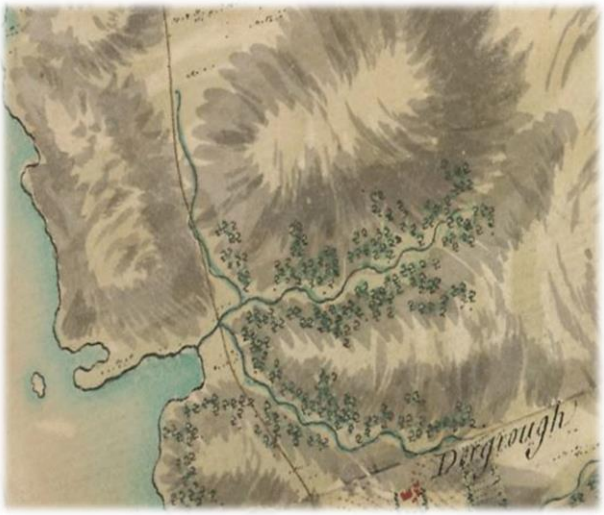
Glenan Woodlands

Portavadie, Kyles of Bute

Plantations on Ancient Woodland Sites

2018



Angus Bevan. Integrated Woodland Management.

Garden Cottage

Argyll

PA31 8QS

01852 500518, angus_bevan@yahoo.com

An associate member of The Native Woods Cooperative (Scotland) Ltd
A Company Limited by Guarantee No 428934

1 Introduction.

This PAWS assessment report has been prepared on behalf of the Kilfinan Community Forest Company, and has been paid for using funding from the Woodland Trust. The report looks at the ancient woodland and PAWS resource on the property, and discusses ongoing management priorities.

2 Property Details.

Glenan wood lies to the north of Glenan bay and the Portavadie ferry terminal. The woods rise from sea level to about 170m on gently sloping ground, exposed to the south west.

2.1 Grid reference: NR 928 700

2.2 Land Tenure.

The woodlands are currently owned by the Forestry Commission.

2.3 Grant schemes.

There are no grant schemes covering the woodlands.

2.4 Area covered in this report.

138 hectares of the woodlands were surveyed. The survey was focused on areas with a probable PAWS interest, based on the Native Woodland Survey of Scotland and the first edition O.S. map from 1840.

Why pay attention to Plantations on Ancient Woodland Sites?

UKWAS Compliance

The revised UKWAS guidance places a greater emphasis on the requirement to deliver restoration management of PAWS. Managers are now required to assess the potential for biodiversity gains at a site level, and protect and enhance remnant features. PAWS assessments can help fulfil these requirements by identifying priority areas, and specifying action required to enhance or restore these areas. Such input is likely to benefit grant scheme applications and the certification process.

Urgency to take action.

Much of the 55,000ha of Scottish PAWS is now reaching the end of a first rotation under conifers. The remnant biodiversity on these sites will be put at increased risk by a second rotation of coniferous plantation. There is an urgent need to take action to support appropriate management of the PAWS resource.

Invasive non-native species, particularly Rhododendron, pose an increasing threat to ancient woodlands across Scotland, massively reducing bio-diversity and preventing native regeneration. Control costs increase exponentially with time, making early intervention highly desirable.

Conservation value.

Scotland has 65,000ha of Ancient Semi-Natural Woodlands, 55,000ha of PAWS, and 1,200,000ha of plantations.

PAWS are to be found on areas that have mostly been wooded for thousands of years, and have developed a biodiversity value that goes far beyond the present tree cover. This is frequently most obvious in native woodland remnants along burnsides, but can also be seen where thinning, or choice of a crop species such as larch, has allowed light through to the forest floor.

Amenity value.

Sensitive management of PAWS sites can contribute to the aesthetic value of the landscape, as well as timber production, wood fuel, and game habitat.

Formatted: Indent: First line: 0.38"

3 PAWS management general principles.

Restoration of plantations on ancient woodland sites (PAWS) is now considered to be good forestry practice, and is required under the U.K. Woodland Assurance scheme. The aim is to restore areas of ancient woodland that have been converted to plantations of non-native species, or are threatened by invasive, non-native species, by harvesting the exotic trees and re-instating native woodland over an appropriate period of

time. The emphasis should be on gradual improvement and the change may be brought about over several decades. In some cases, a subsequent conifer crop may well be suitable if the priority remnants are protected. Future management of the restored native woodland can include hardwood timber production.

