed to promote a transition zone of upland birch interspersed with area of pine woodland. These will be similar in character but with a higher proportion of birch on the upper margins and a higher proportion of Scots pine lower down. Where this is achieved through natural regeneration, the species composition may be influenced by supplementary planting or by re-spacing. The aim is not to establish woodland at commercial spacing but to achieve a naturalistic self-sustaining canopy of varying spacing and species composition.

## 5.3 Restructuring

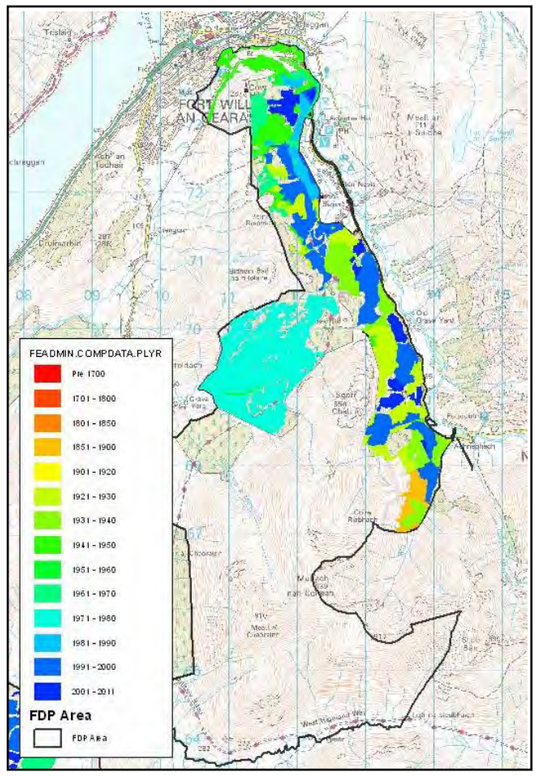
A considerable amount of restructuring has taken place of the last 10-15 years in the glen. This process will be continued in order to diversify the age class structure woodland. Tollie is an area that requires a significant amount of work and this will be one of the main focal points now that a road has been constructed that will facilitate this process. Much of the felling work proposed for the next ten years is characterised by steep ground in poor access. This will mean that much of the work will be carried out in difficult conditions and possibly at high cost. Much of the work on these steep sites will be carried out by skylines and winches rather than conventional wheeled harvesters and hill-climbers.

## 5.4 Species composition and plant health

The species composition is currently fairly diverse. However, while there remains the aspiration to continue the diversification process there are equal limiting pressures. There are principally from plant health issues affecting the small area of lodgepole pine and particularly larch. While larch remains an important species for red squirrels it is unlikely that many stands will be resilient against *Phythopthora ramorum*. The large area of mature larch will be particularly vulnerable and will be felled in the initial phases of the plan. An attempt will be made to retain some of the smaller stands at least for the foreseeable future.

There is little evidence that Dothistroma is affecting the existing Scots pine. However, lodgepole pine is likely to be a significant vector for the disease. Therefore lodgepole pine will no longer be planted here but Scots pine will continue to be promoted and the situation reviewed during further iterations of the plan. The retention of Scots pine will to some degree compensate for the loss of larch in terms of squirrel habitat.

## 5.5 Age structure




Current Age Class structure

The current age class structure of commercial stands is relatively diverse following many years of felling. The last remaining areas of large even-aged conifer is that of Tollie. This will be broken up through the implementation of the next ten years of this plan.

## 5.6 PAWS restoration

The amount of ancient woodland in the glen is comparatively small ( 27 hectares) and confined to the southern part of the forest. Some of this has been felled of the conifers and re-established with site native broadleaves. The next phase of felling in the plan will remove the remaining mature conifers and re-establish with Scots pine and mixed broadleaves.

