



Forestry and
Land Scotland
Coilltearachd agus
Fearann Alba

Appendix I

Clunes & Loch Arkaig Land Management Plan brief

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Description

The Land Management Plan (LMP), covers Loch Arkaig Forest and Clunes Forest located over 9km NW of Spean Bridge, Lochaber. The LMP area consists of one large forest area with two smaller outlying forests (Culcharn and Allt Mhuic), to the west on the north side of Loch Arkaig. West Loch Arkaig is accessed from the C1153, east Loch Arkaig and south Clunes are accessed from the B8005 and north Clunes is accessed from the U1035 which accesses the A82 at South Laggan. The land rises from 30m elevation on the shores of Loch Lochy to 917m at the summit of Meall na Teanga. Steep slopes dominate Clunes Forest and east Loch Arkaig Forest.

The LMP area is 3002ha in size, of which forested land covers 1,184ha and open land on part of the larger hill area occupies 1,818ha. FLS managed Glengarry Forest lies immediately north of the main section of the LMP, Loch Lochy to the east with Achnacarry Estate to the west and south and the Arkaig Community Forest to the south east at Clunes. The Woodland Trust now own the South Arkaig blocks – previously owned by FLS (FES). The local communities of Achnacarry, Bunarkaig and Clunes neighbour Loch Arkaig and South Clunes, with Kilfinnan neighbouring north Clunes. The A82 follows the east side of Loch Lochy and provides clear views of the main forested face of Clunes Forest. Homes and holiday accommodation view the forest over the loch.

The current forest land use comprises of 987ha (83%) of high forest, 6ha (0.5%) of windblown crop, 30ha (2.5%) of bare unplantable ground and 161ha (14%) of felled ground (awaiting restocking). Much of the felled area lies in Loch Arkaig Forest at the westerly Culcharn and Allt Mhuic woodlands and at Cia-Aig around the vicinity of the Dark Mile pinewood remnant. There are two felled areas in south Clunes which are highly visible from the A82. The main planting decade was the 1950s, followed by the 1990s and 2010s with second rotation crops. Mature woodland (pre-1940) occupies 166ha (17%) of the high forest area and comprises of a mixture of native woodland and non-native plantation crops.

The open hill and forested section of Clunes Forest dominates the landscape of this section of the Great Glen from the A82. This LMP will consider future management to enable the woodland to naturally fit into the landscape through a natural progression of native habitat from loch side to mountain top.

Social Factors

Clunes and Arkaig Forests lie close to the Achnacarry, Bunarkaig & Clunes and Kilfinnan communities. The visual impact of Clunes Forest affects those who live alongside or travel along the A82 on the east side of Loch Lochy. This view is affected by the unnatural upper forest edge on Clunes face. The LMP does have high visitor numbers using informal visitor facilities such as forest car parks and trails at Allt Mhuic and Cia-Aig waterfall, hill access routes at Cia-Aig and Cam Bealach (following the ScotWays old drove road and route to church), and a small forest car park at Clunes forest. The Great Glen Way (GGW) long distance footpath and cycle route uses the forest road along the lochside at Clunes Forest. A diversion has been put in place to avoid passing through the Coire Glas pumped storage exploratory operations zone. The “Trailblazer” campsite, which is relocated to the Allt Dearg alluvial fan is managed by Scottish Canals. It offers basic facilities for walkers, cyclists and kayakers travelling along the GGW. This route is currently the second busiest long distance trail in Scotland. Other visitors to the forest include anglers, day trippers and those experiencing “wild camping”, especially within the vicinity of the Clunes Forest car park.

The LMP lies out with public water supply catchments, however, the Allt a’ Mhanain in south Clunes provides the private water supply for the residents at Clunes hamlet.

Environmental Factors

There are no formal designations associated with this LMP. The Kinlochhourn -Knoydart-Morar Wild Land Area (WLA) designation affects the western watershed of Clunes hill and the forested section of upper Glean Cia-Aig. This designation denotes the wildness, naturalness and remoteness as landscape features of the area. It does note the extensive conifer plantations, which extend out of neighbouring glens, such as those around Loch Arkaig, as encroaching upon the wild land qualities.