Research has shown that in most PAWS sites remnant historical and ecological features survive in amongst the conifer crop. These can be grouped into four categories:

1. Deadwood
2. Trees and understorey shrubs
3. Archaeological features
4. Woodland Plants

3.1 Purpose of this assessment.

This assessment aims to identify the remnant features still to be found in the wood and assess the level of threat that those features are under using the following classification:

Critical: need urgent action to avoid irreversible loss or serious decline

Threatened: unlikely to be lost in the short term, given current conditions, but long term survival is doubtful without intervention

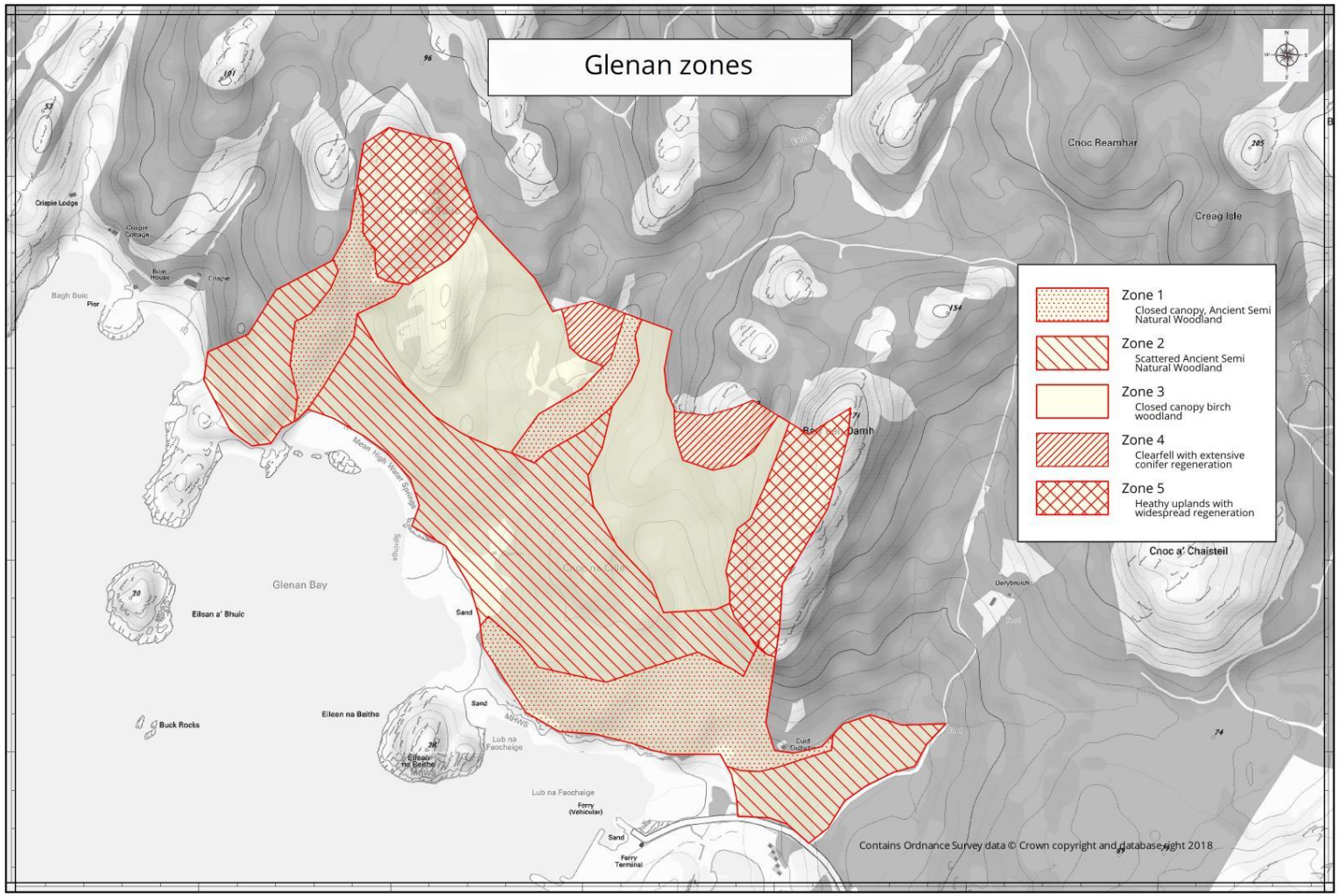
Secure: likely to remain the same or improve given the current conditions

