



Scottish Forest Alliance



WOODLAND FOR WILDLIFE AND PEOPLE

CREATING WOODLANDS FOR
WILDLIFE AND PEOPLE IN SCOTLAND

A Case Study for the
18th Commonwealth Forestry Conference



www.scottishforestalliance.org.uk

1. A historical perspective on Scotland's forests

1.1 Introduction

The majestic "Scots pine" is an iconic feature of the Scottish landscape. The Atlantic Oakwoods of the West coast are a true temperate rainforest. Yet these are only part of Scotland's woodland resource.

Trees and woodland have featured in Scottish culture, traditions, music and poetry for hundreds of years, but by the start of the 20th century, most of the woodland cover had been lost.

Scotland's native woods are now returning and are increasingly regaining their position at the core of our national identity. As Steven and Carlisle – the forefathers of native woodland conservation in Scotland – said in 1959: "To stand in them is to feel the past"¹.

This paper sets out to explore how the Scottish Forest Alliance has played, and continues to play, a part in the renaissance of Scotland's native forests.

1.2 Scotland's native forests

It is perhaps not surprising that there is so little native woodland left, following centuries of exploitation and clearance for agriculture and fuelwood, together with mismanagement and neglect. Around 80% of Scotland's land was covered in native forest after the last Ice Age, where now only 17% of cover remains, of which only an estimated 4% is native woodland.

More significant still, the native woods that are left tend to be small and fragmented. Most remnants are less than 5 hectares in size. These small patches are the last refuge for many woodland species, but few can survive in such limited habitat areas.

Scotland's native woods are the western fringe of the vast Northern European and Russian Boreal forests. On the continent, the beasts of the forest – bears, elk, lynx and boar – still roam. But in Scotland, cut off from the continent by the sea following the last Ice Age, these species which need large areas of habitat to survive, have been lost. On the other hand, our woods have developed a character of their own – unique species of flora and fauna which have adapted to the local conditions.



Ronan Dugan - Boreal Forest, Hedmark, Norway

So what remains is limited, but all the more precious because it is unique – a result of Scotland's very specific geography, climatic conditions and management – it is a cultural landscape rather than a pristine wilderness.

1.3 Native woodlands and forestry policy in Scotland

Great Britain forest policy throughout the majority of the 20th century was focused on plantation-based afforestation, addressing the need to develop a national timber resource. For 50 years the focus was on foresters securing poor quality land and devastated woodland, including remnant native woodland, and planting fast-growing, introduced conifer species rather than encouraging regeneration or planting native species. The Forestry Commission as the state forest service both practised this on the national forest estate, and preached and incentivized this policy to other land managers.

The attitude of foresters and policy-makers to native woods, and how they are managed on the ground, has changed beyond all recognition in the last 50 years. This process of change started with Steven and Carlisle in 1959¹. It progressed slowly during the 1960s and '70s but during the 1980s and '90s public opinion, expressed through the environmental movement, transformed the policy landscape, shifting to a multi-benefit approach.

The Rio Summit in 1992 marked a turning point in how forestry policy was exercised in Britain. It not only promoted the sustainable management of plantation forestry, it also cemented the value of native woodlands as a crucial biodiversity resource. A number of international forest agreements have further promoted both the biodiversity and cultural value of native woodlands in the past 20 years. This has resulted in the preparation of UK Habitat Action Plans, which include specific targets for native woodland restoration, regeneration and expansion. The Forestry Commission and a number of environmental organisations in the public and voluntary sectors, together with progressive private land owners, have taken forward these ambitious targets.

Where once native woodland was replaced with plantations of introduced conifers, now native trees like pine and birch are spared and provide seed for regrowth. On the national forest estate alone, some 10m conifers have been removed from native woodlands over an area of 6,000 hectares².

It is against this background - of an identified need for action to restore and expand our native woodlands - that the Scottish Forest Alliance came into being.



Colin Leslie - FCS Glenmore Forest Park

2. The Scottish Forest Alliance – how it works

2.1 The origins of the Alliance

In the early 1990s, as people focused on the Rio agenda and the need for action on climate change, the role of forests as carbon sinks came to the fore. In the light of growing evidence of man's role in accelerating climate change, BP took a bold decision: to step out of line with the rest of the oil industry and acknowledge that climate change was happening and the burning of fossil fuels was at least partly responsible. This was a brave admission, both within the oil and gas industry and within the company.

People inside BP started to talk about how they should respond to this new operating environment – and this led to a series of initiatives to reduce their own industrial emissions. Staff were also asked for ideas of what else BP could do to address climate change.

