Loch Arkaig Pine Forest
(Plan period - 2025 to 2030)



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# Introduction to the Woodland Trust Estate

The Woodland Trust owns and cares for well over 1,250 sites covering almost 30,000 hectares (ha) across the UK. This includes more than 4,000ha of ancient semi-natural woodland and almost 4,000ha of non-native plantations on ancient woodland sites and we have created over 5,000ha of new native woodland. We also manage other valuable habitats such as flower-rich grasslands, heaths, ponds/lakes and moorland.

Our Vision is:

"A UK rich in native woods and trees for people and wildlife."

To realise all the environmental, social and economic benefits woods and trees bring to society, we:

- Create Woodland championing the need to hugely increase the UK's native woodland and trees.
- **Protect Woodland** fighting to defend native woodland, especially irreplaceable ancient woodland and veteran trees; there should be no loss of ancient woodland
- **Restore Woodland** ensuring the sensitive restoration of all damaged ancient woodland and the re-creation of native woodled landscapes.

# Management of the Woodland Trust Estate

All our sites have a management plan which is freely accessible via our website

#### www.woodlandtrust.org.uk

Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council® (FSC®) under licence FSC-C009406 and through independent audit.

The following principles provide an overarching framework to guide the management of all our sites but we recognise that all woods are different and that their management also needs to reflect their local landscape, history and where appropriate support local projects and initiatives.

- 1. Our woods are managed to maintain their intrinsic key features of value and to reflect those of the surrounding landscape. We intervene in our woods when there is evidence that it is necessary to maintain or improve biodiversity, safety and to further the development of more resilient woods and landscapes.
- 2. We establish new native woodland for all the positive reasons set out in our Conservation Principles, preferably using natural regeneration but often by planting trees, particularly when there are opportunities for involving people.
- 3. We provide free public access to woods for quiet, informal recreation and our woods are managed to make them accessible, welcoming and safe. Where possible, we pro-actively engage with people to help them appreciate the value of woods and trees.
- 4. The long term vision for all our ancient woodland sites is to restore them to predominantly native species composition and seminatural structure, a vision that equally applies to our secondary woods.
- 5. Existing semi-natural open ground and freshwater habitats are restored and maintained wherever their management can be sustained and new open ground habitats created where appropriate.
- 6. The natural and cultural heritage value of sites is taken into account in our management and in particular, our ancient trees are retained for as long as possible.
- 7. Land and woods can generate income both from the sustainable harvesting of wood products and the delivery of other services. We therefore consider the appropriateness of opportunities to generate income from our Estate to help support our aims.
- 8. We work with neighbours, local people, organisations and other stakeholders in developing the management of our woods. We recognise the benefits of local community woodland ownership and management. Where appropriate we encourage our woods to be used for local woodland, conservation, education and access initiatives.
- 9. We use and offer the Estate where appropriate, for the purpose of demonstration, evidence gathering and research associated with the conservation, recreational and sustainable management of woodlands. We maintain a network of sites for long-term monitoring and trials leading to reductions in plastics and pesticides.
- 10. Any activities we undertake are in line with our wider Conservation Principles, conform to sustainable forest management practices, are appropriate for the site and balanced with our primary objectives of enhancing the biodiversity and recreational value of our woods and the wider landscapes.

# The Public Management Plan

This public management plan describes the site and sets out the long term aims for our management and lists the Key Features which drive our management actions. The Key Features are specific to this site – their significance is outlined together with our long, 50 years and beyond, and our short, the next 5 years, term objectives for the management and enhancement of these features. The short term objectives are complemented by an outline Work Programme for the period of this management plan aimed at delivering our management aims.

Detailed compartment descriptions are listed in the appendices which include any major management constraints and designations. Any legally confidential or sensitive species information about this site is not included in this version of the plan.

There is a formal review of this plan every 5 years and we continually monitor our sites to assess the success of our management, therefore this printed version may quickly become out of date, particularly in relation to the planned work programme.

Please either consult The Woodland Trust website

www.woodlandtrust.org.uk

or contact the Woodland Trust

operations@woodlandtrust.org.uk

to confirm details of the current management programme.

A short glossary of technical terms can be found at the end of the plan.

# Location and Access

Location maps and directions for how to find and access our woods, including this site, can be found by using the following link to the Woodland Trust web-site which contains information on accessible woodlands across the UK

https://www.woodlandtrust.org.uk/visiting-woods/find-woods/

In Scotland access to our sites is in accordance with the Land Reform Act (of Scotland) 2003 and the Scottish Outdoor Access Code.

In England, Wales and NI, with the exception of designated Public Rights of Ways, all routes across our sites are permissive in nature and where we have specific access provision for horse riders and/or cyclists this will be noted in the management plan.

# The Management Plan

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**GLOSSARY** 

# 1. SITE DETAILS

# **Loch Arkaig Pine Forest**

Spean Bridge Grid reference: NN147877 OS 1:50,000 Sheet No. N/A

Area: 1027.31 hectares (2538.54 acres)

External Designations: Ancient Semi Natural Woodland, Planted Ancient Woodland Site

Internal Designations: Demonstration Site - Gold

# 2. SITE DESCRIPTION

The Loch Arkaig Pine Forest consist of two separate woodland areas known as Glen Mallie & the Gusach, extending to over 1000 ha, which lie on the South side of Loch Arkaig to the west of the small communities of Achnacarry, Bunarkaig and Clunes in Lochaber. They are part of a larger area of remnant Caledonian Pinewood Inventory woodlands centred on Glen Arkaig, covering a total of approximately 4900Ha (including the buffer zone). Loch Arkaig Pine Forest is central to the collaborative vision to recover and reconnect these fragmented ancient woodlands through Glen Arkaig with the Beò Airceig - Living Arkaig - partnership between their owners; Woodland Trust, Arkaig Community Forest, Achnacarry Estate and Forestry and Land Scotland. The woodlands consist of remnant stands of Caledonian Pine, upland birch woodland, upland oak woodland, wet woodland and significant areas of PAWS.

The Loch Arkaig Pine Forest was acquired in partnership with Arkaig Community Forest SCIO (ACF) who have ownership of two specific areas of woodland - totalling around 53 hectares. The ACF ground comprises a lovely area of restored native pinewood at the western end of the Glen Mallie forest block, as well as an area of partially-restored pine and birch woodland around a long-abandoned settlement known as Ard Nois in the Gusach. Both ACF areas are contiguous to Woodland Trust ownership. There is close collaboration over the management of the whole site between the two organisations, which is underpinned by a Memorandum of Understanding and overseen by an Advisory Board.

The Loch Arkaig Pinewood site is one of 35 native pinewood sites first identified by Steven and Carlisle in their book The Native Pinewoods of Scotland (1959) which described in great detail the history, vegetation, silviculture and ecology of the most genuinely native and semi-natural pinewood sites in Scotland. Further work by Tuely (1995) identified 84 Caledonian Pinewood Inventory (CPI) sited in Scotland – subdividing some of the larger sites, such as Loch Arkaig into multiple sites/stands – and covering 18000 Ha in total. There are a total of eight mapped units linked by the CPI buffer zone covering the entire south side of Loch Arkaig, stretching to Loch Lochy at Bunarkaig, the upper reaches of Glen Mallie, including Puiteachean pinewood (SSSI) in neighbouring Glen Loy as well as Allt Dubh on the North shore of Loch Arkaig and the dark mile.

Loch Arkaig lay at the heart of the 1745 Jacobite rebellion and Bonnie Prince Charlie is thought to have hidden in the forest after defeat at the Battle of Culloden. In 1746 gold sent from Spain to support the rebellion was said to have been hidden in the forest and, still undiscovered, has become known as the treasure of Loch Arkaig or the Jacobite gold.

Between 1942-1946, due to its isolation, the forest, along with Achnacarry Castle, (the ancestral home of the chiefs of Clan Cameron), was used as the training ground for Churchill's Allied commando units in World War II, recognized by the nearby Commando memorial. The Clan Cameron Museum near Achnacarry House is a place of pilgrimage for Clan Cameron members around the world, and traces the Clan's history for 27 generations, back to the 14th Century. The current Chief of Clan Cameron continues to live at Achnacarry Castle.

The ancient pine woods of the Scottish west coast, such as those found at Loch Arkaig, are part of the vast boreal forests which encircle the northern hemisphere and, due to their very high rainfall, are part of what's known as temperate rainforest.

The forest is home to a large number of iconic veteran Scots pine trees as well as some of Scotland's most high

profile species, including nesting sea eagles, ospreys, otters, pine martens, red squirrels, red deer and black grouse. Pinewood plant life is often dominated by acid tolerant plants like bell heather, blaeberry and cowberry, amongst which grow more delicate flowers such as coralroot orchid.

Anthropogenic impacts on this ancient landscape have been significant. A fire started in the glen by commando training operations during World War II, severely damaged large swathes of forest, leaving behind hundreds of charred pine skeletons that still dominate the landscape. The historic exploitation of timber, planting of non-native trees, and overgrazing by deer and sheep, have all left Loch Arkaig pine forest degraded and the remaining fragments in decline.

The main population centre of Fort William – 'the outdoor capital of the UK' is situated 15 miles to the south at the end of the Caledonian Canal. It is a major destination for tourists as well as the area's major employer with an Aluminium smelter and BSW's sawmill. There is a small Forestry and Land Scotland car park at Cia-Aig falls which facilitates visitor access to the site. There are currently no formal paths within the forest other than a forest track which runs from the White Bridge into Glen Mallie.

# 3. LONG TERM POLICY

Loch Arkaig Pinewoods will be fully restored native Caledonian Pine woodland standing as a beacon of good practice in nature conservation, and bringing social and economic benefits to the local community.

Towards that vision, management interventions will create the conditions where natural ecological processes can return – lessening the need over time for further management interventions. Removal of non-native conifer plantation and invasive plants in conjunction with management of the deer population to a natural level will allow the recovery of natural habitats.

Ultimately we would like to see a thriving mosaic of diverse woodland ages and stages naturally regenerating alongside peatland and partially wooded habitats. These would support a wide range of appropriate native flora and fauna.

The restoration of Loch Arkaig Pine Forest to a resilient, dynamic mosaic of habitats would be a catalyst for landscape restoration across neighbouring land, and across the highlands.

Our partners Arkaig Community Forest will act as an integral part of the forest's management. Local people and others of all ages will be engaging with the forest in meaningful way as volunteers, using it as an educational resource and for informal recreation. There will be a network of low impact path routes that will make the forest more accessible. However, it is not anticipated that there will be large numbers of visitors. The forest will be well known and valued by many people across the UK who will not necessarily visit in person.

# 4. KEY FEATURES

#### 4.1 F1 Planted Ancient Woodland Site

#### Description

The PAWS survey carried out by Upland Ecology in 2015 used a range of references including the Ancient Woodland Inventory, 1st Edition 1860 OS, Roy Maps and the Native Woodland Survey of Scotland to identify nearly 700 Hectares of PAWS woodland made up of 395 Ha of PAWS and 297 Ha of restored PAWS.

Following the devastating fire in 1942 the two forest areas were purchased by the Forestry Commission in 1966 and afforested with Sitka spruce, lodgepole pine and small areas of larch. The two areas were deer fenced and shallow ploughed where access permitted, remnant stands of Scots pine along with small groups and individual veteran trees were retained throughout these areas.

Influenced by the work of Steven and Carlisle (1959) the Forestry Commission policies on Caledonian Pinewoods changed dramatically in the decades following the acquisition from one of afforestation with non-natives to restoration and in 1997 a major restoration programme was undertaken. This involved fell to waste of the young conifer crops; the forester who planned and carried out this work still lives in Clunes and was consulted about the rationale for which areas were felled and which left. The objective was to restore the areas with the best remnant features and focus on areas with good populations of native trees present. The restoration was concentrated in areas where the non-native trees were growing less well. Areas where trees had potential to produce timber were left to grow on.

In Glen Mallie this policy resulted in a patchwork effect of large contiguous areas being felled, smaller groups of native trees opened up and individual veteran trees being halo thinned in plantations. Shortly after the fell to waste was carried out the woodlands were fenced and deer management undertaken. This work resulted in a massive pulse of predominantly birch regeneration which is now around 25 years old. This is complemented by smaller amounts of pine regeneration along with some pine regeneration which originates from the initial fencing of the site and contemporaneous deer control.