Clunes and Loch Arkaig LMP lies in an area where forested lower slopes are a feature of the landscape, with upland areas described as sparsely vegetated with few trees, numerous outcrops that punctuate the steep rugged terrain, which is inaccessible and remote with wild character and long panoramic views.

The Allt Mhuic Butterfly Reserve in west Loch Arkaig was the first of its kind and is managed in partnership with the Butterfly Conservation. It promotes habitat management for chequered skipper and pearl bordered fritillary butterflies in particular. Forest research will complete their studies of the effects of the habitat management regime using woodland pasture cattle grazing

to control bracken and scrub development. Part of the reserve is recovering from the recent hydro construction along the Allt Mhuic.

Native woodland is a key feature of this LMP. Plantation on Ancient Woodland Sites (PAWS) designation affects 613ha (52%) of the forested land use area and reflects where plantation forestry replaced native woodland in the past. Ancient semi-natural woodland (ASNW) occupies 58ha (5%) of the forest and is primarily located along the riparian areas of Loch Lochy, the roadsides of the Dark Mile and along the main stream/ravines (Allts) of both Loch Arkaig and Clunes. Oaks and Birches dominate the Loch Arkaig ASNWs with Ash and Hazel dominated ASNWs found in Clunes Forest. The latter in particular supports a rich lichen community and all support Scottish rainforest habitat, including bryophyte assemblages.

The NatureScot Ancient Woodland Inventory (AWI) shows an area of open ground in north Caig as once occupied by ancient woodland. This area links PAWS designations to the south with a section of ASNW and new native woodland creation to the north. It also closes the gap to montane scrub uphill.

The LMP includes the Dark Mile Caledonian pinewood inventory (CPI) area, which although small (core pinewoods – 5.7ha with a regeneration zone of 61ha), is pivotal in terms of ecological connectivity between pinewood remnants in the wider Arkaig and Glengarry landscapes. The Pinewood core areas are somewhat limited to outcrops and cliffs. Old spruces remain within some of the core pinewood areas with the Sitka spruce setting seed in parts of the adjacent regeneration zone. The Norway spruce currently supports favourable conditions for bryophytes which are typical of pinewoods in the Scottish rainforest zone.

Montane scrub remnants on the western and eastern slopes of Meall Odhar and Meall na Teanga are deemed to be the second best habitat of its kind on FLS land. The montane scrub willows include: Downy (scarce); tetrapla; whortle-leaved (scarce); dark leaved; dwarf; creeping; caprea sphacelate (uncommon) and cinerea. This habitat is being degraded by the impact of deer. The wider montane habitat is being confined to inaccessible places where deer are unable to reach. Other montane plants include: *Sibbaldia procumbens*; Alpine woodsia (nationally rare), Holly fern and Black spleenwort.

The Ash in the ASNW and semi-natural woodlands from Clunes hamlet along the B8005 and C1153 to Allt Mhuic are infected with *Hymenoscyphus fraxineus*, commonly known as Chalara.

Priority species include: otter, bats, chequered skipper, pearl bordered fritillary, merlin, peregrine falcon, wood ants, red squirrels, juniper and badger.

Priority open habitats occupy most of the open ground. Upland heathland dominates covering 795ha, blanket bog with 464ha followed by montane heath habitat covering 344ha of high elevation ground. Minor habitats include inland rock and scree, fen, marsh and swamp and oligotrophic or dystrophic loch. There are also many very important habitats associated with montane & snowbed communities and calcareous grassland. Tall herb communities associated with calcareous geology are being confined to inaccessible areas due to high deer impact.

Watercourses are a dominant feature of the LMP landscape. The streams, especially those with gullies and ravines contain ASNW and associated bryophytes – habitat typical of Scottish rainforest. The main “Allts” of Loch Arkaig Forest are also impacted by hydro development. The Allt Cia-Aig dropped from high ecological status to moderate as a result of the hydro scheme. Elsewhere, minor watercourses are plentiful, many of which have non-native conifer species within the riparian buffer zones. The proximity of some of the minor watercourses combine to create large riparian zones for future restock areas.

