

Gearrchoille Community Wood Environmental Audit and Management Plan



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Summary

Gearrhoille Community Wood is a 13 hectare broadleaved woodland close to the village of Ardgay by the Dornoch Firth, Sutherland.

There has been woodland on the site since before 1750, so it is designated "Ancient Woodland". The site is biologically diverse.

Gearrhoille has a rich cultural past, parts of the site having been variously used for grazing livestock, cattle droving, curling and timber production.

Today the woodland is in the care of the Ardgay community. Paths have been developed and the wood is being increasingly used for educational purposes.

The site is described and proposals made for the future management of Gearrhoille by the community.

This document was prepared by Scottish Native Woods (North Highland) for Gearrhoille Community Wood Ardgay Ltd

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1 INTRODUCTION

This document brings together what is known about Gearrchoille Community Wood and evaluates its importance. This 'environmental audit' is covered in Sections 2 – 6. This is followed by Sections 7 - 12, which present proposals for future management.

The environmental audit is based on existing information collected by the community, the authors' field observations and specially commissioned surveys of the vegetation and amphibians.

For ease of reference, the northern part of the site (an area of woodland pasture) is designated as Compartment 2, while the main area of woodland is Compartment 1 (see Map 5).

2 GENERAL INFORMATION

2.1 Location

Ordnance Survey grid reference: NH600 900

Longitude: 4° 22' W, Latitude: 57° 52.5' N

Parish of Kincardine, Sutherland, Highland Region, Scotland.

The wood is situated at the southern entrance to the village of Ardgay.

2.2 Area

13.48 hectares

2.3 Land tenure and rights

Negotiations are ongoing to transfer the ownership of the woodland from Balnagown Estate to Gearrchoille Community Wood Ardgay Ltd, a charitable company limited by guarantee. In the meantime the wood is managed by the community under a management agreement from the estate.

The shooting and mineral rights are still as yet held by Balnagown Estate.

An 11Kv pole-line wayleave runs from Oakwood to the middle of the western edge of the wood. The wayleave is maintained by Scottish and Southern Energy Ltd.

2.4 Map coverage

OS 1:50,000 - sheet 21 Dornoch and Alness

OS 1:10,000 - NH58NE, NH59SE, NH68NW, NH69SW

2.5 Designations

Gearrchoille Community Wood is listed in the Ancient Woodland Inventory as Ancient Woodland of Semi-natural Origin (ASNO1750/NH58/19 and OORM1750/NH/57).

The old curling pond and the line of the old drove road are listed in the Scottish Monuments Register, but they are not designated.

There are no other designations on or adjacent to the site.

3 SITE DESCRIPTION

3.1 Physical

3.1.1 Geology and soils

The geology and soils have not been surveyed or researched in detail, but the ground flora indicates neutral soils, either loams or surface water gleys with some shallow peat accumulation in places.

3.1.2 Topography and aspect

Gearrchoille lies on a uniform, gentle, NE-facing slope. Altitude 20 - 30 metres above mean sea level.

3.1.3 Hydrology

Gearrchoille is bisected and drained by a small burn, Alltan na Beiste, flowing East and issuing from farmland around Ardgay Hill. It leaves the wood via a culvert under the A836 and discharges into the Dornoch Firth.

There are numerous small flushes across the site, draining East or South East. In some parts of the wood the flushes accumulate to create surface flows, especially where drains have been dug, *e.g.* north of Oak Wood and on the uphill side of the old drove road. The latter, after rain, forms a 'green burn' that flows to a culvert on the SE edge of the wood.

There are no natural pools or ponds in the wood and standing water only accumulates in places after heavy or prolonged rain. However, in the late 1800s a curling pond was created and filled by diverting water from the Alltan na Beiste. The pond is now largely overgrown and much of the flow in the Alltan na Beiste flows via the pond.

3.1.4 Climate

The nearest Meteorological Office records are from Kinbrace (alt. 150m). Weather records (1971-2000) were as follows: mean summer temperature: 14.9°C max, 5.7°C min; mean winter

temperature: 7.2°C max, 0.3°C min; average annual rainfall: 994mm.

Compared to Kinbrace, Ardgay is likely to exhibit a more coastal climate with slightly milder temperatures. The site is moderately exposed, especially to northwest winds.