In much of the PAWS areas where plantation was removed in the 1990's, it is difficult to find evidence of the original planting, and often only after some close inspection is it possible to find signs of ploughing or debris from the fell to waste. The overall impression is very pleasing with different age ranges present across large areas, although birch dominates due to it's unpalatability to deer which were at too high a population density over much of the site for the more palatable tree species to establish in the early 2000's. One aspect of the restoration work that was less successful was halo thinning of veteran Scots pine, many of these have suffered in recent years largely in competition from light as the surrounding plantation trees have grown very tall around them. There has been a programme removing regenerated non-native trees throughout the site since acquisition in 2016 with the final areas to be treated being adjacent to the last plantation areas planned for removal in 2025/26.

In Glenmallie, the plantation consisted of mainly well grown Sitka spruce on the lower slopes with substantial areas of

low yield lodgepole pine at higher elevations and more peat dominated soils. Plantation removal was undertaken between 2020 and 2024 in all Glenmallie compartments, now finished in all but compartment 4 which is due for completion by spring 2026. The approach ensured most brash and some timber was used in the main brash mat which avoided the need for internal forest roads.

In the Gusach there has been less regeneration of birch and some evidence that deer browsing impacts were higher in the post 1990's period, along with fewer examples of halo thinning. However some very attractive woodland has resulted from the restoration work, with irregularly spaced mature and pole stage Scots pine and occasional veteran Scots pine and large standing deadwood scattered throughout.

The previously unrestored PAWS areas in the Gusach were very different consisting mainly of lodgepole pine. There was very little Sitka spruce and some areas of larch. The lower timber value and access restrictions in the Gusach were overcome by use of freshwater timber barging which began in 2022. The plantation removal is due for completion in spring 2026.

# Significance

Loch Arkaig Pine Forest forms part of a group of Caledonian Pinewood Inventory sites on the South side of Loch Arkaig and are of particular significance because they are an example of pinewood western temperate rainforest. Glen Mallie in particular has a high level of deadwood largely as a result of the fire in 1942, which may prove to be significant for specialist invertebrates and lichens.

Restoration of PAWS represents the only opportunity to increase the area of ancient woodland with semi-natural characteristics.

A healthy restored PAWS resource at Loch Arkaig will connect the fragments of ancient woodland components, and ensure the whole site operates as a functional ecosystem.

The Woodland Trust is committed to restoring all non-native PAWS type woodland in its ownership and to ensure the continuing survival and where possible enhancement of the ancient woodland components.

### **Opportunities & Constraints**

#### Opportunities:

The areas of PAWS restored in the 1990's demonstrate the opportunity to continue the process in the remaining plantation areas. The 'ideal' conditions will support the fullest range of pinewood specialist flora and fauna is a diverse structure, density and age range, including open areas. This will require the deer browsing impacts to be reduced relative to the last natural regeneration phase in the early 2000's which resulted in predominantly unpalatable birch establishment.

Where they are unlikely to colonize the site without intervention, translocations will be made of key site-native species that have been lost or constrained in location due to past management. Wood ants are a key species due to their influence on seed dispersal and invertebrate assemblages, particularly those that affect Scots pine trees. Small cowwheat is a species associated with ants that is constrained to a single nearby location and at risk of local extinction. Having partnered with Royal Botanic Gardens Edinburgh for the small cow-wheat translocations, Loch Arkaig Pine Forest will be used as part of their Scottish Plant Recovery Project for other species that are locally extinct.

There is an opportunity for the larch to be retained during the initial large scale plantation removal phase, for removed gradually through low impact and continuous cover forestry approaches. Opportunities to retain some of the Larch will be taken for several reasons: firstly, unlike the Sitka spruce and Lodgepole pine; larch seldom regenerates in this environment so this species can be retained without threatening non-native regeneration on adjacent felled ground awaiting establishment of native woodland; secondly larch is deciduous and has allowed a more significant set of ancient woodland features to persist under it's canopy; thirdly, opening up the canopy by felling adjacent Sitka spruce and Lodgepole pine will result in ongoing windblow of the larch; fourthly, this will result in gradual change in light and humidity regimes to allow ancient woodland features such as specialist lichen and bryophyte species persist more effectively and indeed migrate from these 'Arks' to adjacent felled areas as the new young native woodland establishes in these adjacent areas; fifthly, opportunities for new deadwood will be very limited for the next few decades and gradually blowing larch will provided a diversity of deadwood habitats; sixthly to retain a canopy over ancient woodland features where in small sheltered areas with the potential to retain future timber resource for a small scale mobile mill operation, and seventhly to precipitate wind throw to provide opportunities for native trees in particular Scots Pine to regenerate on upturned stumps, a common occurrence in Western pinewoods. Important remnants of ancient woodland that could be damaged by future larch windblow, such as veteran trees, will be halo-thinned to safeguard them. Phytophthora remains a risk if it is found in the larch.

The site provides an opportunity to demonstrate the benefits of restoration to other landowners, partnership working with the local community & collaboration with a traditional estate. Restoration benefits underpinned by research and monitoring of a range of habitats demonstrating change over time can also be demonstrated by setting up long term surveys to monitor changes.

#### Constraints:

The major constraint on the management of these woodlands has until very recently been the limited access to each of the sites. Glen Mallie was until 2021 serviced by a 4x4 track which is accessed via the White bridge which had a weight limit of 7.5 tonnes. The route has now been upgraded to allow timber haulage with works including several new bridges.

There is no vehicle access to the Gusach which is only accessible via boat. This restricted access presents a serious constraint on the management of the woodlands. Slipways were constructed in 2023 to allow removal of non-native trees by barge.

There are also access issues on the site itself with steep slopes and fragile soils alongside which, the previous restoration work has left areas of PAWS isolated which have required very careful planning of harvesting operations. Access for deer extraction and other operations will remain limited with little incentive for economic or nature protection reasons to install tracks. This is an opportunity for leaving a proportion of deer carcasses in the environment to support predators such as golden eagles and wider nutrient cycling.

Deer pressure has been high across the site for a protracted period as indicated by herbivore impact assessments carried out annually from 2017, and browsing will remain a major constraint on successful tree regeneration as well as the development of ground flora.

A programme of fence repairs and replacement has carried out annually since 2018 in Glen Mallie and 2020 in the

Gusach. The programme will need to be continued long term. The resident population will also need to be managed long term, with culling levels to be determined by continued monitoring of impacts and thermal imaging by drone.

Controlling deer numbers to a level where natural regeneration of native trees is successful will also result in significant quantities of non-native regeneration which will need to be managed until there is no longer a seed source.

The remaining plantation is at, or past, normal age for felling and extraction, normal works having been limited by lack of access. The size of the crop in combination to exposed slopes on shallow soils is resulting in increasing windblow of the plantation trees. Plantation removal is now limited to large clearfells back to stable plantation edges against open ground rather than removing shelter from adjacent plantation and risking widespread catastrophic windblow. A more gradual approach to plantation removal such as thinning would result in a level of windblow damaging to ancient woodland features.

The Long Term Forest Plan constitutes statutory approval for removing all plantation area over the next 2 years with felling and extraction in both forest blocks each year. The average timber volume to be extracted in each operation is in the region of 10,000T which represents an achievable amount to fell and extract in a season using conventional forestry machinery with protocols for working on steep slopes, sensitive soils and ecologically sensitive areas.

Ecologically important bird species sensitive to disturbance nest in the forest, and indeed the Woodland Trust approach is to avoid tree felling during the bird nesting season where possible. In specific instances, tree felling in the bird breeding season will be required to avoid significant risk to soils and water pollution, by working some of the wettest areas during the dryer Summer season. Detailed assessment and procedures will be in place for these occasions supported by specific Environmental assessments to ensure breeding birds are protected.

The predominance of lodgeple pine in the forest is a continuing threat to the Scots pine as Lodgepole pine hosts dothistroma, which infects Scots pine. Best practice requires all Lodgepole pine to be removed as a priority from within the pinewood. The felling and extraction of the Gusach, being predominantly lodgepole, has been expediated to account for the delay with felling to 2023 during the development of the barging programme, to complete in 2027.

Sitka spruce and Lodgepole pine regenerate prolifically on recently felled areas in this environment. Site based evidence indicates that a gradual conversion of plantation on ancient woodland sites here would result in further extensive and dense non-native regeneration on felled areas due to a retained mature seed source adjacent and the clear success of the resulting natural regeneration. Removing ongoing non-native tree regeneration would not only be costly but reduce the success of native tree regeneration and survival of native ground flora through aggressive competition and dense shading. The most effective management method is therefore deemed to be the removal the entirety of the invasive non-native mature plantation expeditiously.

In Glenmallie, felling and extraction commenced in the winter of 2021/22. The felling areas in Glenmallie for 2022 and 2023 were felled and extracted together over winter 2022/23. This allowed a single access point to be used for both coupes and saved the need to construct a second timber harvesting facility and stone forwarder track as proposed in the Long Term Forest Plan, reducing impacts to PAWS.

Other non-native invasive species present a threat to the forest. Rhododendron is present within the woodland areas with a particular concentration at the eastern end of Glen Mallie. Lever & mulch work carried out annually since 2018 has made a significant impression on this with more minor follow-up work to be carried out in the next 10 years with a

view to eradicating the species from the site.

Gaultheria shallon is present as a dense thicket in the Clan Cameron graveyard at the entrance to the site and a few small clumps have been removed in Glen Mallie during 2021. Vigilance will be required to ensure this species is not allowed to spread uncontrolled and continued partnership working with Achnacarry Estate to support their eradication efforts.

Japanese knotweed is present in small quantities on the neighbouring estate land near the entrance to the forest on the shore of the loch, some control has been carried out in recent years and it will be monitored to ensure there is no risk of it spreading on to WT/ACF areas with ongoing development of the partnership working with neighbours no collaborative landscape scale invasive non-native species management.

Beech is also freely regenerating from the veteran trees planted at the eastern end of the Glen Mallie track, the veterans themselves are providing interesting lichen hosts as well as rot holes for decay fungi and invertebrates so these will be retained but the regeneration will be removed gradually as it reaches pole stage as firewood or sooner where this is threatening remnant ancient woodland features.

Similarly pests and diseases are a risk. Currently Dothistroma needle blight (DNB) has been detected at low levels in Lodgepole pine in the Gusach, there is potential for this to infect the native Scots pine but current advice is that this risk is minimal. There is potential for this to increase and for new plant health issues to arise. Phytophthora in the retained larch is a risk and, if infected, larch stands would require a combination of felling to recycle, felling and low-impact extraction, and ring-barking. These interventions would still result in most of the objectives for retaining larch to have been met.

The current policy is reverting to site native species largely through natural regeneration, which is also current advise for climate change mitigation in native woodlands.

Landscape impacts of the restoration are significant, particularly the timber extraction from The Gusach block, but significant public consultation has taken place and there is understanding and support for the longer term benefits that will accrue.

The presence of wild boar on the site can be seen as both an opportunity and a constraint. The disturbance of the soil will aid tree regeneration, but will it also have negative impacts. There is a need to develop monitoring protocols to monitor these impacts. Wild boar push under fences which can allow ingress of deer if gaps are left unmanaged.

Careful felling and extraction of the timber will be required around the numerous veteran Scots Pine and standing deadwood present in the non-native plantations.

#### **Factors Causing Change**

Natural Succession, grazing & browsing by deer, boar disturbance, invasive non-native tree species, wind damage.

#### Long term Objective (50 years+)

Ancient Woodland components in PAWS areas will be secure within a woodland habitat which will develop strong semi natural characteristics, including a predominance of native tree species, a varied structure, a diverse ground flora, frequent standing and fallen deadwood and the absence of any significant threats from invasive species.

The removal of all of the mature non-native trees and control of non-native tree regeneration within within the site in the next 10 years combined with a reduction in herbivore impacts will allow the native woodland to expand internally and result in a 'pulse' of predominantly native species which will compliment the existing age and species diversity on the site.