At that time, a man called Robert Brown was in charge of BP's operations in the Andrew North Sea oilfield, based in Aberdeen. After many years of successful oil operations, he saw an opportunity for BP to use a small proportion of its revenue from North Sea oil operations to put something back, by creating new forests in Scotland. These would potentially act as a carbon sink, while also providing a lasting legacy for communities across Scotland.

The Kyoto Protocol of course excluded carbon capture through forestry, but people in government circles were starting to talk seriously about the possibilities of carbon sequestration and trading. BP decided to test out the theory on the ground.

At this point, BP approached, through various existing contacts, two non-governmental organisations – the Woodland Trust Scotland, a charity dedicated to native woodland conservation; and RSPB Scotland, part of the RSPB, a charity dedicated to the conservation of birds and biodiversity. In due course, given the scale of what was planned, BP also involved Forestry Commission Scotland, the state forestry body. In selecting who to work with, BP sought out organisations which owned land, and which were sufficiently well-established to be able to take on a 200 year commitment.

What followed – after some two years of discussion and negotiation – is, we believe, a first in world conservation: an Alliance between a multinational oil company, two nature conservation charities and a state forestry body, which will deliver over 10,800 hectares of new forest habitats in Scotland, underpinned by a contractual commitment to manage them over 200 years.



Chris Marsh – FCS Kinloch Hills

2.2 The Alliance's vision and objectives

The four members of the Scottish Forest Alliance – BP, Forestry Commission Scotland, RSPB Scotland and Woodland Trust Scotland – share a vision: to practise sustainable forestry and to create over 10,800 hectares of new forest habitats over the next 200 years. This will be achieved within a wider landscape area of some 32,600 hectares, including wooded areas, pasture, bogs, mires and moorland. The aim is not simply to increase the tree cover, but to create functioning forest ecosystems, comprising a range of tree cover and open ground habitats, which support a rich diversity of life.

The importance and scale of the original vision was vital in bringing together four very different organisations, each with their own perspective and working culture. A strong and shared sense of purpose was required.



WTP/Niall Berwie - WTS Glen Finglas

The overall vision is underpinned by five specific objectives:-

- Native woodland regeneration and expansion
- Conservation of biodiversity
- Socio-economic gains
- Carbon sequestration research
- Informing climate change policy development

These are considered in detail below.

2.2.1 The regeneration and expansion of native woodlands in Scotland

After the 200 year lifetime of the project, at least 10,800 hectares of new forest habitats will have been created. This is being achieved by planting more than 8 million trees and encouraging existing areas of native woodland to regenerate at 14 sites across Scotland, see Figure 1.

The Alliance sites include a range of habitats – from Atlantic oakwoods in the West to Caledonian pine forests in the East, and upland oak and birch woods in the South.



Figure 1. Scottish Forest Alliance sites

2.2.2 Contributing towards UK targets for forest and woodland biodiversity

In many countries, a 10,000 – or even 32,000 - hectare forest restoration programme might not seem that significant, but the Scottish Forest Alliance is making an important contribution to achieving UK targets for restoration of a range of forest habitats, including native pinewood, upland oakwood, wet woodland and upland birchwood.

In terms of biodiversity, the new forest areas will create important habitat for a number of priority species for conservation in Scotland, identified in a five year Species Action Framework³. These include capercaillie and black grouse, both species of European conservation concern, which have suffered serious population declines and which the UK is obliged to protect under the EU Birds and Habitats Directives⁴. Habitat is also being created for a range of other species identified in the Species Action Framework, including red squirrel, pearl-bordered fritillary and pine hoverfly.



WTPL/Richard Becker - Pearl-bordered fritillary



Desmond Dugan - Capercaillie at RSPB Abernethy

- 3 A five year Species Action Framework; Making a Difference for Scotland's Species, Scottish Natural Heritage 2007 www.snh.org.uk/speciesactionframework
- 4 Council Directive 79/409/EEC on the conservation of wild birds and Council Directive 92/42/EEC on the conservation of natural habitats and of wild fauna and flora

The Scottish Government's 2006 Scottish Forestry Strategy⁵ sets out a clear vision for Scotland's woodlands and forests, which the Scottish Forest Alliance is helping to deliver.