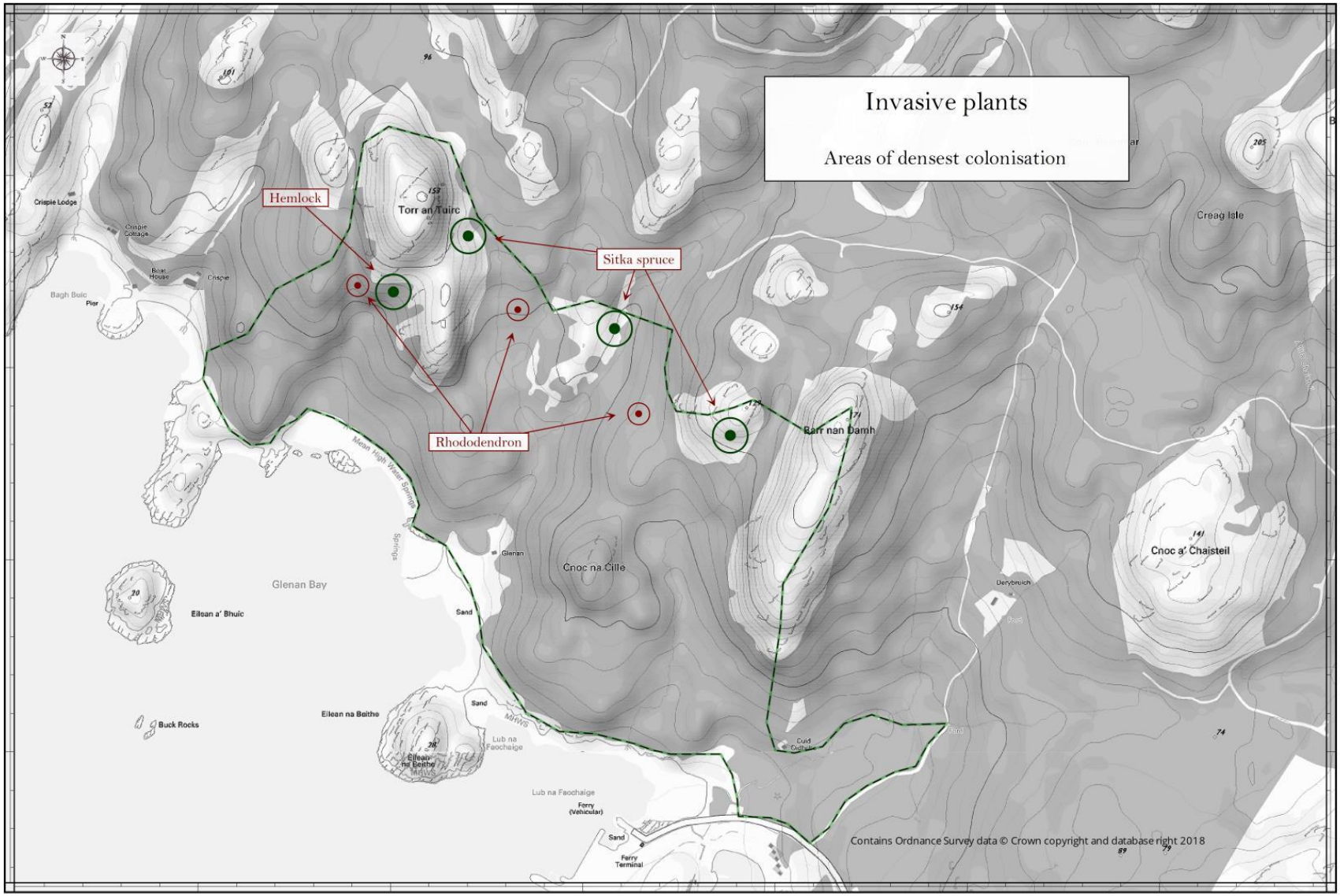
Recommendations are given on future management options for the site, based on the following best practice guidance:

* The premise that all PAWS are likely to retain some value from the ancient woodland
* Identifying the type, distribution and condition of remnant features is key to planning operations
* Gradual change and management of light levels will in nearly all cases be more beneficial than clear felling
* Two distinct operational phases are recommended:

1. To make the identified surviving features more robust by reducing the threats to their survival.
2. To make long-term improvement to the ecological value of the site. This second phase will incorporate other management objectives for the woodland, such as timber production, shelter, amenity, game management or improving capital value

4 Maps.


Glenan zones
Zone 1
Closed canopy, Ancient Semi Natural Woodland
Zone 2
Scattered Ancient Semi Natural Woodland
Zone 3
Closed canopy birch woodland
Zone 4
Clearfell with extensive conifer regeneration
Zone 5
Heathy uplands with widespread regeneration
Cnoc Reamhar
Creag Iste
Cnoc a' Chaisteil
Glenan Bay
Eilean a' Bhuic
Eilean na Baithe
Buck Rocks
Lub na Faochaige
Ferry Terminal
Contains Ordnance Survey data © Crown copyright and database right 2018


Invasive plants
Areas of densest colonisation
Hemlock
Sitka spruce
Rhododendron
Torr an Tuirc
Crispie Lodge
Crispie Cottage
Boat House
Crispie
Bagh Buic
Pier
Creag Isle
Barr nan Damh
Cnoc a' Chaisteil
Cnoc na Cille
Glenan
Glenan Bay
Eilean a' Bhuic
Sand
Buck Rocks
Eilean na Beithe
MHWS
Lub na Faochaige
Ferry (Vehicular)
Ferry Terminal
Mean High Water Springs
Contains Ordnance Survey data © Crown copyright and database right 2018

5 Zone descriptions and assessment.

5.1 Zone 1.

24.6 hectares. Closed canopy Ancient Semi-Natural Woodland.

These areas support mature woodlands, mostly of an Upland Oak/Birch type, (W11), with patches of Upland Ash woodland (W9) in the more base rich areas.

Woods are shown in these areas on the Roy map from 1740, and their long established nature is attested to by the presence of a range of woodland specialist plants among the ground flora, including such species as bluebell, primrose and Dog's mercury.

The canopy is generally complete in these areas, and there is extensive seedling regeneration, though very few seedlings are becoming established. Browsing by deer is likely to be the cause of this suppression, and the ground flora is in general showing the effects of a fairly high deer population. (It is interesting to note that browsing damage is lower in areas close to the shore path.)

Ancient "Phoenix" oak.
(Re-sprouting from a fallen bole)

Note the heavily browsed holly in the foreground, and the browsed, grassy ground flora.

The condition of the understory too is generally indicative of considerable browsing pressure over a long period of time: there are few young trees, with the shade tolerant (but highly palatable) holly and hazel being particularly under-represented, and nearly all basal growth is browsed off larger trees. Species diversity is quite poor even in brighter areas, and there is very little scramble of honeysuckle or ivy; again, highly palatable species.

Invasive rhododendron are scattered sparsely through this zone, with one dense colony on steep ground in the western compartment. This same area has been colonised with large numbers of Western hemlock, while self-sown Sitka spruce are present throughout at low densities.

Level of Threat: THREATENED.

Some parts of the western compartment are already heavily shaded by mature conifers, and the area affected will increase markedly in the short term as the widespread conifer regeneration matures. There are numerous mature broadleaf trees that will be over-topped by this growth, and the increased shade at ground level will both reduce the diversity of the ground flora and preclude desirable regeneration.