# Short term management Objectives for the plan period (5 years)

- 1. Removal of all Lodgepole pine and Sitka spruce plantation will be completed by end of 2025/26.
- 2. Maintain strategic deer fence through a programme of monitoring and repairs including boar gates and deer jumps.
- 3. Main brash extraction routes will be mulched to provide temporary ATV access for deer extraction in the key woodland establishment phase following plantation removal. Condition monitoring will be required with plan development for longer term access requirements, if needed, by end of plan period.
- 4. Fell to recycle will be completed by the end of 2025/26 throughout both forests of non-native conifers that regenerated prior to acquisition.
- 5. Removal of non-native conifers that regenerate post clearfell, will be completed within 3 years post felling with a second pass 6 years post felling. Works will be undertaken with volunteers, supported by additional contractor resource where necessary.
- 6. Following completion of rhododendron ponticum removal through lever and mulch (mostly in cpt 1a) in 2021, follow up treatment of regeneration will be achieved with an annual volunteer programme.
- 7. Annual herbivore impact surveys and thermal imaging drone surveys with additional regeneration density survey at 2-3 year intervals will be carried out in both forest blocks to provide evidence to support deer cull levels to achieve appropriate levels of natural regeneration and woodland flora recovery.
- 8. Monitoring protocol based on Wild Trees Survey with additional metrics to be developed in collaboration with Trees for Life by end of 26/27, as agreed in collaborative review with Arkaig Community Forest and Advisory Board members.
- 9. Identify in collaboration with partners by end of 26/27, a series of measures of success/ thresholds for conservation objectives in the Glen Arkaig landscape with associated collaborative monitoring programme based on data already being collected in the landscape (such as ancient woodland ground flora, natural regeneration, freshwater invertebrates, keystone species etc) based on the baseline habitats and species survey data being collected at the moment.
- 10. Establishment of young native trees on felled areas will be achieved predominantly by natural regeneration with an expectation that initially this will consist of birch as the most common species with variable densities ranging from 5000 stems per ha on lower slopes to 900 stems per ha in areas further from a viable seed source. Direct seeding will be used where seed sources are insufficient in total or particular species. Establishment will be achieved within 5 years of plantation removal, as per Long Term Forest Plan prescriptions.
- 11. Surface with crushed rock imported by barge, slipway 4 in The Gusach during 25/26 ahead of plantation removal

using this access point.

12. Monitor temporary slipways 1, 2 and 3 to assess the rate of natural reclamation and inform whether further remediation is required in the next plan period following that action of natural processes in the current plan period.

## 4.2 F2 Community Woodland Group

#### Description

Loch Arkaig Pine Forest was acquired in partnership with community group and charitable organisation Arkaig Community Forest (ACF). The aims and objectives of both the Woodland Trust and Arkaig Community Forest match very closely and a memorandum of understanding which outlines the basis of the partnership between the two organisations has been agreed.

The MOU includes the following key statements:

The Community Group and the Trust will work together to restore native woodland habitats and to secure multiple benefits in terms of sustainable rural development from the site.

Both parties are agreed that the Forest shall be restored to native woodland, native Caledonian pinewood and associated habitats, in accordance with the Trust's Woodland Management Approach and Ancient Woodland Restoration Guide.

Both parties are committed to creating tangible community benefit and developing social enterprise within appropriate parts of the Forest, and will ensure that this is allowed to develop as deemed appropriate by both parties under the management planning process and structure.

This close collaboration with a community group is a unique situation for the Woodland Trust and there is a determination to see it succeed. It has attracted a lot of attention from community organisations such as the Community Woodland Association (CWA) who actively support the project.

Research is being carried out by the University of the Highlands & Islands to capture the socio-economic benefits the project may deliver over the next 20 years, with baseline surveys having being carried out in 2018.

Further to the above, ACF and WTS are collecting a focused dataset to define socio-economic benefits gained as a direct result of the restoration project at Loch Arkaig Pune Forest.

Arkaig Community Forest directly own around 50 ha of forest including an area of restored PAWS in Glen Mallie and in the Gusach, an area surrounding the old settlement of Ard Nois. The two groups communicate formally via regular ACF board meetings, monthly ACF / WTS collaboration days and through an Advisory Board.

#### **Significance**

This unique collaboration between an NGO and Community group is very significant in terms of demonstrating a different approach to delivering environmental benefits whilst working with and supporting the aspirations of local people.

### **Opportunities & Constraints**

# Opportunities:

Loch Arkaig Pine Forest offers an interesting opportunity to demonstrate both the environmental and socio-economic benefits of a forest restoration project. By working with ACF to develop a community managed tree nursery, community deer larder and venison processing unit, and community owned mobile welfare unit, the community are geuinintly invested in the forest restoration and 4 part time jobs have been created within the community. Through including community benefits in tender scoring, local contractors deliver much of the work and the hope is that this inward investment will positively impact the local economy and support the viability of remote rural communities. The primary driver under pinning any such works will however be the restoration of native pine woodland and the resultant conservation benefits/values.

There are opportunities to develop further innovative ways for local people to benefit from various aspects of the forest from initiatives such as wood lots, access to firewood, venison, Non Timber Forest Products as well as health and wellbeing benefits associated with spending time outdoors.

#### Constraints:

There are many challenges of partnership working and working with local communities. We appreciate there is an imbalance in scale and resources available to each of the organisations; a large NGO with a sizable project team and administration to support is not comparable with a small group of local volunteers working in their own time with very limited resources.

The Woodland Trust has a very clear set of aims and objectives and systems to ensure these are delivered and measured. The Woodland Trust recognises the need to work closely with the ACF and at timescales and timetables that match with the MOU and partnership working approach.

Access issues associated with steep ground, a limited number of tracks and the perimeter fence are also physical barriers to developing some types of community based initiatives in the forest

## **Factors Causing Change**

The delivery of large scale restoration involved major infrastructure work between 2019 - 2023 and significant timber harvesting from 2021 onwards, with associated timber haulage on local roads. Maintaining a strong partnership communication will be key to working collaboratively in delivering a large programme successfully, to achieve shared objectives.

#### Long term Objective (50 years+)

To sustain a strong and stable partnership approach to the management of the Loch Arkaig Pine Forest that delivers the environmental and sustainable development aspirations of both partners.

### Short term management Objectives for the plan period (5 years)

- 1. To develop an agreement for suitable areas of the forest to be used by community members for wood lots to build on the trials undertaken from 2020.
- 2. To include community engagement workshops as part of the survey and monitoring programme.
- 3. With Arkaig Forestry Cooperative no longer active, work in partnership with ACF to develop alternate mechanisms to delivering local employment and other benefits, including greater partnership working and applying a localness scoring in WTS tenders.
- 4. Ensure regular collaboration and dialogue with ACF through attendance at ACF / WTS monthly collaboration days, ACF Board Meetings and Loch Arkaig Pine Forest Advisory Board Meetings.
- 5. Continue to integrate programmes between the two organisations including plant supply from the ACF nursery for the wider Beò Airceig landscape scale partnership planting requirements, community deer management capacity and venison production from the ACF deer larder, and hire by WT of the ACF owned mobile welfare unit.

#### 4.3 F3 Ancient Semi Natural Woodland

#### Description

The Ancient Woodland Inventory identifies significant areas of ASNW within the Loch Arkaig Pinewoods.

There is map based evidence from the 1654 Blaeu Atlas, Roy c1750 the OS 1st Edition c1860 and the Annexation survey carried out by William Morison in 1772.

The last of these describes Glen Mallie having "A thick cover of Birch intermixed with Hazel, Alder and Fir" the western area is described as having "A thick cover of Stately Firs intermixed with Birch at the east end" – fir being old Scots for pine.

The PAWS survey carried out by upland Ecology in 2015 identified only 41 ha of the site as Ancient Semi-natural Woodland with an additional 297 Ha of restored PAWS.

The majority of the ASNW areas are found in Glen Mallie on the lower slopes of compartments 1c, 2c & 3d with the dominant woodland type being upland birch woodland comprising NVC classification W4, W11 & W17 woodland. These consist mainly of pole stage downy birch which probably coincided with the fencing of the site in the early 1970's, along with oak, ash, hazel, rowan, alder, wych elm, bird cherry, hawthorn, holly, Scots pine, eared and grey willow.

There are scattered veteran holly, oak and birch present throughout and a number of mature beech trees near the track with a range of regenerated beech at the Eastern end of Cpt 1c.

Within Cpt 2c there is a small (1.8 Ha) stand of mature and veteran Scots pine, situated on a prominent knoll which seems to escaped the worst effects of the 1942 fire and earlier felling. The vegetation is typical of W18 and is

dominated by rank heather, there is limited regeneration of birch and Sitka present along with Scot's pine regeneration in adjacent open land.

In the Gusach the PAWS survey identifies two small adjacent areas in cmpt7 j&k comprising a mixture of open habitats and wet woodland W4/W7 on the edge of Loch Arkaig consisting predominantly of riparian alder woodland.

As well as the ASNW areas described above there are significant ancient woodland features and remnants across the majority of the site such as mature and veteran trees which have been included in the PAWS section, particularly within restored PAWS areas.

### Significance

Loch Arkaig Pine Forest forms part of a group of Caledonian Pinewood Inventory (CPI) sites on the South side of Loch Arkaig and are of particular significance because not only are they are an example of pinewood western temperate rainforest, collectively they also represent one of the largest contiguous areas of Caledonian pinewood remnants in the southwest regions, which is the most critically threatened of the seven pinewood regions identified in the CPI.

Glen Mallie in particular has a high level of deadwood largely as a result of the fire in 1942, which may prove to be significant for specialist invertebrates and lichens.

The relatively small areas of ASNW combined with the large amount of ASNW features present on the site as a whole, means there are robust areas of native woodland habitat and high potential for future continuity of habitats on this site.

Management and maintenance of the ASNW component of the site contributes to meeting the Woodland Trust objective of "No further loss of ancient woodland".

#### **Opportunities & Constraints**

Despite the existing ASNW fragments despite being dominated by pole stage birch they have a wide range of mature tree species present providing seed sources for regeneration.

The main constraint has until now been the high level of browsing pressure affecting recruitment of seedling regeneration. The presence of adjacent stands of non-native trees have also presented a threat of non-native regeneration within the ASNW.

#### **Factors Causing Change**

Natural Succession, grazing & browsing by deer, boar disturbance, invasive tree species, wind damage, climate change and tree disease.

# Long term Objective (50 years+)

The total area of ancient woodland will not diminish. The processes of natural selection will remain dynamic within the woodland, resulting in evolving structures and densities of cover.

A permanently irregular age structure will develop within the woodland creating opportunities for the recruitment of future veteran trees, and the on-going retention of associated ancient woodland species and assemblages.

Frequent standing and fallen dead and decaying wood is present and will continue to be recruited on the site, such that the amount of dead and decaying wood continues to increase.

There will be no significant threats from invasive non-native species.

While it is envisaged that natural processes will ensure the delivery of the above where necessary management interventions such as removal of non-natives and continuing deer control will take place.

#### Short term management Objectives for the plan period (5 years)

- 1. Removal of all Lodgepole pine and Sitka spruce plantation will be completed by end of 2025/26.
- 2. Maintain strategic deer fence through a programme of monitoring and repairs including boar gates and deer jumps.
- 3. Main brash extraction routes will be mulched to provide temporary ATV access for deer extraction in the key woodland establishment phase following plantation removal. Condition monitoring will be required with plan development for longer term access requirements, if needed, by end of plan period.
- 4. Fell to recycle will be completed by the end of 2025/26 throughout both forests of non-native conifers that regenerated prior to acquisition.
- 5. Removal of non-native conifers that regenerate post clearfell, will be completed within 3 years post felling with a second pass 6 years post felling. Works will be undertaken with volunteers, supported by additional contractor resource where necessary.
- 6. Following completion of rhododendron ponitcum removal through lever and mulch (mostly in cpt 1a) in 2021, follow up treatment of regeneration will be achieved with an annual volunteer programme.
- 7. Monitoring protocol developed as a PAWS objective to also be utilised in ASNW.

# 4.4 F4 Connecting People with woods & trees

# Description

The site currently has little in the way of visitor facilities or infrastructure. The closest car park to the site is approx. 900m from the Glen Mallie entrance at the Chia-aig waterfall. An interactive art trail was installed during the previous plan period, with an aim being to draw existing visitors further into the forest to experience some of the better examples of restored Caledonian pine forest that exists further to the west of the property. A short section of informal access to the proposed roundhouse site was upgraded to a pitched stone path, which provides visitor with a short additional loop and scenic viewpoint down the Loch.