The very dry weather experience in the early summer of 2023 saw all minor watercourses within the forested areas dry completely.

There are many archaeological features in the LMP, none of which are scheduled. The general area has a strong association with the Jacobites as well as the Commando training in World War II.

Farming structures dominate the historical features and are found in the more fertile and sheltered areas. Platforms used as part of the charcoal production and the Dark Mile bloomery are located in the PAWS and ASNW areas of Clunes, with some also found in Loch Arkaig.

The current hill access routes at Cia-Aig and Cam Bealach were in the past the Drover’s route to the lowland trysts and a route to the Kilfinnan Church and cemetery respectively. There are a total of 72 archaeological structures: 32 are regarded of regional importance; 31 of local importance; with nine regarded as uncategorised importance.

There are several invasive non-native species (INNS) affecting the LMP area. The main issues are the seeding of non-native invasive tree species such as Sitka spruce, Western hemlock and Beech affecting all sections of the LMP, including forest roadsides. Rhododendron is spread throughout Clunes Forest and Cia-Aig, in particular, along the forest roads, some open ground and in ASNW areas. Buddleia is becoming an issue in south Clunes where it is affecting a 2009 Sitka spruce crop and spreading along at least one forest road. Small outbreaks have been observed in Cia-Aig. Gaultheria has been observed in small quantities in the Dark Mile CPI, the forest gate at Cia-Aig and in the Achnasaul section.

Economic Factors

The high forest area covers 987ha, with conifers accounting for 717ha (73%) with broadleaf species accounting for 265ha (27%). Sitka spruce dominates the conifer element at 58%, with Scots pine at 14%, Larches at 9%, Norway spruce at 7% with LP, MC & DF composing of the remaining 12% of conifers. See figure 1 below for the breakdown of all main species.

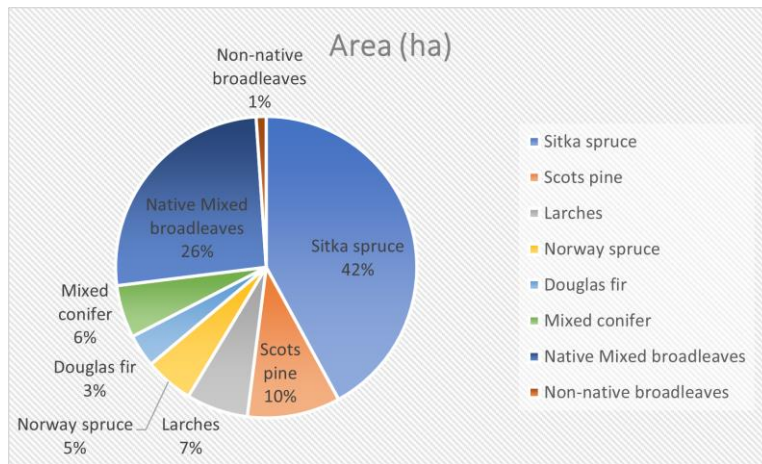


Figure 1: tree species

The forest has an uneven age structure with the most planting occurring in the 1950s, with the 1990s and 2010s accounting for most restocking planting. The 1950s and 1990s planting were dominated with conifer species with the 2010s dominated by native species. See figure 2 below for planting throughout the decades.