The vision is that: *"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. Woodlands have expanded to around 25% of Scotland's land area. The forestry resource has become a central part of our culture, economy and environment. Forestry has a major role in helping Scotland to adapt to climate change. The health and social benefits of forestry, and its role in rural and urban regeneration, are fully recognised. Native tree species comprise about 35% of the total forest area, in a network of functioning woodland and non-woodland habitats that span the valley bottoms to natural tree lines."*

The Scottish Forest Alliance is making a significant contribution to the delivery of the Scottish Forestry Strategy priorities for action - summarised in Table 1.

Table 1:
Scottish Forest Alliance contribution to Scottish Government Forest Strategy delivery

Scottish Forestry Strategy priority	Scottish Forest Alliance contribution
Using forestry, and adapting forestry practices, to help reduce the impact of climate change and help Scotland adapt to its changing climate.	Trialling integrated habitat management at the landscape scale. Researching the development of forest ecosystems and carbon capture through forestry.
Improving the quality of life and well-being of people by supporting community development across Scotland.	Creating new native woodlands which provide sustainable rural jobs and recreational and health benefits. 275 full-time equivalent jobs supported; 4,900 volunteer days on sites.
Making access to, and enjoyment of, woodlands easier for everyone - to help improve physical and mental health in Scotland.	60 km of new paths created; 146km of path networks on Alliance sites.
Protecting the environmental quality of our natural resources (water, soil and air), contributing to and improving our scenery, and helping to make the most of our unique historic environment.	Creation of new woodland, pasture and moorland areas over 32,600 ha, improving water and soil quality and biodiversity at the 14 sites and enhancing landscapes.
Helping to restore, maintain and enhance Scotland's biodiversity, and increasing awareness and enjoyment of it.	10,800 hectares of new forest habitats created within a 32,600 ha landscape area; testing new techniques to maximise biodiversity at the sites.

2.2.3 Promoting social and economic gains for local communities and the wider population of Scotland

The Alliance members were clear from the outset that, as well as delivering new areas of woodland, they were providing a resource for future generations. From BP's perspective, after many years of successful North Sea operations, this was about giving something back to Scotland. RSPB Scotland, Woodland Trust Scotland and Forestry Commission Scotland - the three landowners - all work with the local communities around their sites, providing employment, learning and recreational opportunities, chances for people to volunteer and learn new skills, chances to be involved with planning what happens on the sites.

The opportunities for people to get involved with the Alliance sites will increase as the forests grow - for example, creating forest resources for local businesses. Already, there has been an enthusiastic response, with hundreds of people involved in planting trees, helping to remove 'exotic' plants which can prevent native species from expanding successfully, building paths and bridges to allow for better access and enjoyment of the new forest areas.



FCS - Bridge building at FCS Glenmore

The combined talents and resources of the four member organisations will ensure that this unique, long-term project creates a legacy that will be of lasting benefit to the biodiversity, the people and the communities of Scotland.

2.2.4 The evaluation, research and demonstration of the contribution of sustainable forest projects to carbon sequestration in Scotland

When the Scottish Forest Alliance first came about, discussions were just beginning in earnest about the role of forestry in carbon sequestration. As the debate raged in the run-up to the Earth Summit in Rio de Janeiro in 1992, scientists were starting to look properly for the first time at how the world's forests, and the creation of new forests, could help to tackle the growing problem of CO₂ emissions.

While the Kyoto Protocol did not allow for carbon sequestration through forestry, some countries began to look at how much carbon their forests could absorb, with a view to counting this towards their agreed emissions reduction targets in the future. New planting in the UK since 1990 is estimated in the Scottish Forestry Strategy to take up some 400,000 tonnes of carbon per year by 2010, although this cannot currently be counted against UK emissions under international climate agreements.

So, the spotlight suddenly fell on the potential value of forests as 'carbon sinks'. However, relatively little is understood about how forests, particularly native woods, absorb carbon in Scottish conditions. The Alliance has undertaken to monitor the uptake and storage of CO₂ from the atmosphere on its sites for 200 years. For the first time, a means has been developed to measure carbon levels in the soil and vegetation before trees were planted, and at regular intervals as the new native woodlands develop. This means that it is possible to calculate how much carbon these new forests might absorb over 200 years.

2.2.5 Informing the development of the policies of UK Government, the Scottish Government and other relevant bodies on climate change

The Alliance member organisations all recognised, from the outset, the value of this initiative in informing policy debates about forest restoration and climate change. Here is an example of what can be achieved through public-private-voluntary sector collaboration across a wide geographical area and an unprecedented timescale. The research carried out on the sites can specifically inform discussions about the potential of native woodlands, in terms of carbon sequestration and climate change mitigation and adaptation. The community benefits of the project demonstrate the wider value to society of forest restoration projects.