The car park is owned and managed by Forestry and Land Scotland and has space for approx. 12 vehicles. The site has a

single ladderboard welcoming visitors to the forest. Small numbers of bikers and walkers use the unsurfaced track to the bothy at Inver Mallie.

The hamlets of Achnacarry, Bunarkaig and Clunes are all close by and include around 40 residents. The nearest town is Fort William, a 40 minute drive. It markets itself as the 'Outdoor Capital of the UK' and has a population of around 10,000 people - though this increases significantly with tourist traffic over summer. The 79 mile long Great Glen Way, one of Scotland's Great Trails, passes through the hamlet of Clunes, approx. 2 miles east of the forest entrance. It is estimated 2000 people complete the walk each year.

Whilst there is much spectacular scenery and iconic wildlife to appreciate at Arkaig, the remote nature of the site and a lack of infrastructure mean it is inappropriate to develop as a large scale visitor destination. Instead the Woodland Trust is focussing on using digital technology to engage members and supporters with the site and our restoration work. In 2017 we installed a camera on the nest of a breeding osprey pair at Arkaig and relayed the live coverage to the Trust website 24 hours a day. This rare insight into the private lives of a raptor pair proved to be a hit and we aim to continue bringing Arkaig wildlife into the homes of supporters across the UK using innovative digital technology.

Events at Loch Arkaig have so far been focussed on getting to know the local community and introducing the site to project stakeholders and funders. Pivotal to our work at Arkaig is the support of community group and project partner Arkaig Community Forest (ACF). ACF kindly share their use of a local forest school hut for private meetings and gatherings.

Neighbouring Achnacarry Estate shares the access road to the Glen Mallie end of the forest. Their business interest Achnacarry Sporting, regularly transports paying guests to the hill behind the pine forest for stalking and tours.

The nearest primary school is in Spean Bridge, approx. 10 miles away. The nearest secondary school is Lochaber High. Spean Bridge and Roy Bridge primary schools have previously been involved in funded outdoor learning projects at the Forest School in Clunes.

The nearest Trust owned woodland to Loch Arkaig is Balmacaan Wood on the shore of Loch Ness.

#### Significance

Loch Arkaig Pine Forest is one of Scotland's few remaining ancient Caledonian pinewood remnants. It is of high conservation value and it offers significant opportunity not only to restore a large area of ancient woodland but also to demonstrate restoration practice to landowners across Lochaber and beyond.

The forest is home to a large number of ionic veteran Scots pine trees as well as some of Scotland's most iconic wildlife including ospreys, sea eagles, red squirrels and pine martens. In addition, ecological surveys have shown a diverse range of rare invertebrates are also present across the site, as well as a wide range of rare and specialist species of plants, fungi, bryophytes and lichens.

The Loch Arkaig area is steeped in history: a consignment of Jacobite gold is said to be buried on the loch shore; generations of Clan Cameron have lived in the area since the 14th century; the loch is rumoured to have its very own water horse or kelpie and it features in the memorable opening scene of Harry Potter and the Deathly Hallows Part 2.

The forest was the training ground for the country's first commandos from 1942 to 1945. A serious fire started by a commando training operation in 1942 destroyed many of the pine trees over an area of around 3000 acres and the silver silhouettes of standing dead trees are a visible reminder of man's impact on the landscape today.

#### **Opportunities & Constraints**

To develop access facilities in line with harvesting plans and community demand in Glenmallie, the more accessible forest. To avoid construction of infrastructure in The Gusach. Due to previous community consultation providing a strong view on the imporatnce of maintaining the wild nature of the forest. And because increased access here would create a high risk of human disturbance of sensitive wildlife that includes nesting Sea eagles, golden eagles and ospreys.

By the end of March 2026, the programme of harvesting across the site will be complete, allowing greater opportunity for public involvement and recreational access.

ATV tracks will be not be constructed due to the damage to ancient woodland and peatland through construction. However, the brash mats created as a necessary element of the plantation removal works prevent an opportunity. These can be mulched to create temporary ATV access tracks that could also provide informal access to new areas of the forest for more adventurous visitors.

Long term, a way marked trail could be installed in the Glen Mallie block within walking distance of the Achnacarry Museum. This would ideally lead to a viewpoint highlighting the extent of the forest and the stunning lochside scenery. There is an opportunity to use the route main brash extraction route as a longer-term way marked trail in Glenmallie to link to the existing track network. Futhermore, collaboration with ACF and Achnacarry Estate is creating a linked circular walk through the pinewoods in Glen Mallie with scope to include information on this route in the visitor information to be developed at the main Chia-aig waterfall car park, Cameron Museum and ACF hub at Clunes.

The Cia-Aig waterfall and car park is a popular visitor attraction. Plans are underway to design and install an orientation panel here that promotes forest restoration and encourages informal access to the bothy via the forest. Complementary information panels could be installed at other strategic locations including the Clunes Forest School on the Great Glen Way, and the Butterfly reserve which overlooks a view of the forest.

Arkaig Community Forest took on ownership of Forest School buildings and oakwood at Clunes from the state in 2021. In the future this could be a good venue for hosting school and community groups visiting the area for learning / recreation. It might also provide an ideal location for showcasing the live osprey cam and encouraging walkers passing by on the Great Glen Way to become members and supporters.

Plans to develop a rainforest roundhouse in Glen Mallie will provide improved opportunities to host volunteers and other groups who wish to contribute to the restoration works or connect with with nature.

There is a long term opportunity to replicate a similar volunteer facility in the Gusach, providing a base to coordinate volunteer activity in this section of inaccessible woodland.

ACF's recruitment of a Volunteer Coordinator in 2024 provides an opportunity to develop a structured volunteer programme in Loch Arkaig Pine Forest. In addition, the newly recruited post may provide an opportunity to establish new links with other community groups seeking opportunities to contribute to the restoration work and connect with

nature.

We will continue to tour stakeholders and supporters around the site as required.

Translocations of wood ants and small cow-wheat have been developed to upskill and utilise volunteer input as key components of the project.

#### Constraints

Until harvesting operations are completed by the end of March 2026, opportunities for access to the site for recreation and learning purposes will be limited to those areas not directly affected by these operations.

Car parking is restricted to the capacity permitted by the Forestry Commission car park.

Our live osprey cam depends on the provision of rural broadband courtesy of local provider Lochielnet. The stability of this service is subject to weather conditions.

Lack of shelter on site or any facilities for increasing the scope of volunteer capacity in the forest.

Rough terrain and steep slopes may limit the ability of some volunteers to contribute to certain key aspects of the restoration work.

#### **Factors Causing Change**

Recruitment of a Loch Arkaig Pine Forest volunteer coordinator will help with the establishment of a local woodland working group, which will contribute to the long term delivery of conservation activities across the site.

The rainforest roundhouse project, once complete will provide facilities to support volunteer activities in Glen Mallie and attract a great range of community groups to access the forest for education and wellbeing purposes.

#### Long term Objective (50 years+)

The local community will value the forest for the environmental, social and economic benefits it delivers.

Local people and others of all ages will be engaging with the forest in meaningful way as volunteers, using it as an educational resource and for informal recreation.

There will be a network of low impact path routes that will make the Glenmallie forest more accessible and which will be planned and designed to link and complement existing local visitor infrastructure and attractions. However, it is not anticipated that there will be large numbers of visitors or significant visitor infrastructure - and the Gusach will remain largely inaccessible and wild in nature.

The forest will be well known and valued by many people across the UK who will not necessarily visit in person but will engage virtually via a series of innovative digital communications.

### Short term management Objectives for the plan period (5 years)

In 2025, establish a structured volunteer programme across Loch Arkaig Pine Forest

Beyond 2025, building on momentum gained as part of the structured volunteer programme, work towards establishing and building capacity of a Woodland Working Group (WWG) so they continue to deliver practical and valuable conservation activities in the forest.

Over the course of the plan period, complete construction of the rainforest roundhouse, providing a facility to base volunteer activities from and engage community groups wishing to contribute to the restoration works or connect with nature through education and wellbeing awareness.

Continue to bring Arkaig wildlife into the homes of supporters across the UK using digital technology. Ensure continued training of local contractors following initial Spring 2019 training, to ensure they are able to carry out maintenance to osprey camera equipment.

Carry out maintenance of the Glen Mallie community art trail as required

Work with Forestry and Land Scotland to produce new interpretation panel in the Cia-aig carpark in 2025.

## 4.5 F5 Open Ground Habitat

# Description

As well as including open ground as part of the mosaic within woodland areas there are parts of the site which consist of wet heath with peat depths greater then 50cm. Some of these deep peat areas have been afforested and will be restored to peatland. Peat depth and NVC survey in the Western end of the Gusach (Cmpts 7 & 8) has identified significant areas suitable for restoration to peat along with low density peatland edge woodland, with smaller but still substantial areas of degraded peatland throughout both forests.

#### **Significance**

These are UK priority habitats and the restoration of important semi-natural open ground habitats within forests is part of the Trusts management approach.

#### **Opportunities & Constraints**

# Opportunities:

Funding through the Peatland Action Fund provides an opportunity to undertake restoration works to peatland hydrology, following removal of the plantation trees from the degraded peatland areas. Habitat and peat depth surveys have been carried out over the these areas and the associated report provides recommendations to restore both open bog habitat and peatland edge woodland.

#### Constraints:

As with much of the rest of the site access is a major constraint with the areas suitable for restoration to peatland habitats having a greater depth of peat combined with the presence of smaller trees and locations at the highest

elevations furthest from access approaches at the loch shore, making these areas the most logistically challenging part of the restoration project. Plantation removal has been achieved over the majority of the peatland areas but due to the cost it has not been possible to for Peatland Action Fund to contribute to this phase of the works.

#### **Factors Causing Change**

Changes to the water table caused by drainage ditches and ploughing. Windthrow and regeneration of non-native tree species. Impacts of deer trampling.

# Long term Objective (50 years+)

To clear significant areas of mature non-native conifers and control natural regeneration on accessible from areas of deep peat and create adjacent mosaic of habitats with areas of open ground along with low density native woodland. Post plantation removal drain blocking and ground smoothing to restore site hydrology and re-wetting of peatland.

#### Short term management Objectives for the plan period (5 years)

- 1. Remove plantation from all peatland areas by end of 2025/26.
- 2. Undertake post plantation removal works to restore peatland hydrological function by end of 2026/27, dependant on Peatland Action Funding being successful in this time period.
- 3. Remove regenerating non-native tree seedings from all peatland areas by end of 2030.

#### 4.6 f6 Mixed Habitat Mosaic

#### Description

Peatland Edge Woodland and Mountain Transition Woodland - development of low density native tree cover through natural regeneration on very shallow peats or at high elevation. Not all of the forest that is currently open ground or conifer plantation suits either establishment of native woodland or conversion to open peatland. These areas are either typically shallow peats under 30cm depth, of high exposed elevations on shallow soils. Both these conditions would naturally support a low density of native woodland with a significant proportion of open space. The areas suitable for these habitats have been mapped based on peat depth survey, PAWS survey and current tree cover.

#### Significance

The ecological value of these areas is currently typically low relative to the site as a whole, having experienced a long period of high grazing pressure on ground vegetation and holding less remnant features of ancient woodland, although some isolated remnants do exist within the Mountain Transition Woodland area.

### **Opportunities & Constraints**

Creation of low density woodland here gradually through natural processes experienced under a low browsing pressure will increase the resilience of the whole forest through increasing the linkages between the difference woodland and open habitats on site, allowing flora and fauna greater mobility through the site in responses to change such as climate change.

#### **Factors Causing Change**

Climate, browsing pressure, invasive non- native species

### Long term Objective (50 years+)

A low density of woodland cover and more diverse ground-flora will have developed under a sustained period of low browsing pressure.

#### Short term management Objectives for the plan period (5 years)

Removal of non-native invasive conifers from the area by 2027.

Reduction in browsing pressure to 'low' as defined by the Woodland Grazing Toolbox, by end of 2024.

New fence erection on eastern boundary of Glen Mallie by end of 2025.