Local weather records are gathered by a local resident.

3.2 Biodiversity

3.2.1 Habitats

A vegetation survey of Gearrchoille by Ruth Maier in summer 2007 identified 12 different National Vegetation Classification (NVC) types. See Appendix 1.

The main part of the wood (Compartment 1) is predominantly oak-birch woodland. Five woodland NVC communities are represented: W4b, W7b, W11b, W11c and W11d. These generally reflect the variation in soils and hydrology across the site. The woodland has an unusually high proportion of aspen, a feature which serves to confirm its 'Ancient' status .

There are clear indications that Gearrchoille was formerly managed as wood pasture (Quelch 2007). These include a number of pollarded oaks, trees established within the protection of juniper bushes and hazels demarcating the line of an old hedge.

The northern part of the wood (Compartment 2) has been grazed more recently. It comprises rough pasture with a scattering of mature oaks. The ground flora is dominated by heath plants and grasses.

Open areas are generally dominated by bracken, although in some parts of the managed wayleave, bog myrtle is the dominant shrub due to the impeded drainage, high water table and peat accumulation. Mires occur in small, discrete areas.

3.2.2 Flora

The woodland supports a very varied flora. Bluebells are present, and yellow pimpernel is widely spread. The juniper and aspen are of particular interest. A survey of lichens by Tony Fletcher in April 2003 revealed a number of interesting species. See Appendices 1 and 2 for species lists.

3.2.3 Woodland structure

Canopy

The woodland canopy is dominated by birch and oak, with locally abundant aspen. Maximum tree height is generally around 15m, though occasional aspen emerge above the canopy. Alder is

confined to stream margins. Scots pine, probably a remnant of former plantings, is also scattered through the woodland. Bird cherry is occasional. Two non-native tree species - beech and whitebeam - are rare.

Goat willow is said to occur in the wood, although it was not noted during the survey. The oaks all appear to be *Quercus petraea* (R.Maier *pers.comm.*) but this may merit further investigation.

Understorey

Hazel is abundant in the south-western part of the wood. Eared willow is found in wet areas close to the Alltan na Beiste. Juniper is scattered through the drier parts of the wood, while blackthorn is occasional on the woodland margins.

Field layer

The field layer is a varied mixture of other higher plants, from bluebells to bog myrtle. Blaeberry and heather are scarce and bracken is dominant in clearings on loamy soils. Tree seedlings are infrequent, largely due to the low light levels at ground level and the dense bracken in clearings.

3.2.4 Fauna

Mammals

Roe deer are relatively common, and a single red deer has been noted in the wood. Red squirrels have been recorded in the past. Badger and hedgehog have been noted as roadkills.

Birds

Field records are sparse, but great tit, starling, great spotted woodpecker, woodcock and buzzard were all noted during the survey and recorded as nesting in the wood. Andrew Ramsay has kept records for many years, but these have not been collated.

Great tits are the main species using the nest boxes and starlings occupy several of the tree holes.

Amphibians

The dampness of much of the woodland makes the site ideal for adult amphibians, but there is very little standing water, so breeding sites are scarce.

Common frog, common toad and palmate newt have been recorded in the wood with frog tadpoles recorded in one small location. A survey was undertaken in 2007 by McAllister. See Appendix 3.

Insects

Information is limited. Speckled wood has been recorded and a Camberwell beauty butterfly was recorded in 2007 (B. Geddes *pers. comm.*), one of many recorded in east Highland around this time.

A survey of leaf-mining moths by Duncan Williams in October 2003 revealed 23 species (Appendix 4), all of them common species (T. Prescott *pers. comm.*).

3.3 Landscape

Close views into the wood are provided from the A836 and neighbouring properties. The wood is visible in the wider landscape from Bonar Bridge and other viewpoints along a 5km stretch of the north shore of the Dornoch Firth.

Despite its limited size and low profile it is fairly prominent as an attractive feature in the landscape. The broadleaved canopy provides a pleasing visual contrast with the otherwise largely conifer-dominated hinterland of Ardgay.

3.4 Land-use, Past and Present

Gearrhoille appears as woodland on Roy's military map of 1750. While the wood was probably never totally cleared, it has certainly been modified by grazing, timber harvesting and planting.