The four Alliance organisations have very distinct roles in the policy arena: while RSPB Scotland, Woodland Trust Scotland and BP may set out to influence government policy; the Forestry Commission Scotland is responsible for formulating and delivering policy. To agree a joint objective in relation to policy therefore presented a number of challenges.



Chris Marsh - Atlantic oakwood at FCS Kinloch Hills

It was agreed that the Alliance objective would be to inform policy-making; and to avoid straying into the area of influencing policy. This has at times been a fine balancing act, but one which the Alliance has successfully negotiated, winning recognition from politicians and other decision-makers of the value this practical experience brings to the debate and the potential of the Alliance as a model of partnership working.

Initially the Alliance members signed up to a further objective: to make a contribution towards the partial mitigation of ongoing BP CO₂ emissions. As climate change mitigation discussions have moved on, and BP's approach to the Alliance has shifted from a focus on carbon sequestration to a desire to achieve a wider range of benefits for the environment and for people, this sixth objective has, by mutual agreement, become less of an imperative and more of a by-product of sustainable forest management.

2.3 Funding

BP originally agreed to invest £10m (US\$14.8m/€11m) over 10 years. Initially BP hoped that a single extensive landscape-scale new forest could be created, but it rapidly became clear that this was not feasible due to land use and land market restrictions. Instead, 14 sites have been identified as they became available to the land owning partners, and the funding period has been extended to 13 years, as projects took longer to come on-stream than initially envisaged. The incorporation of a number of sites (see Table 2, p14) has the benefit of including a range of different forest habitat types, as well as geographical and altitudinal ranges.

Some of the sites were already owned by the Alliance organisations; others were acquired in order to deliver new native woodland. While BP decided that they did not wish to become a land owner or manager, they also determined that their investment should not be used to fund land purchase. Nevertheless, the availability of long-term funding for land management proved a deciding factor – particularly for the two charities – in whether they could go ahead and acquire the sites.



Stewart Taylor – View over RSPB Abernethy

With funding secured for a number of years, the Alliance members were able to go out and seek match-funds from elsewhere – avoiding many of the usual pitfalls. Charities and public sector bodies are frequently constrained in seeking funding for projects by the need to avoid 'double-funding' from government sources in particular. Since the Alliance is funded through BP, there were no such strings attached to the money, so match-funding could be sought from a wide range of EU and Scottish Government sources, as well as from Lottery and other funds, which might otherwise have been precluded. All this has meant that, by the end of 2009, over £11.9m (US\$17.7m/€13.2m) had been leveraged into the project, in addition to the £6.3m drawn down from BP's fund.

2.4 Legal framework

The Alliance was a first for all of the organisations involved. Never had any of them undertaken anything similar; and the formalities took a number of years to complete because this was uncharted territory. The long-term nature of the commitment is a key feature of the Alliance. Each organisation is signed up – and legally committed – for 200 years. The personalities involved have undoubtedly played an important part in bringing this about, but what these individuals have achieved goes beyond their own lifetimes. They have committed their organisations to delivering a shared vision over 200 years.

All of the parties signed up to a legal agreement, which set out the six original objectives and specified in some detail how the project would be taken forward. It made clear that this is not a formal legal partnership, but rather a collaboration among organisations on specified terms. For example, the agreement provided for a Steering Group to oversee the project, made up of representatives of all four bodies, together with two independent members.

In addition to this joint legal agreement, each individual landowner entered into a separate contract with BP for each site, which received a grant of funds; and BP took a legal security over the land for 200 years, as a means of ensuring that the land use would be assured for the full lifetime of the project. BP has also secured the right to any carbon credits which may in future arise in respect of the project lands.



WTPU/Niall Bervie – Young rowan
WTS Geordie's Wood

It is perhaps an indication of how the Alliance has matured over the first 10 years that, looking back, the members question why such a level of detail was required to determine exactly how the Alliance would function. Yet at that time, there was less mutual understanding – indeed perhaps even a degree of mutual suspicion – which meant that all were more comfortable having the detail set out in writing and enshrined in a legal document. There was some frustration early on as the organisations learned about their respective working practices – for example, while BP was able to make rapid decisions and put them into effect, the governance arrangements for charities meant that decisions sometimes took time, for example, before land could be purchased or legal agreements entered into.