## 4.7 f7 Archaeological Feature

## Description

20 individual charcoal platforms have been identified on the lower slopes in the Eastern half of Glen Mallie, all located within 200m of the shore. The Woodland Trust commission an archaeological excavation for the platform located at NN 16161 88429. Prior to the widening of a pre-existing track for the transportation of felled woodland and in order to protect an old oak tree from damage from these widening works, an excavation was undertaken of a charcoal platform located on the other side of the track to the oak tree. The aims of the project were to determine: the function of the platform, how it was constructed, the duration of its use and what damage had been caused by later tree growth. The work took place from November 2017 to May 2019.

The archaeological works comprised a three-dimensional survey and the excavation of the platform. The excavation revealed: the revetment platform was simply built from both stone and sediment which had been excavated out of the hillside as well as locally sourced fluvial glacial boulders; it had been utilised for the production of charcoal, one firing of which was dominated by birch; it had been severely damaged by slumping which resulted from the construction of a later probably early 19th century track; and more recent tree colonisation had caused some disturbance to the surviving stone revetment. Although the platform remains undated, a reference to the construction of an iron mill on the River Arkaig in Lochaber made by Sir Robert Sibbald, and dating to around 1688, would suggest that the platform was used to produce fuel for this new venture.

#### Significance

Charcoal platforms are widespread in ancient woodland and PAWS through Lochaber. However, archaeological investigation has shown in at least one instance within Lochaber, earlier use of a charcoal platform and hence greater significance that would not have been visibly evident without excavation and carbon dating. The charcoal platforms here are a cultural feature indicating how the woodland has been used in a certain historical period. It is possible that one or more platforms may have been used for a purpose other than charcoal production before the industrial revolution and would therefore have greater importance.

# **Opportunities & Constraints**

A number of the platforms remained under plantation conifer with removal during 2021-23. Contract conditions and supervision protected the platforms from damage during operations. Native trees will be allowed to regenerate on the

platforms as the risks of windblow and damage to the structures is much lower from native trees within a native woodland context than the preceding over-mature plantation.

One accessible platform has been incorporated into a community art feature as part of the art trail installed in 2022. The artwork subtly prompts visitors to consider charcoal burning in the context of how people have managed the forest in the past, and how management my people is shaping the forest's future. The art work was specifically designed to avoid any preparatory excavation on the site. There is a risk that increased footfall could cause erosion to the feature and this is to be monitored annually.

### **Factors Causing Change**

Erosion, windblow.

# Long term Objective (50 years+)

Charcoal platforms will be secure from threats allowing the potential for future archaeological investigation should it ever by undertaken. Visitors to the site will have an opportunity to see a charcoal platform and understand it's significance in the forest's cultural history.

#### Short term management Objectives for the plan period (5 years)

Annual monitoring of charcoal platform incorporated into art trail.

#### 4.8 f8 Veteran Trees

#### Description

Ancient and veteran trees are widespread over the site. An ancient tree inventory survey has been undertaken over 10% of the forest area with 157 ancient and veteran trees recorded. Scots pine are the most prevalent ancient trees through the forest with majority of Scots pines here being ancient because of the lack of pine regeneration due to high browsing level from deer and sheep over the past 250 years. The key extent of these ancient Scots Pines are recorded on the Caledonian Pinewood Inventory and are considered in the The PAWS survey carried out by Upland Ecology in 2015. Many of the ancient Scots pine trees demonstarte not only veteran festures due to their age but further features from the 1942 fire and earlier phases of historical felling in the pinewood, such as extensive burn scars, deadwood and ancient felling gob cuts.

Ancient and veteran holly trees are also prevalent though the forest, predominantly on the lower slopes. There is some evidence these may have had a cultural with winter pollarding for animal fodder in previous centuries. Very few younger holly exist in the forests.

A scatter of ancient and veteran oak trees exist through the forest at the lowest altitudes. The extent of charcoal platforms to the North East of the forest indicates that oak were at one time extensive in this localised area but few now remain.

Halo-thinning was undertaken by the Forestry Commission in the 1990's to remove planted non-native conifers from around mature native trees to reduce competition. This work has undoubtled allowed many veteran trees to survive despite having been under-panted, although a proportion of halo-thinned veteran trees still did not survive to the current time.

Non-native beech trees were planted approximately 250 years ago on adjacent ground with widespread regeneration at the North East of the forest. At least two of the trees within the forest appear to date form this time with various younger age classes due to the unpalatability of beech to browsing herbivores and the high shade tolerance of the species. Due to the age of these two specific mature trees they will be retained; however younger beech trees will be removed, killed to create standing decaying wood, or veteranised; and natural regeneration of this non-site native tree will be controlled. Ongoing removal will be needed of beech regeneration seeded from the adjacent stand of beech trees along the shore on ground owned and managed by Achnacarry Estate.

#### Significance

The number, extent and high ecological value of the ancient Scots pine trees represents a highly significant feature of the forest. The extent of the veteran holly trees through the forest is also notable. Ancient oaks are individually significant features but less widespread than the Scots pine or hollies. The ancient beech trees are less significant in the context of so many veteran trees of native species. the beech trees do hold a cultural significant in being related to the end of a beech avenue being planted in the 1740's related to the seat of Clan Cameron - that was never completed due to the battle of Culloden and subsequent forfeit with Clan Cameron's land reverted to the government. The two ancient beech trees will therefore be retained while other beech trees will be removed unless individually assessed to be of particular ecological or cultural value.

#### **Opportunities & Constraints**

Removal of all non-native conifer trees is urgently required through the planned felling and extraction plan as the second phase in securing the ancient trees on site. This follows from the first phase of halo-thinning undertaken in the 1990's. The first phase secured the ancient tress from competition with plantation trees and allowed trees to physiologically adapted to more open conditions. The plantation is now mature and over-mature and starting to blow, risking physical damage to ancient trees. Further halo-thinning would increased risk of plantation wind-blow and create conditions for non-native invasive conifer regeneration from an abundant adjacent seed source. Removal of the surrounding plantation expeditiously will remove this threat and provide an opportunity for new native tree regeneration. This is urgently required given the lack of younger trees on site, particularly Scots pine and other tree species palatable to deer such as holly and oak. Protection of veteran and ancient trees during operations to remove non-native plantation, is carefully managed through contract conditions, toolbox talks and crib-sheets for operators, and regular monitoring throughout the operation.

Birch did regenerate prolifically on the lower portion of Glen Mallie following the more extensive 1990's removal of young plantation on the lower slopes , probably because at the at that time the deer density was managed at a level that allow establishment of this relatively unpalatable species. Many of the ancient holly trees, being a shorter species and often open-grown, are being over-topped by birch and threated by shade despite being a relatively shade-tolerant species. Halo-thinning through removal of birch is being undertaken gradually to secure these ancient holly trees while minimising change in ecological conditions, particularly given the necessary scale of tree removal elsewhere in the forest.

One veteran oak tree has in 2022 had features of the community art trail installed nearby. This provides subtle interpretation on themes of PAWS restoration and the value of veteran trees. While there is a risk of encouraging

increased footfall near the tree in causing physical damage to the tree, this has been discussed on site with the Woodland Trust Ancient Woodland Restoration Working Group with the consensus being that risk is low due to the low footfall on site and that impact can be monitored given footfall can easily be managed here.

While younger beech trees are being removed due to the threat presented to the rainforest habitats, the mature beech represent an opportunity for creation of veteran features and an education resource given their accessibility.

#### **Factors Causing Change**

Grazing & browsing by deer preventing establishment of future veterans, competition with invasive tree species or younger trees, wind damage

## Long term Objective (50 years+)

Ancient and veteran trees will be secure within a woodland habitat which through continuous cover management will develop strong semi natural characteristics, including a predominance of native tree species, a varied structure, a diverse ground flora, frequent standing and fallen deadwood and the absence of any significant threats from invasive species.

The removal of all of the remaining non-native plantation trees from the site in the next 2 years combined with a reduction in herbivore impacts will allow the native woodland to expand internally and result in a 'pulse' of regeneration which will compliment the existing age and species diversity on the site and allow the development of future veteran trees.

# Short term management Objectives for the plan period (5 years)

- 1. Remove all invasive non-native plantation conifers from the forest by end of 2026.
- 2. Remove all beech trees from site with the exception of any notable trees that are veteranised, or any younger beech that are killed standing to create decaying wood; by 2030
- 3. Use contract management and supervision processes to protect ancient and veteran trees from damage during operations.
- 4. Manage deer density at a level that results in a 'low' browsing impact as assessed annually using the Woodland Grazing Toolbox, as this allows for regeneration of palatable tree species to secure the future of ancient trees in the forest.
- 5. Continue programme to halo-thin around veteran holly and Scots pine trees, including removal or retained larch and pole stage birch that could threaten veteran tree features including rare lichens and bryophytes.
- 6. Monitor veteran oak tree near sculptural path art installation annually as part of dangerous tree survey, for evidence of any negative effects from foot-fall.
- 7. Monitor 'veteranised' beech trees annually as part of dangerous tree survey for development of veteran features and consider extending this work.

8. Complete a phase of beech regeneration removal through the entire beech area at the East end of Glenmallie in the
lower section of compartment 1, by end of 2030.

# 5. WORK PROGRAMME

Year	Type Of Work	Description	Due Date
2019	AW - Management Access Capital	Works associated with installing new or replacement management access infrastructure. Such as management access gates, vehicle bridges, fencing and surfacing works.	November
2019	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December
2019	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December
2020	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	February
2020	WMM - General Site Management	Works associated with maintaining conservation and physical features within the sites such as boundary ditches, fences and walls, hedges,	April
2020	WMM - General Site Management	Works associated with maintaining conservation and physical features within the sites such as boundary ditches, fences and walls, hedges,	April
2020	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	June
2020	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	September
2020	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December
2020	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	December

Year	Type Of Work	Description	Due Date
2020	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	December
2020	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December
2020	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	December
2020	WC - Fencing	Works associated with fencing to protect planting areas	December
2020	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	December
2020	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	December
2020	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December
2020	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	December
2020	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	December
2020	SL - Tree Safety Emergency Work	Work associated with unplanned emergency tree safety works – such as clearance of fallen trees/branches and associated repairs	December
2020	SL - Tree Safety Emergency Work	Work associated with unplanned emergency tree safety works – such as clearance of fallen trees/branches and associated repairs	December
2021	SL - H&S Signage	Provision of on-site signage both temporary and permanent to alert visitor to safety risks or measures	July
2021	SL - H&S Signage	Provision of on-site signage both temporary and permanent to alert visitor to safety risks or measures	July
2021	WMI - PAWS Restoration	Works associated with the restoration phase of Planted Ancient Woodland Sites (PAWS) such as halo thinning around existing native	July

Year	Type Of Work	Description	Due Date			
		trees, thinning and felling works, ride restoration, access improvements to aid restoration.				
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	July			
2021	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	August			
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	August			
2021	PC - Deer Control - Shooting	costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc				
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	August			
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	September			
2021	WMM - General Site Management	Works associated with maintaining conservation and physical features within the sites such as boundary ditches, fences and walls, hedges,	September			
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	December			
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	December			
2021	WMI - PAWS Restoration	Works associated with the restoration phase of Planted Ancient Woodland Sites (PAWS) such as halo thinning around existing native trees, thinning and felling works, ride restoration, access improvements to aid restoration.	March			
2021	WMI - PAWS Restoration	Works associated with the restoration phase of Planted Ancient Woodland Sites (PAWS) such as halo thinning around existing native trees, thinning and felling works, ride restoration, access improvements to aid restoration.	March			
2021	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	March			
2021	AW - Visitor Access Infrastructure	Works associated with the construction of a new or extension to existing car parking facilities.	March			

Year	Type Of Work	Description	Due Date
2022	PC - Deer Control - Shooting	Works associated with deer management by shooting – such as stalker costs, high seats, signage, maintenance of tracks and open ground provided specifically for deer management etc	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May
2021	SL - H&S Signage	Provision of on-site signage both temporary and permanent to alert visitor to safety risks or measures	May
2021	SL - H&S Signage	Provision of on-site signage both temporary and permanent to alert visitor to safety risks or measures	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	June
2022	AW - Visitor Access Infrastructure	Works associated with the construction of a new or extension to existing car parking facilities.	August
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	September
2022	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December
2022	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December