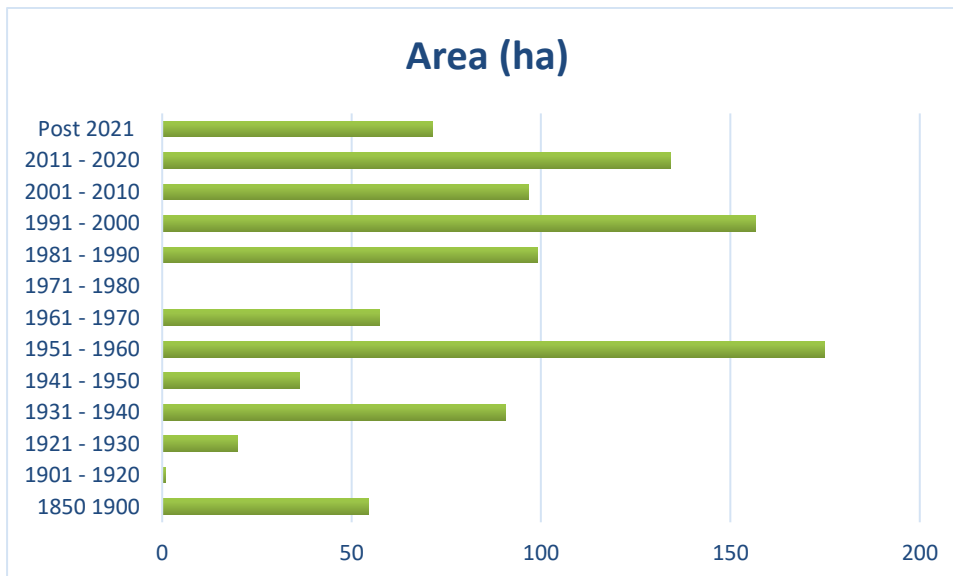


Figure 2: planting decades

First rotation spruce yielded high volumes and quality of produce, and some remain as long term rotations providing valuable stand and age class structure. The quality of some second rotation conifer crops is mixed. Spruces and some Douglas fir were replanted on sites which produced very good spruce products, however, site conditions and management practices have changed resulting in variable crop. This is compounded by the spread of heather into many areas of the forest. The vast majority of the forested area lies within DAMS scores between 0 and 16, hence it is relatively sheltered. The Sitka spruce crop current has 20% growing between Yield Classes 2 and 8. Some areas of the crop have not yet received attribute surveys and yield class information remains the estimate at planting, which is likely to be an overestimate in some areas. This LMP lies within the Larch Priority Action Zone. So far there has not been an outbreak of *Phytophthora ramorum*, however, there will be a planned gradual removal of Larch which will commence in this LMP. Much of the Larch in the Cia-Aig and Achnasaul areas of Loch Arkaig

Forest have reached economic maturity and all lie within PAWS areas. The Larch of central Clunes is more problematic due to its distribution amongst other species, its stage of growth and its position on steep ground.

The diversity of conifer species will naturally diminish as PAWS restoration progresses. There is a wider landscape scale restoration of native pinewood and native broadleaf woodland in the Arkaig catchment. Species diversity and structural diversity can be explored through PAWS restoration of pinewood, birchwood, oakwood and mixed ash woodland habitats as well as the potential for productive native woodland where terrain dictates.

Loch Arkaig Forest contains three operational hydro schemes:

- Allt Cheanna Mhuir – 0.5MW
- Allt Mhuic – 0.95MW
- Cia-Aig – 3MW

The Kilfinnan section of Clunes Forest is undergoing exploratory works for the Coire Glas pumped storage scheme. If it is developed it will have an estimated output of 15,000MW. Due to the scale and complexity of the engineering works during the 10 year construction period of Coire Glas, it has been decided to avoid any planned forestry operations in the Kilfinnan section of Clunes Forest.

Draft LMP Objectives

- To continue to enhance and expand the native woodland in the PAWS, ASNW and the Dark Mile CPI zones and riparian zones through the removal of non-native crops and manage native regeneration of local origin within reasonable timescales.
- To work with our neighbours to manage deer populations to sustainable levels appropriate to given habitats.
- To work with our neighbours on native woodland restoration and management at a landscape scale in the Arkaig catchment, in particular the removal of rhododendron and other INNS.
- To plan for the gradual removal of Larch as per the Larch Strategy and plan for the rapid removal of Larch in under SPHN with consideration given to the age and distribution of Larch on steep ground in Clunes Forest.
- Consider timber production options on non-PAWS forested land in Loch Arkaig Forest: upper sections of Culcharn, Allt Mhuic and Caig; and in Clunes Forest in the vicinity of Allt Glas Dhoire Mor and Kilfinnan.
- To review the long term felling and restocking within the forest to improve visual amenity, improving the fit into the landscape on Clunes face and improving environmental resilience throughout the LMP's native habitats which will include the use of protective buffers.