2.5 Project management

Under the legal agreement which established the Alliance, the Steering Group was designated specific roles: to agree on criteria for selecting woodland restoration sites, to devise project management and recording systems, to recommend which projects should be funded through the programme, and to assess projects annually to ensure they meet the agreed quality and management standards. The Steering Group was also made responsible for developing a communications strategy for communications with government, the scientific community and others.

The Steering Group established sub-groups to manage specialist areas of the Alliance's work: on biodiversity monitoring, carbon sequestration and communications. These groups are made up of expert representatives from each of the four organisations. After a few years it became clear that close links between these sub-groups and the Steering Group would be beneficial, so a Steering Group representative was appointed to act as mentor to each group, to ensure strong two-way communication. This is an example of how the approach to managing the ongoing work of the Alliance has adapted to circumstances over time.

The sites themselves report annually to the Steering Group in an agreed format and against agreed Key Performance Indicators, so that progress can be monitored. BP were keen to ensure a 'light touch', so the focus was on delivering woodland rather than completing paperwork. The reporting structures have benefited from BP's own business experience, resulting in systems which are effective and robust, but not excessively bureaucratic. Importantly, the performance indicators are about outputs on the ground, rather than how they are achieved.



WPL/Niall Bervie - Planting at WFS Glen Qurey

Each year, the landowners report on what has been achieved on their sites, in terms agreed by the Steering Group and as required under their contract with BP, in return for which they can draw down further funds.

2.6 Joint working

The four members of the Scottish Forest Alliance are each very different organisations, with distinct cultures and ways of working. The different members had bilateral relationships before joining the Alliance, but the project has transformed the way the four organisations co-operate. Close joint working has been essential to delivering the projects on the ground, to the joint research work and to effective communication about the Alliance with government, the scientific community and the wider public.

Where Alliance projects are taking place on adjacent sites – such as across the Great Trossachs Forest area (see Fig 2, page 17) – very close, and unprecedented, collaboration on the ground has been required. Needless to say, conservation charities and the state forestry body have not always seen eye-to-eye. Nevertheless, through this initiative they have demonstrated that they can work together to achieve a landscape-scale impact.

One means of nurturing this joint working has been to bring staff and volunteers from the organisations together as a team. This has helped to build mutual understanding, to allow people time to get to know each other, and it has always been important to make involvement with the Scottish Forest Alliance fun: people tend to give more if they are enjoying what they do!

BP has played a critical role in encouraging this type of collaboration and team building. Things they do routinely as part of their business – such as taking teams away for overnight stays to network and team build – may be a less accepted way of working in the charitable and public sectors. BP's encouragement for such initiatives, and help with meeting the costs, gave the Alliance members confidence to invest in the relationships and learn from different working practices.



FCS - Steering Group at work

Team-building has ranged from meetings of all the site managers to discuss issues affecting them on the ground and how they can be addressed; to a 2 day conference bringing together all 40 staff from the 4 organisations, who are directly involved with the project – whether as a member of the Steering Group, a site manager or an expert on one of the work groups. This was an opportunity to find out more about the different aspects of the project – the sites, the science, the community initiatives – and about the other Alliance organisations, which some of the staff would have had limited or no contact with before.

The time and effort invested in these activities have helped to build good working relationships between staff; and a broad-based commitment to the Alliance and its objectives within the organisations. Ultimately, the results of this collaboration are demonstrated by the transformation taking place in the landscape.

3. Delivering new forests at multiple sites

3.1 Acquisition of project sites

Initially BP had hoped that the overall objective could be achieved at a single, large site. It quickly became clear, however, that this was not realistic. In the early days, the Alliance identified opportunities for additional planting or regeneration at sites already owned by the organisations – such as at Abernethy and Glenmore in Strathspey and Glen Finglas in the Trossachs. As time went on, the organisations had the confidence to acquire sites in order to deliver new woodlands – such as the three Woodland Trust Scotland sites at Glen Devon in the Ochils (see Table 2, page 14).

This meant that the project could only progress as quickly as the market allowed – and land purchase negotiations, completing legal documentation and recruiting new staff all took time. Early on there was some frustration at how long it took to bring projects on-stream, but after 10 years, work is under way on 14 sites and the total landscape area which will ultimately be delivered is more than double the original target. Furthermore, the sites encompass a range of different native woodland habitats, geographical and altitudinal conditions.

Some people were initially sceptical about this planned transformation of their landscape. Perhaps the best testament to what has been achieved is the fact that the farmer who sold the first of the Glen Devon sites to Woodland Trust Scotland held back from selling more land until he had seen what they planned to do with it. Geordie's Wood is now part of the Alliance network of sites, named after the same farmer, who was so impressed that he offered another site for the project.