Year	Type Of Work	Description	Due Date				
2022	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December				
2022	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.	December				
2022	AW - Management Access Maintenance	Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.  Works associated with the maintenance of management access					
2022	AW - Management Access Maintenance Works associated with the maintenance of management access infrastructure and tracks Such as repairs to vehicle entrance points, maintaining vehicle bridges and repairing / reinstating surfaced management access routes.						
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	January				
2022	CS - Planning Permissions / Designs	Use of external consultants to undertake planning permission designs, supporting documents, oversee planning application process and presentation to planning committees	January				
2022	CS - Legal Fees	Click or tap here to enter text.	February				
2023	CS - Legal Fees	Click or tap here to enter text.	February				
2023	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May				
2023	PE - Events - General	Provision of materials needed to support a WT event / guided walk such as refreshments / shelters / mobile toilets					
2022	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May				
2023	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	May				
2023	WMI - General Site Restoration Work	Works associated with initial or restoration phases to conservation and physical features within the sites such as boundary ditches, fences and walls, hedges, infield and boundary trees	May				

Year	Type Of Work	Description	Due Date
2022	PE - Events - Schools	Provision of materials needed to support a schools / young people's events and activities such as refreshments / shelters / materials for activities etc	May
2022	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	May
2022	CS - General Consultancy	Use of external consultant to support Woodland Trust site management	May
2022	WMI - General Site Restoration Work	Works associated with initial or restoration phases to conservation and physical features within the sites such as boundary ditches, fences and walls, hedges, infield and boundary trees	May
2023	CS - Map / Interpretation Work	NULLUse of external consultants to support the provision of interpretation features and materials such as visitor information boards, leaflets, site based media applications	June
2023	PE - Interpretation & Signage	Works associated with the provision of visitor signage, waymarking, interpretation features and leaflets	August
2023	WMI - General Site Restoration Work	Works associated with initial or restoration phases to conservation and physical features within the sites such as boundary ditches, fences and walls, hedges, infield and boundary trees	December
2023	CS - Planning Permissions / Designs	Use of external consultants to undertake planning permission designs, supporting documents, oversee planning application process and presentation to planning committees	December

# **APPENDIX 1: COMPARTMENT DESCRIPTIONS**

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
1a	50.8	Scots pine	1700	Min- intervention	Gullies/Deep Valleys/Uneven/Rocky ground	

A large and diverse sub-compartment of very uneven terrain, mostly north facing with some very steep slopes and a deep gully on the Western boundary. There is a mixture of veteran Scots pine and younger downy birch present at very variable spacing from individual veteran pine trees, small stands of older pine, a lot of standing deadwood from the 1942 fire and scattered regeneration of downy birch dating from the enclosure of the woodland in the 1970's. Other native tree species present include silver birch, rowan, alder, eared & grey willow and two stands of aspen. The lower portion of the site was ploughed and planted with Sitka spruce in the 70's and subsequently felled to waste on the 90's. Large rhododendron bushes and patches of Gaultheria shallon, concentrated in the Eastern part of the compartment, have been removed manually along with smaller rhododendron seedlings throughout. Rhododendron ponticum and Gaultheria shallon regrowth removal is ongoing. There is also Sitka regeneration present although the majority has been removed through fell to recycle works. It is notable for the presence of an osprey nest in a mature Scots pine tree & Allt na h'Eiridh raised bog area – significant and distinctive (and relatively accessible) open habitat degraded by ploughing, planting, rhododendron, Sitka spruce regen and herbivore impacts – undergoing restoration.

1b	7.48	NULL	2022	PAWS	Gullies/Deep	Planted Ancient
				restoration	Valleys/Uneven/Rocky	Woodland Site
					ground	

Steep sloping, north facing site with mineral soil, consisting mainly of ground from which the dense unthinned 1971 planted Sitka spruce was removed over the winter of 2021/22. It is a PAWS site and there a few veteran oak and holly present as well as some more recently regenerated birch from the 1990's. There is a steep, narrow ATV track providing access. New native woodland is beginning to regenerate.

1c	12.52	Downy	1973	High forest	Gullies/Deep	
		birch			Valleys/Uneven/Rocky	
					ground	

Steep sloping, north facing site with mineral soil, with native broadleaved trees - birch oak and holly, there are scattered veteran trees present notably holly which may have been pollarded to provide fodder for livestock. The majority of trees are relatively young pole stage downy birch which probably regenerated when the site was fenced to establish conifer crops in the 1970's. There are also a number of mature/veteran beech trees present at the eastern end near to the track along with a small amount of regenerating beech from seedling to semi-mature. The eastern end of the compartment also includes a number of small crags rich in bryophytes and liverworts, with Wilson's Filmy Fern Hymenophyllum wilsonii recorded. A limited amount of fell to waste has also taken place. Presence of charcoal platforms, and veteran Scots Pine and Oak inc culturally modified tree/s. Some Silver Birch

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
					brown earths/cambsiols o d) mainly peaty podzols, pe	
1d	26.93	Open ground		Non-wood habitat		
woodland new bour pinewood	d - low densi ndary fence of d planting sc	ty native pinew erected in Janua heme from c. 20	ood, includir ary 2025 A sn 015 with Sco	ng dead snags and nall portion of the ts pine and birch p	l dry heath and areas of bra veteran trees on lower slo Northern corner overlaps blanted on mounds. Rhodo npartment with regrowth i	ppes, included within with a native dendron ponticum and
2a	21.33	Scots pine	1700	Min- intervention	Gullies/Deep Valleys/Uneven/Rocky ground	
1942 fire,	scattered re		downy birch	and a significant s	Ider pine, a lot of standing tand of mature Scots pine	
_	•	• •		<u>-</u> -	dry heath and areas of braplanting of non-natives wa	• •
2c	12.52	Downy birch	1700	High forest	Gullies/Deep Valleys/Uneven/Rocky ground	
mature ar bird cherr Oak inc c	nd pole stag ry, holly, ear culturally mo	e downy birch lo ed willow, grey dified tree/s. So	ong with a w willow and S ome Silver Bi	ide range of other cots pine. Presend rch (Betula pendu	padleaved trees on mineral species including rowan, a ce of charcoal platforms, and la) also present. Good mine amidst the birch regen.	ash, hazel, wych elm, nd veteran Holly and
2d	13.33	Open ground	2023	PAWS restoration	Gullies/Deep Valleys/Uneven/Rocky ground	Planted Ancient Woodland Site
-					 urse on the western side, t removal of a stand of Sitka	

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
pine estal higher up		e early 1970's w	hich had god	od growth at the b	oottom of the slope gradua	illy reducing in size
2e	2.88	Open ground	2022	High forest	Mostly wet ground/exposed site, No/poor vehicular access within the site	
the main mineral so veteran h	access track oil. Within th olly trees on	were felled in v e Eastern stand	vinter 2021/2 I there is a na th conifer are	22. The area is sur arrow riparian stri	f mature 1971 planted Sitk rounded by native woodla p of native woodland as w stand was extracted by cab	nd, growing on good ell as a number of
2f	10.06	Open ground	2023	High forest	Mostly wet ground/exposed site, No/poor vehicular access within the site	
		•	_		classified as peatland edg on peaty soils that were fel	
3a	32.94	Open ground	2023	PAWS restoration		Planted Ancient Woodland Site
Formerly had reger	mixed Lodge nerated at th	epole pine and S e time of planta	Sitka spruce v ation establis	with occasional ve hment. The Scots	ng and extraction of non-nateran Scots pine trees - an pine and birch trees have through the middle of the	d frequent birch that been retained throug
3c	1.95	Scots pine	1870	High forest	Mostly wet ground/exposed site	
Stand of r	nature and v	reteran Scots pi	ne pre-dating	I g plantation of the	l e now felled surrounding lo	odgepole pine.
3d	16.19	Downy birch	1700	High forest	Gullies/Deep Valleys/Uneven/Rocky ground	
mature aı	nd pole stage	e downy birch lo	ong with a wi	ide range of other	l padleaved trees on mineral species including rowan, a se of charcoal platforms, a	ash, hazel, wych elm,

Oak inc culturally modified tree/s. Some Silver Birch (Betula pendula) also present. Good mineral soils (although

wet!) – brown earths/cambsiols on the lower slopes above the track amidst the birch regen.

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
3e	1.31	Open ground	2023	PAWS restoration	Gullies/Deep Valleys/Uneven/Rocky ground, No/poor vehicular access within the site	Planted Ancient Woodland Site
plantation located no extracted stand). Th	n. Formerly a ear the botto by winch fro ese approac	group of isolatom of the steep	ed 'islands' c north facing eastern two) otection of tl	of Sitka spruce sur slope an relativel winch from above ne surrounding na	or-manual felling and extra rounded by native broadle y good mineral soils. The fo (the largest stand) and ho tive woodland that would	aved woodland our stands were orse (the western-most
3f	15.95	Open ground	2023	High forest	Mostly wet ground/exposed site, No/poor vehicular access within the site	
	-	•		•	g and extraction of non-naich were in check.	ative plantation.
3g	9.15	Open ground		Non-wood habitat	Mostly wet ground/exposed site	
		•	•		op of the slope above the ed as open ground	plantation, in both
3h	12.83	Open ground	2023	PAWS restoration		
	_	•	_		022/23 felling and extracti Forest Plan. Formerly lodge	
3i	2.24	Open ground		Non-wood habitat		
Riparian a	ırea with ma	ture Scots pine	and birch pr	l esent in low numb	pers	<u>l</u>
3j	0.92	Downy birch	1971	PAWS restoration		
Riparian a	rea with ma	ture Scots pine	and birch pr	esent in low numb	pers	<u>I</u>

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
31	2.24	NULL	2023	PAWS restoration		
		_			atercourse. Includes open n-native plantation.	ground awaiting
4a	34.81	Sitka spruce	1971	PAWS restoration	No/poor vehicular access within the site	Planted Ancient Woodland Site
lodgepo	e pine on the		ne non-nativ	e plantation remo	 pruce on the mid slope an val is being undertaken th	·
4b	8.19	Sitka spruce	1971	PAWS restoration	No/poor vehicular access within the site	Planted Ancient Woodland Site
localised challeng	areas of wet es, there is al	ground combings a significant a	ed with the area of wind	adjacent woodlan blow in the north	dland, timber quality is gen d types might present son end of this sub-compartm tation removal, with the re	ne harvesting ent. Some of this sub
localised challeng compart compart	areas of wet es, there is al ment is being ment schedu	ground combings a significant of the significant of	ed with the area of wind for access to on removal in	adjacent woodlan blow in the north the adjacent plan n 25/26. Remnant al regeneration po PAWS	d types might present son end of this sub-compartm	ne harvesting ent. Some of this sub- emainder of this sub- pine, birch and other  Planted Ancient
localised challeng compart compart native sp	areas of wet es, there is al ment is being ment schedu pecies form a	ground combings a significant of the significant of	ed with the area of wind for access to on removal ince for natura	adjacent woodlan blow in the north the adjacent plan n 25/26. Remnant al regeneration po	d types might present son end of this sub-compartm tation removal, with the re veteran and mature Scots	ne harvesting ent. Some of this sub- emainder of this sub- pine, birch and other
localised challeng compart compart native space.  4c  A mixed winters of the challeng compart and the compart native space.	areas of wet es, there is al ment is being ment schedu pecies form a 8.45 stand of Lodg of 2025. PAW	ground combines a significant of the significant of	ed with the area of wind for access to on removal ince for natural 1971  located at to veteran Sco	adjacent woodlan blow in the north the adjacent plan a 25/26. Remnant al regeneration po PAWS restoration	d types might present son end of this sub-compartm tation removal, with the re veteran and mature Scots	ne harvesting ent. Some of this sub- emainder of this sub- pine, birch and other  Planted Ancient Woodland Site  oval through the ing adjacent restored
localised challeng compart compart native space.  4c  A mixed winters of the challeng compart and the compart native space.	areas of wet es, there is al ment is being ment schedu pecies form a 8.45 stand of Lodg of 2025. PAW	ground combines a significant of the significant of	ed with the area of wind for access to on removal ince for natural 1971  located at to veteran Sco	adjacent woodlan blow in the north the adjacent plan a 25/26. Remnant al regeneration po PAWS restoration	d types might present son end of this sub-compartm tation removal, with the reveteran and mature Scots st plantation removal.  slope with plantation remixed ages of birch, include	ne harvesting ent. Some of this sub- emainder of this sub- pine, birch and other  Planted Ancient Woodland Site  oval through the ing adjacent restored
localised challeng compart compart native space.  4c  A mixed winters woodland  4e  Lodgepo 2025. Th	areas of wetes, there is all ment is being ment schedu pecies form a 8.45  stand of Lodgof 2025. PAW do to the Wes 17.06  le pine stand ese shallow pecies of a stand of Lodgof 2025. PAW do to the Wes 17.06	s ground combines a significant as a significant as gelled in 2025 for a significant as general significant as general significant as general significant as general significant as growing at the peats are to regerence.	ed with the area of wind for access to on removal ince for natural 1971  I located at the veteran Scored seed sour 1971  I top of the penerate as located	adjacent woodland blow in the north the adjacent plan in 25/26. Remnant all regeneration positions are storation.  PAWS restoration the test pine trees and rece for natural regeneration positions are storation.	d types might present son end of this sub-compartm tation removal, with the reveteran and mature Scots st plantation removal.  slope with plantation removal ages of birch, include eneration post plantation  No/poor vehicular access within the site  ping felling and extraction and classified as peatland extraction	ne harvesting ent. Some of this sub- emainder of this sub- pine, birch and other  Planted Ancient Woodland Site  oval through the ing adjacent restored removal.  during the winters of