Marketable quantities of oak, pine, larch and spruce were most recently harvested in 1971. Since then occasional trees have been felled or cleared after wind-blow for firewood.

The wood was last used for over-wintering cattle in 1959, but stock grazed Compartment 2 up until 2007 when fences were repaired and made stock-proof. The internal fence between Compartments 1 and 2 is in a poor state of repair.

The wood has been used formally for recreation for over 100 years, with curling from around 1900 to around 1940, clay pigeon shooting from 1940 to 1980. Footpaths were first installed in the late 1980s.

George Ross has compiled a more complete history of Gearrhoille (see Appendix 5).

3.5 Archaeology

Gearrhoille Community Wood has a rich cultural past, the legacy of which is evident in a plethora of archaeological remains and old trees displaying evidence of past management. A professional survey has not been undertaken, but some information is available on the Scottish Monuments Register. The following artefacts are evident in the field:

- Cattle drovers regularly used Gearrhoille Community Wood as an overnight stop for their cattle en route to markets. An old drove road defined by eroded earth banks and ditches runs

from Oakwood Place to near Oakwood chalets. Part of the new all-ability path runs along its length and it is also used for the main footpath access from Oakwood Place as far as the waymarked woodland path.

- The woodland contains the remains of three stone dykes; from NH6017 8966 to NH5986 9001, from NH60008 8976 to NH6024 8992 and from NH6014 8970 to NH6023 8975.
- Around 1900 a curling pond was constructed in the wood, at NH6003 8995, but this ceased during WW2. There are no remains of the curling hut that was located between two big trees on the East bank of the pond.
- There is an old corrugated iron hut within the woodland pasture element of the wood (NH5993 9005), that was used for clay pigeon shooting until the 1980s.

3.6 Adjacent land-use

The A836 Tain - Bonar Bridge road runs adjacent to the woodland to the East. The wood is bordered to the South and West by improved and unimproved pasture, some of which contain woodland fragments. These fields are let by Balnagown Estate and the tenants have shooting rights. To the North a narrow field of woodland pasture separates the wood from Ardgay village. Housing is proposed for this area. Three domestic properties and two holiday chalets also border the wood.

At present fencing is still the responsibility of the Estate.

3.7 Habitat connectivity

Gearrhoille is connected to conifer plantations to the West by native woodland and pine plantation remnants, a feature which probably explains the occasional sightings of red squirrel.

A main road, railway and industrial estate separate the wood from other coastal oakwood remnants along the shore of the Dornoch Firth.

3.8 Community context

The immediate community comprises:

- Ardgay village: to the North (population 200) with new housing proposed in the woodland pasture bordering the wood.
- Old Town and Oakwood: 6 houses and two holiday chalets immediately to the S and SW
- Lower Gledfield: 20 houses and Ardgay Primary School 1.6km to the NW.
- Bonar Bridge: population 400, 2.4km to the NE.

4 CURRENT MANAGEMENT

Community management of Gearrchoille started in 1988 with a 20 year lease from Balnagown Estate and the installation of bridges, styles and waymarkers for the main paths. Since then the Estate has agreed to gift the wood to the community.

In 2004 Gearrchoille Community Wood Ardgay Ltd was established as a charity to manage the woods for the benefit of the community. Public consultation helped define the community's aspirations and wishes for the future development of Gearrchoille.

4.1 Management by the Community

Membership to the company (Gearrchoille Community Wood Ardgay Ltd) is open to anyone resident in Highland Region on payment of an annual membership fee. The organisation is run by a team of up to 10 directors.

A core group of local residents are involved in the day-to-day running of the wood and in raising funds for activities.

4.2 Activities to date

Since the community became actively involved in the management of Gearrchoille, activities have included:

- Installation of 2 picnic benches by Community Council (1988)
- Construction of an all-ability footpath (2003), installation of 2 interpretation panels and signs to reduce dog fouling and disturbance to nesting birds.
- Bridge repairs, kissing gate, waymarkers and 1 picnic benches installed (2004) with funds from the Highland Access Project
- Construction of a 4-car carpark (2004)
- Putting tree guards around oak seedlings
- Putting up and monitoring bird boxes
- Cutting willow growing in the old curling pond (2003)
- Organising open days and educational activities, such as bird ringing and living willow sculpture (2005).