Invasive rhododendron forms a complete barrier to native vegetation where it dominates the understory, and the existing patches are likely to spread further through layering and seeding, particularly where mossy ground flora provides a favourable seedbed.

A longer term threat is posed throughout the woodlands by the level of browsing that is currently occurring. Native tree regeneration is entirely supressed and the age structure of the woodland is such that losses through wind-blow and senescence are not being replaced by younger trees. Over the longer term, this is likely to lead to a reduction of canopy cover in some areas, and the replacement of woodland ground cover with coarse grasses and bracken.

5.2 Zone 2

51.6 hectares. Scattered Ancient Semi-Natural woodland with dense bracken.

This zone supports large numbers of mature oak and birch trees at varying density, with some ash and rowan. An open canopy allows bracken to dominate the ground flora.

The 1st edition O.S. map from 1843 shows most of this area as woodland, and historical woodland cover is confirmed by the persistence of a woodland ground flora beneath the bracken, with species such as bluebell and Dog's mercury to be found in many places.

Seedling regeneration is fairly widespread, suggesting the presence of a healthy woodland microflora, but this regeneration is not becoming established due to regular browsing.

Young Sitka spruce and small rhododendron bushes are scattered thinly through most of this zone.

Level of threat: SECURE.

Although browsing has prevented the establishment of saplings, the age range of the existing trees is broad, and the level of tree cover is likely to remain stable over the medium term.

5.3 Zone 3.

37.8 hectares. Closed canopy birch woodland.

These areas support young birch woodland (W4) on generally wet ground, with a ground flora dominated by moss and moor grass. Somewhat older birch are found on the drier slopes, but there are few mature trees and little deadwood present.

Some planted oak and rowan are established in drier parts.

Rhododendron are present as several large patches in the wetter parts, (see map), and as scattered individuals throughout the area.

Parts of this zone are shown as wooded on the 1st edition O.S. map, but it would seem that there has been a period without tree cover. Possibly this area was cleared prior to the establishment of plantations to the north.

Level of Threat: THREATENED.

The spread of invasive rhododendron poses a significant risk to the native character of parts of this zone. The existing patches are mature and the mossy conditions are very favourable to the establishment of seedlings.

5.4 Zone 4.

5.1 hectares. Clear-fell with extensive conifer regeneration.

These parts of the woodland have been cleared of a conifer crop and now support a range of regeneration. Numerous birch have become established and there is extensive seedling regeneration, but regeneration of Sitka spruce and Lodgepole pine is dominant over most of the zone. Some of these trees are mature and will be setting seed.

The ground flora in this area is dominated by bracken in the lighter areas; shady spots have a generally grassy ground flora with some woodland components such as wood sorrel and honeysuckle. There is plentiful deadwood habitat from the conifer crop, though this deadwood will soon have rotted away entirely.

Invasive rhododendron is present in the western compartment as scattered immature bushes.

Level of Threat: THREATENED.

The dominance of exotic conifers will increase as the existing trees mature and extend their shade, shading out the ground flora and supressing native regeneration.

5.5 Zone 5.

18.6 hectares. Heathy uplands with extensive regeneration.

These hill-tops are generally heathy, with fine grasses and heather on the thinner soils and bracken elsewhere. There is a good deal of regeneration present despite the exposure and the lack of good seed source, predominantly of Sitka spruce but including large numbers of birch and a few oak. All of the regeneration shows signs of repeated browsing as well as the effects of exposure.

"Bonsai" oak among the heather.
This tree has survived harsh conditions for many years.

Rhododendron seedlings are also scattered across these areas.

No woodland cover is indicated on any old maps of this area, but the level of regeneration shows that afforestation is entirely possible.

Level of threat: n/a

6 Recommended Management Priorities.

6.1 Short term.

6.1.1 Invasive rhododendron control.

Invasive rhododendron is one of the most serious threats to any woodland ecosystem; left unchecked, colonies will spread through layering and seedling establishment to create areas that are not only impenetrable, but of very low biodiversity. The complete suppression of ground flora and natural regeneration leads to an inevitable decline in native character as existing mature trees are lost to age and windblow. The very fine seeds produced can be blown a considerable distance from the parent plant, rapidly colonising large areas when conditions are favourable.