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
mixed co	onifers on lov	ver slopes. Patcl	h of W9 type	•	Scattered veteran Scots pir tion noted under larch in c	
4g	8.53	Downy birch	1700	High forest	Gullies/Deep Valleys/Uneven/Rocky ground, No/poor vehicular access within the site, Sensitive habitats/species on or adjacent to site	
regenerathe west	ated pole sta	ge birch with oc ormed by a stee	casional mat	ure Scots pine alo	us with most of Cpt 5a, it comes with standing deadwood the in bryophytes and has si	d from the 1942 fire
4h	20.28	Open ground		Non-wood habitat		
-	l wet heath wit mainly isolate		l ant remnant រូ	l groups of mature	l and veteran Scots pine and	l d other native tree
4k	4.25	Downy birch	1700	Min- intervention	Gullies/Deep Valleys/Uneven/Rocky ground	
Steep rip	parian area o	n western side o	of Allta Bhath	aich with mature	Birch and Scots pine trees	
41	2.69	Downy birch	1900	PAWS restoration	No/poor vehicular access within the site	
	l area in the ce on relatively	•	nostly made	up of mature bird	l th trees but with large ope	l n grown Sitka also
4m	1.7	Sitka spruce	1971	PAWS restoration	No/poor vehicular access within the site	
Patch of	 	 Sitka mostly surr	ounded by L	 arch		
	3.71	Downy	1971	Min-	Mostly wet	

	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
Area of re	estored PAV	VS dominated by	/ mature bird	th trees some Sitka	a regeneration present.	
						T
40	4.73	Lodgepole	1971	High forest	Landscape factors,	
		pine			No/poor vehicular	
					access within the site	
of the PA	WS zone. Fe	-	25 winters. I	Natural regenerati	ery poor quality Lodgepole on is likely to be low in the	
4p	1.33	Lodgepole	1971	Non-wood		
¬p	1.55	pine	13/1	habitat		
		pine		Habitat		
		storation to pea			plantation removal in the	1
'4	0.05	birch	1700	I light for est		
		Direit				
Thic ic a c	mall part of	a wider area of	restored DAV	NS Cot 1a it consi	sts mostly of regenerated	nole stage hirch with
	-				he 1942 fire the western e	
	ai illatai e se		_		nt amounts of mature pine	-
	ly running N	I-S which is rich	iii bi yopiiyte	-	·	•
steep gul	ly running N	Sitka	1971	PAWS		
steep gul	-	Sitka		PAWS restoration		
steep gul	-					
4r Smaller g	4.33 roups of Sit	Sitka spruce ka amongst larcl	1971	restoration broadleaved wood	dland, timber quality is ger d types will require carefu	nerally quite good but
4r Smaller g localised removal.	4.33 roups of Sit	Sitka spruce ka amongst larcl	1971	restoration broadleaved wood	dland, timber quality is ger	nerally quite good but
steep gul 4r Smaller g localised removal.	4.33 roups of Sit areas of we	Sitka spruce ka amongst larch t ground combir	1971 n and native ned with the	restoration broadleaved wood adjacent woodlan	dland, timber quality is ger	nerally quite good but
4r Smaller g localised removal.	4.33 roups of Sit areas of we	Sitka spruce ka amongst larch t ground combir Lodgepole	1971 n and native ned with the	restoration broadleaved wood adjacent woodlan Non-wood	dland, timber quality is ger	nerally quite good but
steep gul  4r  Smaller g localised removal.  4s  Scattered	4.33 roups of Sit areas of we  0.28	Sitka spruce  ka amongst larch ground combine  Lodgepole pine  wn Lodgepole pi	1971 n and native ned with the  1971 ne growing o	restoration broadleaved wood adjacent woodlan  Non-wood habitat on deep peat, it is	dland, timber quality is ger d types will require carefu unlikely any timber produc	nerally quite good but I delivery of plantation
steep gul  4r  Smaller g localised removal.  4s  Scattered	4.33 roups of Sit areas of we  0.28	Sitka spruce  ka amongst larch ground combine  Lodgepole pine  wn Lodgepole pi	1971 n and native ned with the  1971 ne growing o	restoration broadleaved wood adjacent woodlan  Non-wood habitat on deep peat, it is	dland, timber quality is ger d types will require carefu	nerally quite good but I delivery of plantation
steep gul  4r  Smaller g localised removal.  4s  Scattered	4.33 roups of Sit areas of we  0.28	Sitka spruce  ka amongst larch ground combine  Lodgepole pine  wn Lodgepole pi	1971 n and native ned with the  1971 ne growing o	restoration broadleaved wood adjacent woodlan  Non-wood habitat on deep peat, it is	dland, timber quality is ger d types will require carefu unlikely any timber produc	nerally quite good but I delivery of plantation
Smaller g localised removal.  4s  Scattered from the	4.33 roups of Sit areas of we  0.28 poorly growsmall trees	Sitka spruce ka amongst larch t ground combir Lodgepole pine wn Lodgepole pind and fell to waste	1971 n and native ned with the 1971 ne growing on a may be the	restoration broadleaved wood adjacent woodlan  Non-wood habitat on deep peat, it is only option. The a	dland, timber quality is ger d types will require carefu unlikely any timber produc	nerally quite good but I delivery of plantation
Smaller g localised removal.  4s  Scattered from the	4.33 roups of Sit areas of we  0.28 poorly growsmall trees	Sitka spruce ka amongst larch t ground combir Lodgepole pine wn Lodgepole pind and fell to waste	1971 n and native ned with the 1971 ne growing on a may be the	restoration broadleaved wood adjacent woodlan  Non-wood habitat  on deep peat, it is only option. The a	dland, timber quality is ger d types will require carefu unlikely any timber produc	nerally quite good but I delivery of plantation
Smaller g localised removal. 4s	4.33  roups of Sit areas of we  0.28  poorly grossmall trees  0.75	Sitka spruce  ka amongst larch t ground combine  Lodgepole pine  wn Lodgepole pi and fell to waste	1971 n and native ned with the 1971 ne growing of may be the 1971	restoration broadleaved wood adjacent woodlan  Non-wood habitat  on deep peat, it is only option. The additional wood habitat	dland, timber quality is ger d types will require carefu unlikely any timber produc	nerally quite good but I delivery of plantation ct could be produced tion to peatland.

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
5a	73.89	Downy birch	1700	High forest		
managem remnants evidence remainde Scots pine veteran b provides	nent over the of Caledonia of harvesting r of the sub ce towering abore the present of the prese	last two or three in pine. The effective is a dominated ove them, two ent as well as part through this a	ee centuries. fects of the 1 d crosscut saw d by a dense of which we ole stage sco	The South West 942 are still evide ws which may hav cover of young pore chosen as sites ots pine and regen	tains evidence of a complet corner high up the hill content in places with many charter taken place after the fire ole stage birch with the octation new osprey platforms perating Sitka. a well constituting extended to provide act	tains significant arred snags along with a damage. The casional large veteran in 2018. occasional cucted ATV track
5b	10.23	NULL	2022	PAWS restoration		
	, - 0					a marriser or places. /
2021/22. scorched resulted i remainde carried ou	A significant snags, despit n most of the r are in very put in 2017. The	feature of this e halo thinning se suffering fro poor condition. e area was fello	cpt is the process carried out om light com  A small amed and extra	structed in 2021 t esence of numero in the 90's the hig petition, many ha ount of remedial octed using conven	o enable this area to be had us veteran scots pine alone high growth rates of the surrous died in recent years and extension to some of the hitional harvesters/forward we trees and ancient pine some of the surrous died in the	ervested in winter g with many fire bunding Sitka have d most of the alo thinning was ers with great care to
2021/22. scorched resulted i remainde carried ou	A significant snags, despit n most of the r are in very put in 2017. The	feature of this e halo thinning se suffering fro poor condition. e area was fello	cpt is the process carried out om light com  A small amed and extra	structed in 2021 t esence of numero in the 90's the hig petition, many ha ount of remedial octed using conven	o enable this area to be had ous veteran scots pine alon h growth rates of the surro ve died in recent years and extension to some of the had outional harvesters/forward	g with many fire ounding Sitka have d most of the alo thinning was ers with great care to

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
stunted	multi stem Si		w ground a	-	020/21. This large area of vergeneration with a scatte	
5e	2.09	Downy birch	1700	Min- intervention	Mostly wet ground/exposed site	
		_		l h west corner of the fell to waste activi	I ne site consisting of scatte ty	l red mature and veteral
5f	0.65	NULL	2022	PAWS restoration		
2021/22	. A significar	nt feature of this	cpt is the p	resence of numero	to enable this area to be hous veteran scots pine alor	ng with many fire
resulted remaind carried ( avoid re	in most of the ler are in very out in 2017. T	nese suffering from the sufficient from the suffering from the sufficient from the suffering from the suffer	om light cor . A small ar ed and extr	npetition, many ha nount of remedial acted using conver	sh growth rates of the surrace died in recent years an extension to some of the hotional harvesters/forward we trees and ancient pine s	d most of the nalo thinning was lers with great care to
resulted remaind carried ( avoid re	in most of the ler are in very out in 2017. T mnant featur	nese suffering from the proof condition from the area was fell res of the ASNW	om light cor . A small ar ed and extr such as the	npetition, many ha nount of remedial acted using conver root zones of nati	ive died in recent years an extension to some of the hotional harvesters/forward	d most of the nalo thinning was lers with great care to
resulted remaind carried of avoid re 5g Small st	in most of the ler are in very out in 2017. The mant feature ands of matures	nese suffering from the proof of the ASNW  Scots pine	om light cor . A small ar ed and extr such as the 1700	npetition, many han nount of remedial acted using conver root zones of nati Min- intervention	ive died in recent years an extension to some of the hotional harvesters/forward	d most of the nalo thinning was lers with great care to stumps/snags.
resulted remaind carried of avoid re 5g Small st removal	in most of the ler are in very out in 2017. The mant feature ands of matures	nese suffering from the proof of the ASNW  Scots pine	om light cor . A small ar ed and extr such as the 1700	npetition, many han nount of remedial acted using conver root zones of nati Min- intervention	eve died in recent years an extension to some of the hational harvesters/forward ve trees and ancient pine s	d most of the nalo thinning was lers with great care to stumps/snags.
resulted remaind carried ( avoid re 5g Small st removal	in most of the ler are in very out in 2017. The mant feature of the left in th	nese suffering from the area was fellowers of the ASNW Scots pine re/veteran scots	om light cor . A small ar ed and extr such as the 1700 s pine withir 2022	npetition, many han nount of remedial acted using conver root zones of nation Minimary intervention  PAWS restoration  atting natural reger	eve died in recent years an extension to some of the hational harvesters/forward ve trees and ancient pine s	d most of the nalo thinning was lers with great care to stumps/snags.
resulted remaind carried of avoid results statements for the second statement statements for the second statement statements for the second statemen	in most of the ler are in very out in 2017. The mant feature of the left in th	nese suffering from poor condition in the area was fell the ses of the ASNW Scots pine re/veteran scots NULL	om light cor . A small ar ed and extr such as the 1700 s pine withir 2022	npetition, many han nount of remedial acted using conver root zones of nation Minimary intervention  PAWS restoration  atting natural reger	extension to some of the hational harvesters/forward ve trees and ancient pine some of the hational harvesters and ancient pine some of the hational harvesters and ancient pine some some of the hational harvesters and ancient pine some some of the hational hational regeneration follows:	d most of the nalo thinning was lers with great care to stumps/snags.
resulted remaind avoid re  5g  Small st removal  5h  Felled a pine cle  5i	in most of the ler are in very out in 2017. The most of matural of the learness o	nese suffering from poor condition of the area was fell fres of the ASNW Scots pine    NULL   NULL   Number of the poor condition of the area was fell fres of the ASNW scots pine   NULL   Number of the poor condition of	om light cor . A small ar ed and extr such as the  1700  s pine withir  2022  ots pine, awa n winter 202	npetition, many han nount of remedial acted using conver root zones of nation Minimal intervention  PAWS restoration  aiting natural reger 1/22.  Non-wood	nve died in recent years an extension to some of the hational harvesters/forward ve trees and ancient pine some of the prize and ancient pine some anatural regeneration follows the prize and the pri	d most of the nalo thinning was lers with great care to stumps/snags.