4.3 Access and recreation

The wood is already well used by local residents for walking, largely for exercising dogs and themselves, but also to appreciate the environment. The wood has also been used recently for events

such as Easter games for children and open days. A number of residents are aware of the conservation value of the woodland.

Access and recreational facilities at Gearrchoille comprise:

- One car-park with vehicle access off the A836, 0.5 miles SE of Ardgay at NH602 899, constructed in 2004. It measures 10m by 18m, and is designed to accommodate 4 cars.
- c. 460 metres all-ability trail, 1.6m wide surfaced with quarry dust, built in 2003, runs from the carpark to the old curling pond. This section of path includes a 4.5m x 1.6m timber bridge and 4 culverts.
- A narrower section of built path extends to an old pine tree and from there the return loop through the northern section of the wood is waymarked but unformed. A waymarked path also connects the wood along the line of the old drove road to Oakwood Place in Ardgay. The circular path includes two sleeper bridges over the Alltan na Beiste that were replaced in 2006/07. The unconstructed paths are muddy in wet weather with braiding and exposure of tree roots as a result of walkers continuing to use them in wet conditions.
- Three picnic tables along the all-ability path.
- One interpretation panel on the all-ability path.
- One green-willow structure adjacent to the path in the NE corner of wood.

Visitors also take informal access into the wood at NH5993 9005 on the northern fenceline and from the Oakwood Cottages on the SW corner. Some properties bordering the southern edge of the wood use the woodland to store firewood, dump garden waste and dry washing.

The Core Path Plan for Sutherland has identified the link from the centre of Ardgay via Oakwood Place to Gearrchoille and the paths within the wood as being part of the core path network for the communities.

There are no through-routes linking the Gearrchoille Community Wood paths to other paths outside the wood, so the Gearrchoille path is essentially closed. Visitors generally enjoy a short walk or exercise the dog. They either use the carpark as a starting point or walk into the wood from Oakwood Place. Some neighbours access the wood from other points near their houses.

5 EVALUATION

Gearrchoille is a highly valuable site for biodiversity and amenity.

Given its relatively small size, this native woodland remnant has a remarkable variety of habitats. The abundance of aspen is especially important for the contribution it makes to biodiversity and landscape.

The historic features of the site, such as the drove road, curling pond and oak pollards, are evidence of a rich and varied cultural past worthy of further study.

The site's diversity, together with the access facilities which have been developed, provide a high quality environment for public recreation.

6 POLICY CONTEXT

A wide range of national, regional and local planning policies are relevant to the management of Gearrchoille, as they have a bearing on the support that future management proposals are likely to attract.

6.1 National forestry policy

The Scottish Government's vision for forestry is:

"By the second half of this century, people are benefiting widely from Scotland's trees, woodlands and forests, actively engaging with and looking after them for the use and enjoyment of generations to come. The forestry resource has become a central part of our culture, economy and environment."

The **Scottish Forestry Strategy** is based on four principles, all relevant to Gearrchoille: sustainable development, social inclusion, forestry for and with people and integration with other land uses.

More specifically the 2007-08 Strategy Implementation Plan includes the following key issues for action: tackling climate change, promotion of timber, boosting community involvement, improving access and health and enhancing biodiversity.

6.2 Regional forestry policy

The **Highland Forest and Woodland Strategy** (2006) identifies similar targets that have relevance to Gearrchoille:

- Increasing community benefits from and involvement with woodland management
- Maximising non-timber benefits
- Expansion and management of woodlands around settlements
- Improving tourism and recreation benefits from woodland
- Improving and extending native woodlands through habitat networks.

6.3 Biodiversity policies

The **Scottish Biodiversity Strategy** aims to reverse the loss of habitats and species and engage more people in helping to achieve this reversal.

The **Sutherland Local Biodiversity Action Plan (LBAP)** recommends the following objectives that might have a bearing on Gearrchoille:

- Encourage and support small and large scale community-led biodiversity projects to enhance local habitats and ensure they are adequately resourced and publicised
- Discourage the import of new species into the area unless the species was indigenous and can offer a positive contribution to the current biodiversity.