The rhododendron population in the Glenan woodlands can be grouped into three categories, in decreasing order of control effort required:

- A western colony of dense, mature rhododendron on steep ground among mature native woodland.
- Two other patches of dense, mature rhododendron on boggy ground among birch wood
- Scattered individual plants across most of the woodland, mostly seedlings and small bushes.

The mature populations should be addressed as a priority to prevent further colonisation, and efforts should be focused on the patches on boggy ground where the nature of the ground flora provides favourable conditions for seedling establishment.

The scattered bushes across the woodland could mostly be removed using a light mattock or hand axe to uproot the plant, and this task could be usefully undertaken by volunteers, particularly during the winter and early spring when the evergreen rhododendron are easy to spot. Signage could be used to encourage walkers to pull up any small seedlings they find.

6.1.2 Conifer removal.

All conifers should ultimately be removed from these woods, as they will compete with the native trees for light and root space, and continue to colonise more ground through the establishment of seedlings.

Priority should be given to the removal of conifers which threaten to directly shade mature native trees, and to the eradication of Western hemlock. This species is an aggressive coloniser, and several mature specimens are present.

Small trees and saplings should be cut at ground level, and the brash piled around any nearby native tree regeneration to provide some level of protection from browsing. The mature conifers present are remote from any access tracks, and are probably best controlled by ring-barking. This will not only be the cheapest option, but will provide a valuable standing deadwood habitat.

Young Western hemlock beneath a mature oak. These saplings will soon grow through the canopy of the oak and shade it out.

6.1.3 Herbivore control.

There is a clear impact from deer browsing in most parts of the woods, with seedling establishment entirely prevented, and the lack of native saplings or pole stage trees indicates that this has been the case for decades. The domination of the ground flora by grasses and unpalatable species such as bracken is a further effect of sustained browsing pressure.

Planting efforts are unlikely to succeed under current conditions, as can be seen by the browsed off growth emerging from tree guards in several places.

Culling would have to be carried out as a co-operative effort with the owners of adjacent forests to have any effect on this fairly small area, and the fencing of the entire woodland would be extremely expensive.

The use of light weight, temporary deer fencing would be a cost effective solution, whereby targeted areas could be protected for a number of years, allowing a generation of seedlings to become established. The fencing could then be re-used elsewhere to gradually improve the age structure of the tree population and increase the range of the more palatable woodland ground flora.

Birch, Sitka spruce and rhododendron regeneration on Barr nan Dabh.
The topiary effect on the spruce is indicative of hungry, persistent deer!

In some parts of **Zone** 2, the bracken cover is allowing woodland conditions to persist at ground level. These areas would probably support good levels of regeneration if the browsing pressure was reduced.

6.2 Medium term.

6.2.1 Conifer regeneration.

Conifer regeneration will continue to appear within the native woodland while adjacent properties are forested with plantation conifer, and this will need to be controlled to prevent the loss of native habitat.

6.2.2 Bracken management.

Much of the poorer ground that is currently dominated by bracken should recover a greater level of diversity if seedling establishment is allowed by the reduction of browsing pressure. The increase in shade will supress the vigour of the bracken and allow competition from other ground flora.

Persistent bracken cover is likely, however, in areas with a fair depth of soil, where the frond size and density tends to smother seedlings and leads to the formation of a thick brash layer, preventing seedling establishment.

Regular bashing of the bracken, early in the season once several leaves have unfurled, will steadily reduce its vigour and density, increasing biodiversity and increasing the chance of natural regeneration. Unlike mowing, this approach avoids causing damage to desirable flora and seedlings.

Access during the summer and autumn would be improved by this work, and the consequent ground disturbance will greatly increase the chance of natural regeneration. This consideration suggests that less than optimal access route are chosen for initial bracken control, so that they can be abandoned to regeneration in the future.

6.3 Long term.

6.3.1 Noxious weed control.

Invasive rhododendron, Himalayan balsam and Japanese knotweed are all well established in Argyll, and are highly likely to appear in the woodlands in the future. All invasive plants are best dealt with at an early stage, so regular monitoring is to be recommended.