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
A large	area of restor	ed PAWS stretcl	ning for over	1 Km along the so	outh shore of Loch Arkaig	and continuing almost
					g. The woodland consists	·
scattere alder w	ed throughout et woodland (	. Broadleaved t	rees are com	nmon throughout s of the burns. the	l veteran Scots pine and la with veteran oak present e understorey is generally	and patches of dense
6b	44.1	Lodgepole	1974	PAWS		Planted Ancient
		pine		restoration		Woodland Site
some bi pine. Ha	roadleaves - d	lowny birch, ear	ed willow, gr	ey willow, rowan	% of the compartment, the and bird cherry as well as ings of Scots pine and row	a few veteran Scots
		pine	1371	habitat		
Monocu by moli	_	epole pine on th	ne upper read	ches of the forest	outside of the PAWS area	, field layer dominated
6d	28.85	Open ground		Non-wood habitat		
6e	6.75	Hybrid larch	1974	PAWS restoration		Planted Ancient Woodland Site
	•			 ntly better soils pro lations of lower pl	 esent, approx. 50% is wind ants.	dblown, there are a lot
6f	2.17	Sitka	1974	PAWS		Planted Ancient
		spruce		restoration		Woodland Site
North e		the forest with I	 arge Sitka sp	ruce, suffering fro	m windthrow dominating	veteran holy and oak
present						
present 6g	3.18	Hybrid	1974	PAWS		Planted Ancient

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
Small are	a of hybrid la	arch and lodgep	ole pine	I		1
6h	1.79	Hybrid larch	1974	PAWS restoration		Planted Ancient Woodland Site
Small are	l a of hybrid la	l arch near the sh	ore			
6i	2.09	Sitka spruce	1974	PAWS restoration		Planted Ancient Woodland Site
4 small is	olated blocks	s of Sitka			<u> </u>	1
6j	3.7	Lodgepole pine	1974	PAWS restoration		Planted Ancient Woodland Site
Stand of S	Sitka spruce/	lodgepole pine	contiguous v	vith another area	of lodgepole pine to the s	outh
7a	55.65	Scots pine	1700	High forest		
occasiona holly and	al pole stage	and regeneratii Iso scattered th	ng Scots pine	with frequent lar	l aced veteran and mature i ge standing deadwood thi idence of extensive fell to	roughout. birch, alder,
		pine		restoration		
relatively	poor growth	with occasiona	al mature Sco	ots pine present. P	e pine on the upper margi Predominantly open groun land edge woodland in the	d with shallow peaty
7c	10.02	Open ground	2024	High forest		
	-	•		-	ng and extraction of non-narying depth, survey carrie	

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations			
	Ecology in March 2018 recommends reverting most of this area to open peatland habitat with some areas of peatland edge woodland to the north.								
7d	32.75	Lodgepole pine	1974	PAWS restoration		Planted Ancient Woodland Site			
Open grou	und awaiting	peatland resto	ration follow	ring 2023/24 fellir	g and extraction of non-na	tive plantation.			
7e	15.65	Lodgepole pine	1974	PAWS restoration		Planted Ancient Woodland Site			
•			-	_	epole pine across most of t er and Sitka spruce makes (	•			
7f	11.22	Open ground	2024	PAWS restoration		Planted Ancient Woodland Site			
	_	peatland resto a contiguous ar		•	g and extraction of non-na	ative plantation.			
7g	5.56	Hybrid larch	1974	PAWS restoration		Planted Ancient Woodland Site			
winter 20: access wa gradual in	Stand of reasonable quality hybrid larch on slightly drier ground. A very small number of larch trees were felled in winter 2023/24 as part of the wider plantation removal of the surrounding Lodgepole pine and Sitka spruce, where access was required to these other plantation species. The larch has been retained where possible to provide gradual input of decaying wood to the ecosystem and to provide woodland structure during the period of low woodland cover during this phase of PAWS restoration.								
7h	8.54	Open ground	2024	PAWS restoration		Planted Ancient Woodland Site			
compartm with tree	nents b&c for growth depe	med alternatin	g 'strips' of p at depth/we	oorly grown lodg	ig and extraction of non-na epole pine at the far weste spruce was also present in	ern end of The Gusach			

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
7i	9.51	Scots pine	1700	Min- intervention		
Small gro	ups of matur	e Scots pine an	d scattered k	pirch within the ex	rtensive area of Lodgepole	pine
7j	22.78	Open ground		Non-wood habitat		
Unplante	d areas withi	n and above are	eas of lodgep	pole pine, domina	ted by calluna and mollina	,
7k	5.3	Downy birch		Min- intervention	Mostly wet ground/exposed site	
Area of al watercou		l ed woodland al	ong the sout	l :h shore of the loc	l h extending inland either :	I side of a small
7m	2.07	Hybrid larch	1974	PAWS restoration		
Small star	nds of hybrid	larch on the lo	l wer slope wi	l th slightly better s	l soils present.	<u> </u>
8a	21.94	NULL	2024	PAWS restoration		
plantation variable t slow grow the best p	n. This is a sig hroughout cp vn with some peats for rest	gnificant area thota, this sub-constants windblow. Peadoration with the	nat was made mpartment hatland restore e remained s	e up of predomina nad relatively heal ation works throu	023/24 felling and extraction of the contraction of	rth rates were very eit relatively small and a and c will identify
8b	17.4	Open ground		Non-wood habitat		
extraction grass - an	n of non-nation d regeneration	ve plantation. S on is being mon	ome of the b litored carefo	etter soils within	l generation following 2023/ compartment 8. Dominate ether enrichment seeding ems per Ha.	ed by rank molinia
8c	14.21	Open ground		Non-wood habitat		

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Designations
compartr	ments a&c fo		ng 'strips' of	poorly grown lodg	ng and extraction of non-nepole pine at the far west	
8d	1.19	Open ground		Non-wood habitat		
native pla		es were remove		•	reas consisting of varying of varying of particles of par	·
8e	5.45	Scots pine		Min- intervention		
includes	the main po	pulation of Junip	per bushes o	on the site (some 1	& mature Scots pine, holl 0-20 bushes in total). Will n to thrive and expand.	• •
includes	the main po	pulation of Junip	per bushes o	on the site (some 1	0-20 bushes in total). Will	• •
includes targeted 8f Open hak 2023. Ma	1.27 pitat betweeninly deep po	pulation of Junip nt of herbivore in Open ground en the loch and t	per bushes on pacts to a 2024  he original pive plantation	Non-wood habitat plantation area. Soon trees were remo	0-20 bushes in total). Will	require careful were still present in

from this area in winter 2023/24 as the first phase of peatland/peatland edge woodland restoration.

# **GLOSSARY**

#### **Ancient Woodland**

Ancient woods are defined as those where there has been continuous woodland cover since at least 1600 AD. In Scotland ancient woods are defined strictly as sites shown as semi-natural woodland on the 'Roy' maps (a military survey carried out in 1750 AD, which is the best source of historical map evidence) and as woodland all subsequent maps. However, they have been combined with long-established woods of semi-natural origin (originating from between 1750 and 1860) into a single category of Ancient Semi-Natural Woodland to take account of uncertainties in their identification. Ancient woods include Ancient Semi-Natural Woodland and plantations on Ancient Woodland Sites (see below). May support many species that are only found in ancient woodland.

#### **Ancient Semi - Natural Woodland**

Stands in ancient woods defined as those consisting predominantly of native trees and shrubs that have not obviously been planted, which have arisen from natural regeneration or coppice regrowth.

#### **Ancient Woodland Site**

Stands in ancient woods that have been converted to plantations, of coniferous, broadleaved or mixed species, usually for timber production, including plantations of native species planted so closely together that any semi-natural elements of the understorey have been suppressed.

## **Beating Up**

Replacing any newly planted trees that have died in the first few years after planting.

#### **Broadleaf**

A tree having broad leaves (such as oak) rather than needles found on conifers (such as Scots pine).

#### Canopy

The uppermost layer of vegetation in a woodland, or the upper foliage and branches of an individual tree.

#### Clearfell

Felling of all trees within a defined area.

### Compartment

Permanent management division of a woodland, usually defined on site by permanent features such as roads. See Sub-compartments.

#### Conifer

A tree having needles, rather than broadleaves, and typically bearing cones.

## **Continuous Cover forestry**

A term used for managing woods to ensure that there are groups or individual trees of different ages scattered over the whole wood and that some mature tree cover is always maintained. Management is by repeated thinning and no large areas are ever completely felled all at once.

## **Coppice**

Trees which are cut back to ground levels at regular intervals (3-25 years).

## **Exotic (non-native) Species**

Species originating from other countries (or other parts of the UK) that have been introduced by humans, deliberately or accidentally.

## **Field Layer**

Layer of small, non-woody herbaceous plants such as bluebells.

## **Group Fell**

The felling of a small group of trees, often to promote natural regeneration or allow planting.

### **Long Term Retention**

Discrete groups of trees (or in some cases single trees) that are retained significantly past their economic felling age. Operations may still be carried out within them and thinning is often necessary to maintain stability.

#### **Minimum Intervention**

Areas where no operations (such as thinning) will take place other than to protect public safety or possibly to control invasive exotic species.

#### **Mixed Woodland**

Woodland made up of broadleaved and coniferous trees.

### National vegetation classification (NVC)

A classification scheme that allows an area of vegetation to be assigned to the standardised type that best matches the combination of plant species that it contains. All woodlands in the UK can be described as being one of 18 main woodland types (W1 - W18), which principally reflect soil and climatic conditions. For example, Upland Oakwoods are type W11, and normally occur on well drained infertile soils in the cooler and wetter north and west of Britain. Each main type can be subdivided into numerous subtypes. Most real woods contain more than one type or sub-type and inevitably some woods are intermediate in character and can't be properly described by any sub type.

## **Native Species**

Species that arrived in Britain without human assistance.

### **Natural Regeneration**

Naturally grown trees from seeds falling from mature trees. Also regeneration from coppicing and suckering.

### **Origin & Provenance**

The provenance of a tree or seed is the place where seed was collected to grow the tree or plant. The origin is the geographical location within the natural range of a species from where seeds/tree originally derives. Thus an acorn collected from a Turkey oak in Edinburgh would have an Edinburgh provenance and a southern European origin.

## **Re-Stocking**

Re-planting an area of woodland, after it has been felled.

## **Shrub Layer**

Formed by woody plants 1-10m tall.

#### Silviculture

The growing and care of trees in woodlands.

#### Stand

Trees of one type or species, grouped together within a woodland.

## **Sub-Compartment**

Temporary management division of a compartment, which may change between management plan periods.

### **Thinning**

The felling of a proportion of individual trees within a given area. The remaining trees grow to fill in the space created.

## **Tubex or Grow or Tuley Tubes**

Tubes placed over newly planted trees or natural regeneration that promote growth and provide protection from animals such as rabbits and deer.

## Weeding

The control of vegetation immediately around newly planted trees or natural regeneration to promote tree growth until they become established.

### Windblow/Windthrow

Trees or groups of trees blown over (usually uprooted) by strong winds and gales.

### **Registered Office:**

## The Woodland Trust, Kempton Way, Grantham, Lincolnshire NG31 6LL.

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