WTPL - Luing cattle at WTS Glen Finglas

3.2 Habitat restoration

The sites are owned by Forestry Commission Scotland, RSPB Scotland and Woodland Trust Scotland and have been selected for inclusion in the project because they offer opportunities to create new woodland, expand existing native woods into new areas and/or link fragments of woodland habitat. These are shown in Table 2.

Table 2: Sites and project details

Ref	SITE	HABITAT	PROJECT DETAILS
1	Kinloch <i>Isle of Skye</i> Forestry Commission Scotland	Atlantic oakwoods	Coastal and upland site in the Kinloch Hills, where the project is supporting tree planting along with natural regeneration, quadrupling the native forest area. <i>Project area⁶: 7,384 hectares</i>
2	Abernethy <i>Cairngorms National Park</i> RSPB Scotland	Range of habitats including Caledonian pinewoods, wet woodland, montane scrub and moorland	The nature reserve comprises a range of forest and montane habitats, including the largest remnant of the once extensive Caledonian pine forest. The project is encouraging and hastening natural regeneration and expansion of the forest, linking through to the adjacent estate at Glenmore. <i>Project area: 5,673 hectares</i>
3	Glenmore <i>Cairngorms National Park</i> Forestry Commission Scotland	Predominantly Caledonian pinewoods	Adjacent to Abernethy, Glenmore Forest Park includes native woodland and plantation forest. The focus here is on encouraging regeneration and expansion of the existing woodland, removing non-native species and creating a habitat link to Abernethy. <i>Project area: 1,455 hectares</i>
4	Corrimony <i>Highland</i> RSPB Scotland	Predominantly Caledonian pinewoods and moorland	Expanding the Caledonian pinewoods, and developing open habitat areas notably for the benefit of black grouse, near to the large ancient forest remnant at Glen Affric. <i>Project area: 1,531 hectares</i>
5	Darroch Wids <i>Aberdeenshire plain</i> Forestry Commission Scotland	Mixed woodland	Recreating the ancient forest landscape on former agricultural land at the edge of the Forestry Commission site at Clashindarroch. <i>Project area: 350 hectares</i>
6,7	Drumbow and Crossrigg <i>Scottish Lowlands</i> Forestry Commission Scotland	Mixed woodland	Creating new woodland on former industrial land, damaged by coal mining. <i>Project area: 195 hectares</i>
8	Barclye <i>Southern Uplands</i> RSPB Scotland	Upland birch and oak woodland	The largest remaining area of ancient oak woodland in southern Scotland – the Wood of Cree – is being expanded through regeneration and planting over a former hill farm, ultimately to double the total native woodland area. <i>Project area: 637 hectares</i>
9 10 11	The Glen Devon sites – Glen Quey, Glen Sherup, Geordie's Wood <i>Ochil Hills, Scottish Lowland foothills</i> Woodland Trust Scotland	Upland birch and oak woodland	New woodland is being created on former agricultural land across these 3 linked sites, mainly through planting. <i>Project area: 1,235 hectares</i>
12 13 14	Glen Finglas <i>Loch Lomond and Trossachs National Park</i> Woodland Trust Scotland	Upland birch and oak woodland and woodpasture	The project is restoring woodland and woodpasture across the estate, through planting and natural regeneration. Biodiversity is being encouraged through traditional 'non-intensive' grazing by Luining cattle and a limited number of sheep. <i>Project area: 4,085 hectares</i>
13	Loch Katrine <i>Loch Lomond and Trossachs National Park</i> Forestry Commission Scotland	Range of habitats including oak woodland, Caledonian pine, wet woodland, montane scrub and moorland	Removal of conifers, and a mix of planting and natural regeneration will more than double the existing area of native woodland; pasture woodland and other open forest habitats will also be created. This habitat restoration on the hills above Loch Katrine will help to secure water quality in the Loch, which provides Glasgow's main water supply. <i>Project area: 9,597 hectares</i>
14	Inversnaid <i>Loch Lomond and Trossachs National Park</i> RSPB Scotland	Upland birch and oak woodland and woodpasture	Additional forest habitats are being created on pasture and moorland, expanding an existing area of ancient woodland on the slopes above Loch Lomond. <i>Project area: 467 hectares</i>

3.2.1 Overall achievement

Over the 200 year lifetime of the project, the Alliance members aim to create over 10,800 hectares of new forest habitats, including woodland pasture and other open habitat areas, within a total landscape area of 32,600 hectares, through planting and natural regeneration of over 8m new trees. Already in the first 10 years what has been delivered on the ground is a significant achievement, as shown in Table 3.