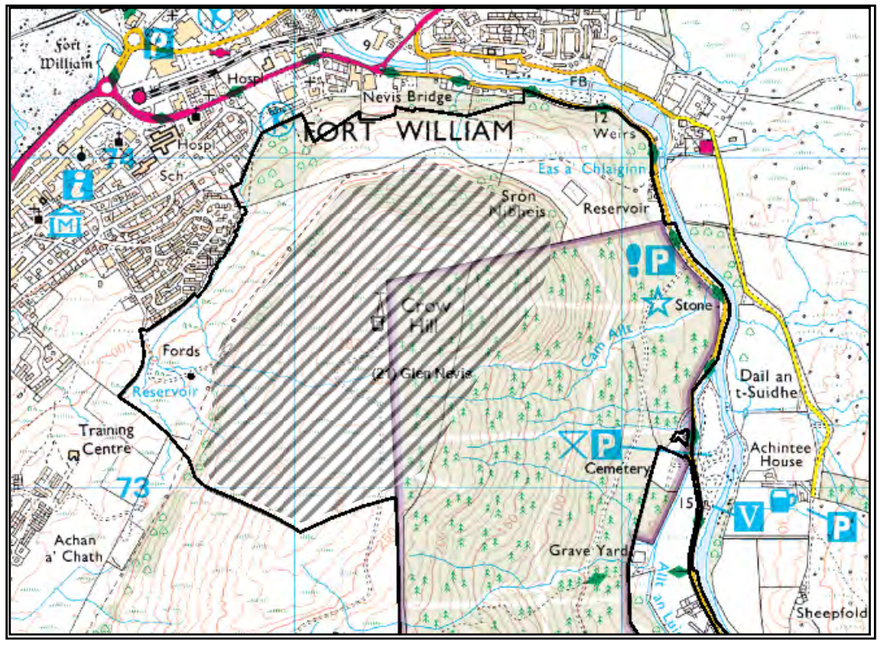
## 5.7 Management of open land

### Cow Hill

At Cow Hill the aim would be to encourage some usage of the area by the cattle for shelter and reduce rank growth without completely removing all of it (hen harrier territory). This would encourage the spread of native birch scrub woodland as a result of grazing impacts and ground disturbance which in turn would favour Black grouse and woodland glade butterflies. This area in due course will allow the dynamic expansion and management of cow hill as a developing woodland open glade system to favour key species Black grouse, Chequered skipper along with other species.

The current demarcation fence alongside the northern area beside the path will remain as it helps to define the grazing area and provide some security between members of public walking dogs and the cattle.

Until this point the cattle numbers at Cow Hill have been around 6 mature cows. There is likely to be some change in (+/- 2-3) this but only to prepare future replacements to get to know the ground before the older cows are taken away. Current cows are in middle to old age. Previous agricultural tenant had up to 12 cows on site, but this resulted in woodland decline and retreat, although black grouse favoured 1-2 spots with severe grazing impact.




Approximate area of future grazing

## Blar a Chaorainn

Until 2013 the hill farm at Bla a Chaorainn had 1100 ewes on site. Under SRDP funding habitat improvements reduced this to 596 ewes 20 Tups (excluding lambs etc). The SRDP contract expired at the point of acquisition by Forestry Commission. Since this point the ewe flock has been reduced by a by a further 20%. This will be reduced by a further 60-80 ewes during 14/15 depending on lambing survival etc. Plan proposals will take up some of the lower part of the current grazing site. However there will remain room for a modest number of ewes to remain on the hill beyond the area identified for new planting. This is likely to be in the region of 200 ewes with a complementary number of summered cattle. This will allow some sward height to return and to increase invertebrate content across the area.

Current flock is a straightforward commercial Black face sheep, crossed with Suffolk and Cheviot tups to maximise lamb production. In the future another conservation orientated breed may be utilised to better target site objectives. This could be for rare breed survival, reduction in feed needs, better utilisation of certain areas (poor forage) and improved overall economics for the site.

The area is not suitable as a starter farm but there may be a future option to offer any grazing post-plan development remains with the right set of parameters and conditions in place.