The LBAP target for native woodland is to bring 1000ha of native woodland into management and expand the native woodland area by a further 1000ha through natural regeneration. In addition two other targets may have bearing on the wood and the community:

- To encourage 5 of the larger towns and villages in Sutherland to undertake an audit of their wildlife
- To use the Dornoch Firth basin as a model for the practice and demonstration of prudent land use throughout the Highlands involving crofters, farmers, foresters, water bailiffs and stalkers.

Within the Forest and Woodland section of the Sutherland Biodiversity Action Plan, objectives include:

- to facilitate and support community management and ownership of local native and commercial woodlands and forestry
- to halt the destruction of native woodland through felling or inappropriate management (such as overgrazing) and housing and other developments through sound planning, awareness raising and influencing of grant scheme
- to encourage appropriate management of existing woodlands to promote biodiversity
- to encourage the development of new broadleaved woodlands and mixed conifer and broadleaf blocks in appropriate sites
- to protect and increase coverage of aspen and juniper, to restore and expand coverage of riparian woodlands throughout Sutherland.

7 MANAGEMENT AIM

The community's aspirations for Gearrchoille are diverse and wide-ranging. Their combined vision for the woodland's future may be achieved by pursuing a suite of objectives which are summarised as follows:

To conserve and enhance the biodiversity, cultural and recreational values of Gearrchoille Community Wood

In order to minimise conflict in the achievement of objectives, it is recommended that Gearrchoille is zoned. In any particular part of the wood, higher priority will be given to one objective than others.

8 MANAGEMENT ISSUES

A number of issues arise at Gearrchoille which a management plan should seek to address. These include potential threats to the ecological integrity of the site, opportunities for conserving and enhancing biodiversity and improving recreational and education facilities at Gearrchoille.

8.1 Knowledge of site biodiversity

A good deal of information has been gathered on the flora and fauna. However, some taxa have received little attention, while others might merit further investigation by community members, with the help of experts. Activities such as moth-trapping and the use of bat detectors generate a lot of interest. Further study of the lichen flora would probably also be of value.

8.2 Woodland regeneration

Browsing by deer is hindering the natural regeneration of trees and impacting the woodland flora. Browsing levels are of particular concern for the most palatable species such as aspen and hazel.

Dense bracken in glades is also hindering tree regeneration. Bracken is unlikely to extend its area if the woodland canopy is maintained. Light bracken cover may support certain species of butterfly, such as small pearl-bordered fritillary.

8.3 Thinning

Areas of birch thicket are relatively low in biodiversity and visual appeal.

8.4 Juniper

With a historic reduction in grazing, the area of non-woodland habitats is steadily decreasing. This is evident from the declining condition of juniper, which is suffering from over-shading.

8.5 Botanical diversity

Because of past management, much of the grassland in the northern part of the wood is species-poor. The grass sward is hindering woodland regeneration and the development of greater botanical diversity in the field layer.

8.6 Non-native species

Non-native species (typically garden escapes) can be a major problem in native woodlands. They out-compete native species and make little contribution to biodiversity. Non-natives do not currently threaten the ecological integrity of Gearrchoille. Beech and whitebeam are not common in the woodland, but dumping of garden waste and garden escapes pose a potential risk.

8.7 Wetland habitat

For a period following its disuse, it is likely that the curling pond provided some good habitat for aquatic life. As the pond silted up and trees and scrub grew up in and around it, the quality of this habitat has declined.

8.8 Nesting and roosting sites for birds and bats

It is possible that the availability of suitable cavities is limiting the use of Gearrchoille by some bird and bat species. An assessment of current sites (both natural and artificial) would be valuable.

The installation of a range of bird and bat-boxes (to suit different species, including redstarts and flycatchers) might be useful, and is an excellent way to involve the wider public in management activities and monitoring.

8.9 Need for improved access

Given the limited size of the wood and the importance of conservation as an objective, increasing the path network may not be desirable, but improving the existing paths will improve visitor satisfaction and reduce damage to tree roots and ground flora. Improved access is probably one of the items highest on the community's wish list of activities.

8.10 Activity areas

There is currently no focal point for meetings, educational events, picnics or barbecues. There is also a demand for an area to be set aside for a small tree nursery and orchard for Scottish fruit and herb plants.