Table 3: Progress and long-term goals

Action	Progress to date	Target after 200 years
Total area planted	2,864 ha	8,400 ha of tree cover
Total area where regeneration is established ⁷	838 ha	
Total area prepared for regeneration	1,176 ha	
Trees planted or established by natural regeneration	3.8m trees	8.4m trees

All this makes an important contribution to Scotland's overall targets for native woodland restoration.

3.2.2 Creating new forests

On a number of the Alliance sites, forest restoration has taken place on former agricultural or industrial land, where few or no trees remained.

EXAMPLE: Darroch Wids (site 5, Table 2)

400 hectares of former farmland are being converted to woodland by Forestry Commission Scotland. The area comprises three sites, ranging from partially-grazed grasslands and rough grazing to agricultural and shelter-belt woodlands. This native woodland expansion is taking place on the edge of Clashindarroch Forest, restoring the historic landscape and providing an expanded area for wildlife, as part of a planned habitat network.



FCS - View over FCS Darroch Wids

EXAMPLE: The Glen Devon sites (sites 9, 10 & 11, Table 2)

These Woodland Trust Scotland sites were formerly farmland, heavily grazed by sheep, and left bereft of wildlife. The water courses had suffered from pollution due to intensive grazing, causing a loss of aquatic life. Already the signs of change are occurring as the new woodlands become established – birds of prey have returned to hunt in the area, attracted by the greater diversity of prey available. The local community has responded enthusiastically to this transformation of their landscape, and to improvements to paths affording far greater opportunities for recreation in the area.



WTPL - Young trees at WTS Glen Quiry

EXAMPLE: Drumbow and Crossrig (sites 6 & 7, Table 2)

These two Forestry Commission Scotland sites are in the heart of Scotland's densely populated Central Belt, near Airdrie, an area blighted by years of coal mining. The land was previously farmed, and includes areas of coal spoil tips with some shelter belt woodland. Broadleaf and conifer woodland is being created here, and lowland raised bogs within the forest are being restored. These attract a range of plant and insect life, and the restoration project is providing tangible benefits for local people, who now walk around the site and can enjoy the scenery and wildlife. Visits by local schools make good use of this new resource on their doorstep.



FCS - View from Crossrig Woodland to Hillend Reservoir

3.2.3 Developing habitat networks

The loss of so much native forest in Scotland has resulted in a loss of functioning ecosystems, which would have included a range of habitats such as bogs, mires, pasture and moorland. This has been critical for a number of species, such as the black grouse, which depends on a complex mosaic of habitats, largely lost through intensive agricultural and forestry practices. The Scottish Forest Alliance is recreating habitat networks to support species expansion and greater biodiversity.

EXAMPLE: Abernethy and Glenmore sites in the Cairngorms National Park (sites 2 & 3, Table 2)

The Alliance project lands lie between the two estates, owned by RSPB Scotland and Forestry Commission Scotland. The restoration work will create a forest link between the two estates, and will result in an area of continuous habitat from wet woodland and Caledonian forest up to the tree line and montane areas beyond. These new habitat areas should benefit iconic Caledonian pinewood species like the capercaillie.



Desmond Dugan - Regeneration at Rhyvoan, RSPB Abernethy

EXAMPLE: Creating a mosaic of habitats for black grouse

Habitat restoration at a number of Alliance sites, notably at Corrimony (site 4, Table 2), the Great Trossachs Forest (sites 12, 13 & 14, Table 2) Barclye (site 8, Table 2) and Kinloch (site 1, Table 2), is seeking to reverse the fortunes of this species, which has suffered a catastrophic loss in numbers in the last 20 years. This requires a patchwork of wooded, pasture and moorland areas to meet the birds' complex needs.



Desmond Dugan - Black Grouse lek

EXAMPLE: Connecting to other habitat networks

At Darroch Wids (site 5, Table 2), three former agricultural sites are nodes on a planned habitat network, which extends through the adjacent Forestry Commission land at Clashindarroch Forest.

3.2.4 Landscape-scale forest restoration

The jewel in the crown of the Alliance's forest restoration projects is The Great Trossachs Forest, a project which is just getting under way in the heart of the Loch Lomond and Trossachs National Park. This is a truly landscape-scale initiative.