## 5.8 New Planting

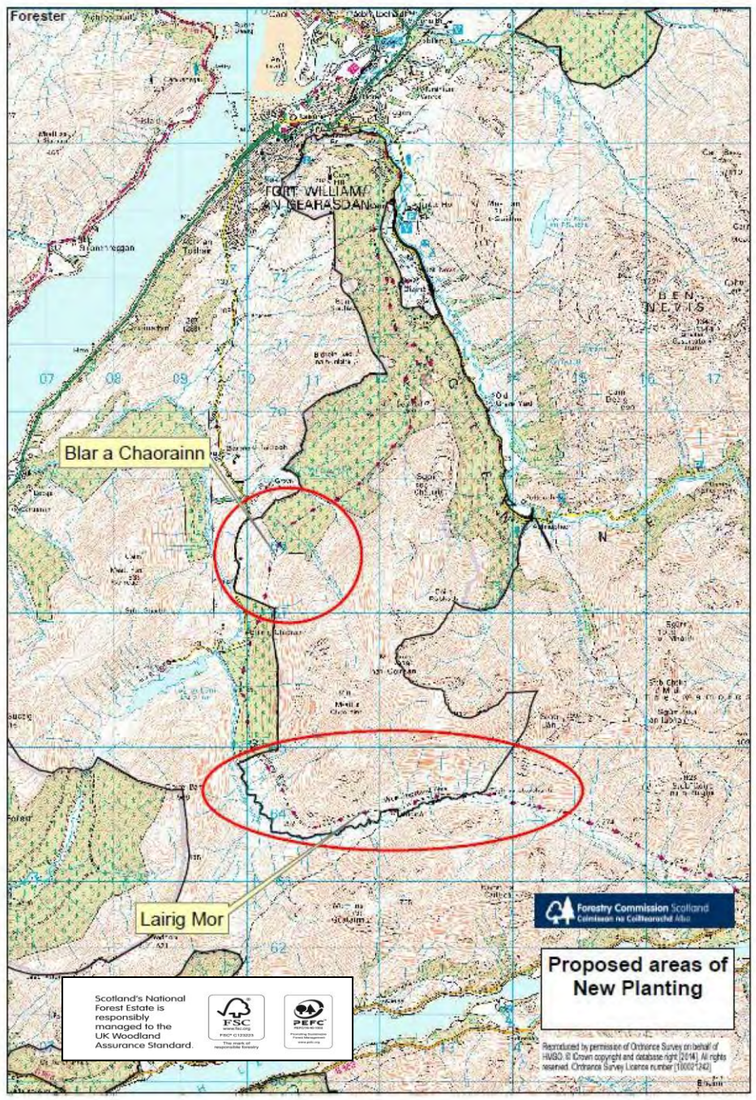
The area at Blar a Chaorainn and Lairig Mor offers potential for a significant area of new native woodland establishment and a modest amount of commercial conifer. Much of this area is high and mountainous with incised corries and some lower level agricultural grazing. The West Highland Way sweeps around the southern flank of the Munro peak of Mullach nan Coirean before the entering into Tollie and dropping into Glen Nevis.

These newly acquired open areas will be used as the basis for a new woodland creation project. New woodland will be predominantly native with some elements of commercial productivity where this fits with the character of the landscape. The area around Blar a Chaorain will offer a mixed broadleaved woodland at low levels rising through pine. Birch woodland and upland birch woods with montane planting at higher elevations. Key views from the West Highland way and points of strong sense of place will be maintained. This includes a string of small peaks adjacent to the West Highland Way offering views down the glen to Loch Linnhe.

The area further to the south around Lairig Mor will consist entirely of new native planting. Again this will be predominantly pine and birch woodland with upland birch and higher altitude planting of montane willow and juniper. Key areas to be retained as open as the more sensitive areas of deep peat and blanket bog. The creation of these woodland areas will significantly enhance the quality of the final leg of the West Highland Way from Kinlochleven to Fort William.

The woodland creation will also have significant biodiversity gains particularly in promoting future habitat for black grouse and red squirrels, pine, birch, montane and riparian woodland.

The new woodland creation proposals amount to 143 Ha of new native woodland planting and 18 Ha of commercial conifer, predominantly Sitka Spruce (see maps).



## 5.9 Deer management (from Deer Management Plan)

### Past/current deer management.

Main land use is productive forest with areas of native woodland and an ancient woodland site. Deer are managed to attempt to achieve a balance with their habitat. This requires a low density population of 5/100ha or less. Perimeter fences are important to separate the commercial woodland from neighbouring agricultural land use.