8.11 Archaeology

Gearrchoille is endowed with a rich cultural heritage, which is not comprehensively documented. When planning any developments in the wood, account must be taken of the archaeology, including the management of old pollards and other trees reflecting the history of the wood.

8.12 Over development

Inappropriate management could have a negative impact on the wood. In particular, further development of paths or over-zealous felling could threaten biodiversity.

9 MANAGEMENT OBJECTIVES AND PROPOSALS

9.1 Knowledge of biodiversity

It would be useful to involve the community in gathering more information about Gearrchoille's wildlife. Activities such as moth-trapping, bat, lichen and squirrel surveys could all be undertaken by experts as training exercises, with participants being invited from the community and beyond. The cost of training and equipment may be funded by the LBAP.

- Investigate further surveying and biological recording.

9.2 Woodland regeneration

The ideal solution to excessive browsing is to increase deer control. If this is not within the control of the community, the alternative is to individually protect selected trees. This has already been started by volunteers, but guards need to be tall enough to prevent browsing. The selection of seedlings is also critical, as light-demanding species such as oak require high light levels.

Acorn mesh guards are recommended, as they allow ventilation and are not too visually obtrusive. Larger diameter guards are available for shrubs such as hazel.

Chosen locations should allow protected trees to eventually fill canopy gaps, replace pioneer trees such as birch or grow successfully in the understorey.

Seedlings within areas of bracken need to be identified early in the summer before the bracken has grown up, or once the stems are tall enough to search under the fronds, but before the bracken collapses. Subsequent weeding around tree guards will be necessary to ensure seedlings get sufficient light and are not choked by bracken.

- Using 1.2m tree guards, shelter 20 oak, aspen or hazel saplings or seedlings each year for the next 5 years. Remove when established (after 4-5 years), and shelter another 20 trees. This will ensure that there are no more than 100 tree guards at any one time that need checking by volunteers.

9.3 Thinning

Some areas of birch thicket would benefit from thinning. This will improve their appearance and generate a useful product (firewood or logs for shiitake cultivation). While trees are small, this is a good hands-on group activity to involve volunteers from the community. Cut logs should be extracted by hand to the carpark or to the gravel pit area adjacent to the A836. Alternatively, cut material can be stacked as habitat piles.

Areas recommended for thinning might include the South side of the pond and areas close to paths.

- Thin a total area of 0.4ha of birch thicket over a 3 year period.

9.4 Juniper

Birch trees are over-shading juniper in many areas.

- Remove birch trees to release shaded juniper.

9.5 Botanical diversity

Where a vigorous species-poor sward has developed as a result of past grazing, recovery of the woodland flora is likely to be a slow process. An alternative is to manage these areas for other benefits.

In Compartment 2, cattle could be used to break up dense sward and create sites for seedlings to establish. This would be best arranged with neighbouring grazing tenants. Fences and gates would need to be maintained, and stock introduced on a seasonal basis. A suitable regime would be a maximum of 15 cattle from August to October, without supplementary feeding. Grazing and

access do not mix well. Cattle, in particular, damage footpaths and cause anxiety for dog-walkers.

- Consider grazing versus crafting options for Compartment 2.

9.6 Non-native species

Whilst non-native species do not currently pose a threat, they can spread quickly once established. Vigilance and prompt action are recommended. Attention should be especially focussed near the road, car-park and neighbouring gardens.

9.7 Wetland habitat

It is recommended that the curling pond is excavated to create a small area of open water of varying depths and associated wet margins. Given the extensive growth of willow in the old pond, excavation would most efficiently be done by bringing in a small, tracked excavator from the car park and accepting some minor and recoverable damage to branches overhanging the path and to trees where the machine needs to avoid the footbridge. With operator care there should be minimal damage to the path surface.

This excavation will remove the clay liner of the pond, but given the high water table and the constant flow of water from the burn, this is unlikely to affect the pond's ability to hold water year-round.

Willow brush that has been left on the old curling pond site should be removed to make habitat piles in the adjacent woodland.

Care should be taken not to disturb the northern margin of the old curling pond, as this area contains some interesting botanical specimens.

The curling pond is of historical interest. The archaeology unit at Highland Council has requested that a photographic record is made of the curling pond before work is undertaken.

- Record the curling pond
- With a suitably experienced contractor, plan, peg out and implement pond excavation

9.8 Paths

The surface of the way-marked woodland trails that loop through the wood and link to Oakwood Place should be improved.