- To develop options for woodland creation in north Cia-Aig on bare ground identified as AWI and on upper forest margins of south Clunes where natural regeneration has been noted.
- To develop a long term plan to expand mountain woodland and montane scrub expansion in Clunes hill.

Stakeholders and Consultation

Scottish Forestry

NatureScot

SEPA

Scottish Water

Highland Council

Historic Environment Scotland

CONFOR

Lochaber District salmon Fisheries Board

Spean Bridge, Roy Bridge and Achnacarry Community Council

Knoydart DMG

Butterfly Conservation

Forest Research

Renewables

Scottish Canals

Neighbouring landowners:

- Achnacarry Community Forest
- Woodland Trust
- Achnacarry Estate
- Glen Dessary Estate

Neighbours (Achnacarry, Bunarkaig & Achnacarry Community)

Lochaber Fisheries Trust

Appendix I

Achieving National Priorities

FLS manage the national forests and as such is guided by Scotland's Forestry Strategy 2019 – 2029, as well as the FLS Corporate Plan which is informed by many other strategies for forest and land management. These include: economic, climate change adaptation and mitigation, deer, plant health, biodiversity, land use and the historic environment.

Scotland's Forestry Strategy 50 year vision:

"In 2070, Scotland will have more forests and woodlands, sustainably managed and better integrated with other land uses. These will provide a more resilient, adaptable resource, with greater natural capital value, that supports a strong economy, a thriving environment, and healthy and flourishing communities".

The Scottish Government has identified three objective that aim to deliver the 50 year vision:

- Increase the contribution of forests and woodlands to Scotland's sustainable and inclusive economic growth.
- Improve the resilience of Scotland's forests and woodlands and increase their contribution to a healthy and high quality environment.
- Increase the use of Scotland's forest and woodland resources to enable more people to improve their health, well-being and life chances.

This LMP aims to deliver these objectives in line with FLS corporate outcomes and the implementation of national and regional priorities.

A main guide for the brief is the National Spatial Overview (see Appendix 1 at the end of the brief for the relevant zones) for which its purpose serves to:

- Create a pen picture of the diversity of land managed by FLS.
- Maps where we can best deliver our corporate commitments.
- Outlines the current challenges required to be addressed to manage the land and forests sustainably.
- Mapped 18 zones with text describing the key geographic characteristics and the corporate and Scottish Government commitments that are most applicable to each zone.

The significant contributions to corporate priorities, aims and objectives for Loch Arkaig Forest are:

- **Ecosystem services and additional public benefits** – permanent native woodland and natural colonisation contributes to carbon sequestration, mitigation of downstream flood risk and habitat reserve; high recreation use of NFE contributes to increased health and well-being; scenic quality and visitor attractions contribute to tourism economy;

maintenance of high water quality of rivers and lochs and wider riparian habitats;
sustainable timber production

- **Other national commitments** – PAWS restoration; established partnerships with neighbours on new native woodland expansion and deer management; habitat management for chequered skipper butterfly.
- **Contribution to financial sustainability** – standard softwood markets; hydro schemes

The significant contributions to corporate priorities, aims and objectives for Clunes Forest are:

- **Ecosystem services and additional public benefits** – careful management of tree removal, establishment of slope stability woodland cover and reduced grazing contributes to slope stabilisation above the A82; permanent native woodland and natural colonisation contributes to carbon sequestration, habitat reserve, management of water run-off and slope stabilisation; recreation use of NFE contributes to increased health and well-being; scenic quality contributes to tourism economy; sustainable timber production
- **Other national commitments** – partnership working with neighbours – for example on the Great Glen Way and PAWS restoration – and Transport Scotland
- **Contribution to financial sustainability** – range of softwood, including saw logs, but relatively low timber income due to large diameter logs and high harvesting costs; hydro schemes.