### Previous Cull Records

| Year | Red | Roe | Sika |
|---|---|---|---|
| **10/11** | **14** | **12** | **0** |
| **11/12** | **22** | **20** | **0** |
| **12/13** | **12** | **28** | **0** |
| **13/14** | **14** | **14** | **0** |

**Cull Records: Comment /Additional Information**

Within the fenced commercial woodland, culls are taken both in and out of season; night shooting is employed as necessary. Male deer of all species are shot throughout the year, while females are not shot from 1st April to 30th September.
Deer on Blar a Chaorainn open hill will only be culled in season.

Adjacent Land Use

| | **Comment** |
|---|---|
| Existing Woodland | Glen Nevis |
| Mixture of Woodland / Arable Land | Blar a Chaorainn |
| Unimproved Pasture /Open Hill | Blar a Chaorainn |
| Public Access / Recreation Facilities | All FCS woodlands are open to public access at times. West Highland way. |
| Deer Vehicle Collisions (DVCs) | |
| Public Safety issues | |
| Other | |

### Description of the Resources (Deer and Habitat)

### Deer

Information relating to demographics of the deer population

Deer Resource: Comment /Additional Information
SNH deer count 2011 recorder 11045 Red Deer on the Mid West Association of Highland Estates Deer Management Group.

The method currently being used to measure crop damage in Lochaber Forest District is via visual assessment and recorded in OGB4 stocking density assessment forms. Nearest Neighbour assessments are also conducted annually on all P1 restocks. As one of our key objectives in deer management is the prevention of damage. Damage assessment is therefore given a high priority in terms of determining appropriate cull levels.

Information relating to any significant **woodland** deer population

Woodland Deer Density Indicators

| Evidence | 4-8/100 Ha Low Density | 8-15/100Ha Medium Density | 15+/100Ha High Density |
|---|---|---|---|
| **Tracks** | Difficult to find deer slot marks or defined paths. | Defined paths slot marks easy to find in areas of soft ground. | Many well defined tracks and paths often black with constant use. |
| **Dung** | Difficult to find with just the odd isolated pellet group. | Pellet groups relatively easy to find, particularly on woodland edges and good feeding areas. | Pellet groups very easy to find. Highly concentrated on favoured feed areas. |
| **Browsing of Vegetation** | Natural regeneration of broad-leaved trees taking place with no or little damage to current year's incremental growth. | Broad-leaved saplings present but showing significant damage. | No seedlings growing above dominant vegetation height. Often well defined browse lines on established shrubs and plants. |

Information Relating to Known Deer Densities (counts etc)

Glen Nevis under 10 /100ha
Blar a Chaoriann density 1-3 /100ha

**2011 SNH count 11045 Red Deer on Mid West Association of Highland Estates DMG**

## 2. Habitat

Information Relating to Habitat and Condition

| Habitat Type | Area (Ha) | Vulnerable to deer pressure | Comment |
|---|---|---|---|
| SSSI / SAC / SPA / NSA | | Yes | |
| Open Hill Ground | | Yes | |
| Internal Open Ground | | Yes | |
| Native Woodland | | Yes | |
| Broadleaves | | Yes | |
| Commercial Conifers | | Yes | |
| Other: | | | |

Evidence of historical / existing damage

### (i) Impacts to woodlands, agricultural interests and habitats

Annual nearest neighbour assessments on all P1 restocking. FCS target is for less than 10% leader browsing. Currently browsing is above this across the area.

### (ii) Impacts on natural heritage interests

SSSI
NSA
SPA

# Part 2
# Deer Management Plan

**(a)** Management Plan Objectives

The main objective of deer management within the FCS Woodlands is to regulate deer populations at a level that is compatible with their environment and our other management objectives. This means that we aim to prevent unacceptable damage to commercial tree crops and in key areas to maintain or enhance biodiversity. This will be done in a professional and humane way, ensuring the physical well being of the remaining deer populations within the forest boundaries. Venison income will be optimised and opportunities to create revenue from culling permissions may be taken, but without compromising the over-riding issue of damage prevention. This strategy should be read in conjunction with FC Operational Guidance Booklet 5.

All species are capable of causing significant damage to productive forests and woodlands as well as reducing species diversity in the ground flora, resulting in the prevention of natural regeneration by native tree species. This is increasingly recognised as a major barrier to maintaining and increasing biodiversity in British woodlands. At very high densities deer are prone to increased levels of parasitism and disease (rare in UK conditions), poor breeding success and early mortality. In impoverished upland habitats they can also suffer from starvation.