There are various ways to achieve this. Board walks reduce ground damage and interfere least with ground vegetation, but they are costly to install and maintain and consideration needs to be given to non-slip surfaces.

A more lasting alternative is to use a geotextile base and gravel for those sections that need it most. If this can be done with minimal

machine use and a lot of volunteer labour, then the ground damage will be reduced.

The problem of dog-fouling might be addressed by providing a dispenser for bio-degradable bags on entry to the wood, and a compost bin on leaving the wood.

- Plan and implement path improvements

9.9 Social and educational activity areas

Three sites are recommended for activities in the wood.

The area close to the old gravel pit has good drainage and ground conditions are robust. Repeated cutting of bracken will create an area suitable for educational activities.

A small meeting/picnic area could be opened up on the South or East side of the pond.

For the production of fruit, the woodland pasture area (Cmpt 2) is best suited to this activity. Soil samples should be taken to determine the most suitable crops, or the need for applications of fertiliser or lime. Fruit bushes will need moderate to high light levels, as well as protection from browsing animals. Apple and plum trees will require protection for the first 5 years of their life, but the bark will remain vulnerable to grazing animals, especially during the winter. Low growing fruit bushes will require a fenced enclosure if reliable quantities of fruit are expected.

If a herb or plant nursery is to be established, in addition to a fenced enclosure a water supply will also be required and a site close to the old shooting hut may be appropriate.

9.10 Archaeology

A field survey of Gearrchoille's archaeology would yield invaluable information that could be used to guide operations in the woodland, and perhaps provide a basis for interpretation. This survey should include an assessment of past woodland management, and should also seek recommendations for the future management of veteran trees such as old pollards. This may have to be balanced with a consideration of their epiphyte interest.

Several surveyors with complementary skills may be required to input before agreeing a management plan for veteran trees.

- Commission field surveys of archaeology and woodland management heritage
- Seek advice on management of pollards.

9.11 Bird boxes

An assessment of the bird box scheme should include number and design of boxes, and monitoring occupancy. The installation of further bird and bat boxes may be of benefit, especially for species such as redstarts and flycatchers.

- Assess current provision of nest-boxes, and consider erecting further boxes.

10 RECORDING AND MONITORING

10.1 Management activities

A detailed record should be kept of activities, quantities and costs. This should include a comprehensive photographic record before, during and after activities. All operations should be located by GPS readings and mapped.

10.2 Vegetation changes

A programme of monitoring will enable the community to track the woodland's progress. This is especially useful where change is gradual. The easiest technique is the use of fixed-point photography. Selected points should be identified using GPS, and mapped.

10.3 Breeding birds

If possible, the GPS location and design of all bird boxes should be recorded. The occupancy of boxes should be recorded annually.

10.4 Browsing

Browsing damage to planted trees should be assessed while inspecting and maintaining tree guards.

11 WORK PROGRAMME

To be written later.

12 PLAN REVIEW

The plan's progress and achievements will be assessed annually and the plan reviewed in 2012.

13 REFERENCES

<http://www.highland.gov.uk/leisure/countryside/countrysideaccess/corepathplans.htm> (Sutherland, Map 22 Ardgay and Bonar Bridge)

Maier, R. (2007) NVC Survey of Gearrchoille Community Wood. Commissioned survey report.

McAllister, D. W. (2007) Gearrchoille Community Wood Amphibian Survey and pond restoration recommendations. Commissioned survey report.

Quelch, P. (2007). Ancient wood pasture in Sutherland (unpubl. notes)

Ross, G. (2006). History of Gearrchoille. Unpublished

<http://www.metoffice.gov.uk/climate/uk/averages/19712000/sites/kinbrace.html>

14 MAPS

Map 1 – Location of Gearrchoille

Map 2 – NVC Survey

Map 3 – Archaeology and constraints

Map 4 – Recreational facilities

Map 5 – Management proposals

15 APPENDICES

Appendix 1: NVC survey (Ruth Maier)

Appendix 2: Lichens recorded (A. Fletcher and I. M. Evans)

Appendix 3: Leaf-mining moths (D. Williams)

Appendix 4: Amphibian survey (D. McAllister)