Method(s) used to assess if objectives are being met

| Objective or issue | Method of assessment | Monitoring period and frequency | Who is responsible | Use of information |
|---|---|---|---|---|
| **Deer numbers/ Density** | EDU Clearance Dung Counts | 5 yearly | FCS | Set cull levels |
| **SSSI / SAC etc Impacts** | Site Condition Monitoring | | SNH | Set cull levels |
| | Grazing Toolbox | | FCS | |
| **Cull figures** | Dung Counts, NN assessments, Site Condition Monitoring, Local Knowledge and Experience | Constant and ongoing | FCS | Set cull levels |
| **Browsing, Bark Stripping, Fraying** | NN Assessments | Annual | | Set cull levels |
| **Annual Recruitment** | Cull data | Annual | FCS | Set cull levels |

**Monitoring: Comment /Additional Information**

The monitoring on the National Forest Estate is via visual assessment and recorded in OGB4 stocking density assessment forms. Nearest Neighbour assessments are also conducted annually on all P1 restocks. As one of our key objectives in deer management is the prevention of damage. Damage assessment is therefore given a high priority in terms of determining appropriate cull levels.

Record Keeping. (As Per Wild Deer Best Practice Guide).

All deer shot are recorded in the Wildlife Management System. Data captured include: Species, sex, age class, weight, location (grid ref and DMU), in/out of season, night shot, embryos, lactation, etc.

Engagement with neighbours, DMG and Local Community

**Comment /Additional Information**

Liaison with neighbours is essential to the cost-effective implementation of Forestry Commission deer management objectives. Lochaber Forest District is an active participant in local deer management groups. Such groups provide a forum for explaining and gaining acceptance of Forestry Commission policy and for agreeing forms of mutually beneficial co-operation with regard to deer management matters. An open, honest approach will be taken with attempts made to promote a good understanding of the professional approach to deer management in our forests.

# Appendix I: Tolerance Table

| | Adjustment to felling coupe boundaries | Timing of restocking | Change to species | Wind throw or environmental response | Adjustment to road lines |
|---|---|---|---|---|---|
| **FC Approval not normally required (record and notify FC)** | <10% of coupe size | Up to 7 planting seasons after felling (allowing fallow periods for Hylobius). | Change within species group E.g. Scots pine to birch,<br><br>Non-native conifers e.g Sitka spruce to Douglas fir,<br><br>Non-native to native species (allowing for changes to facilitate Ancient Woodland policy). | **Low sensitivity area** Where wind throw or death from disease or other environmental factors represents more than 60% of the crop the area including standing trees within the affected area may be felled. | **Low Sensitivity Area**<br>Creation of turning points/ loading bays. Departures of <100m either side of the predicted centre line of the road/ track in low sensitivity areas.<br><br>**High Sensitivity Area**<br>Deviation <75m in either direction from centre of track |
| **Approval by exchange of letters and map** | 10-15% of coupe size | 7 years + | Change of coupe objective likely to be consistent with current policy (e.g. from productive to open, open to native species). | **Low sensitivity area** As above to include up to 5ha of standing crop beyond the affected area to a wind firm or reasonable edge.<br>Areas where wind throw represents less than 60% of the standing crop.<br><br>**High Sensitivity Areas**<br>Areas where wind throw represents more than 60% of the standing crop. | **Low Sensitivity Area**<br>Departures of 100m metres in either direction from centre of road in areas of low sensitivity.<br><br>**High Sensitivity Area**<br>Deviation of 75-100m in either direction from centre of road or track |
| **Approval by formal plan amendment** | >15% of coupe size | | Major change of objective likely to be contrary to policy, E.g. native to non-native species, open to non-native, | **Low sensitivity area**<br>Wind thrown or affected area where area greater than 5 Ha (of healthy crop) required to reach a wind firm or reasonable edge.<br><br>**High sensitivity area**<br>Areas where wind throw represents less than 60% of the standing crop.<br>Felling of standing trees beyond the area of wind throw or affected area. | As above depending on sensitivity |