The site stretches from RSPB Scotland's Inversnaid reserve on the Eastern shores of Loch Lomond across the 9,500 hectare Forestry Commission estate at Loch Katrine, to the ancient hunting forests at Glen Finglas, owned and managed by Woodland Trust Scotland, and beyond (see figure 2). In 200 years, this landscape will be transformed, returning heavily grazed land and plantation forestry to a more natural mix of habitats, including areas of moorland, montane, wetland and pasture.

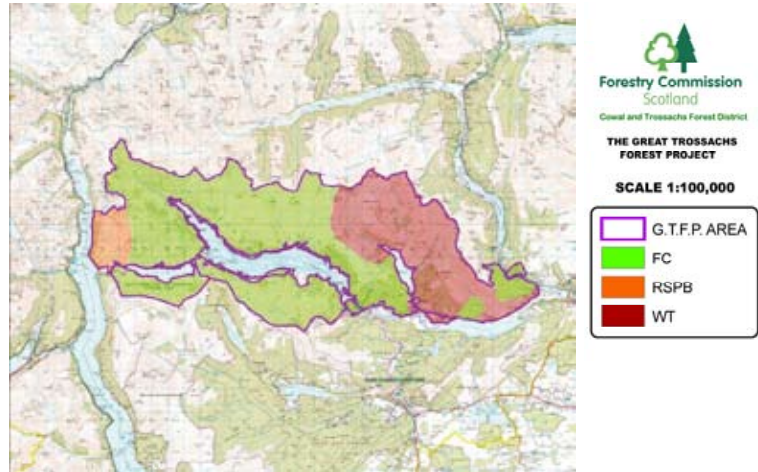
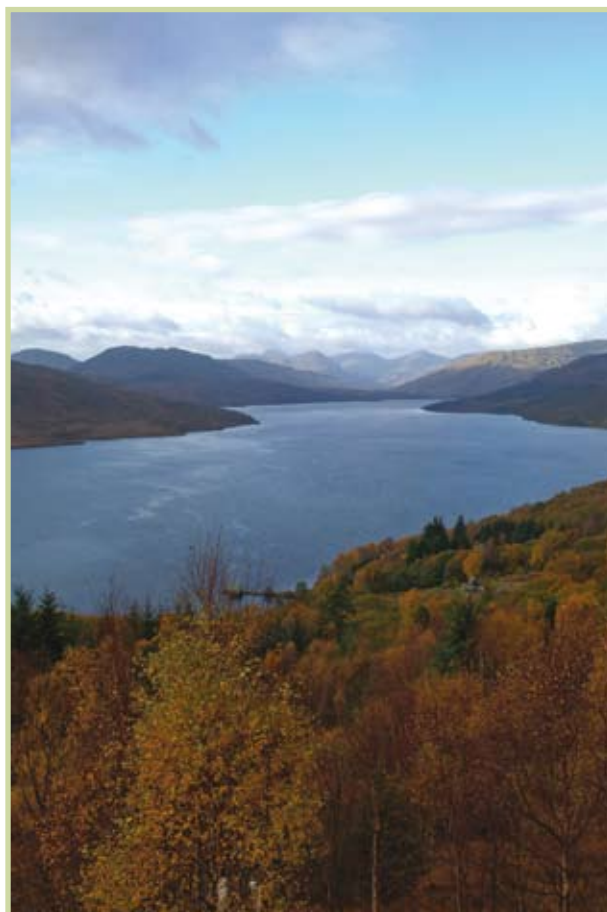


Figure 2. area of the Great Trossachs forest project



FCS - View over Loch Katrine - The Great Trossachs Forest Project

As part of the Alliance's research into biodiversity and the development of forest ecosystems (see further Section 4 below), the Integrated Habitat Management approach is being used across these sites, to provide a strategic framework for creating functioning habitat networks across the Great Trossachs Forest area. It provides a tool to help identify areas which are ecologically connected, targeting management effort on the sites so as to maximize the biodiversity benefits.

4 Site-based research

The superb range of sites and extensive new forest areas created through the Scottish Forest Alliance offer a living laboratory for researchers to find out more about how forest ecosystems develop and how rapidly new forests absorb carbon. The findings from research carried out on these sites will contribute to the vital policy debates currently taking place around climate change mitigation and adaptation, and the potential for carbon sequestration through forestry, including native woodland. The particular importance of this work is in the opportunity to capture data in a consistent way over a 200 year period.

4.1 Biodiversity

Ecologists working for the Scottish Forest Alliance are monitoring species on the sites in order to assess changes in biodiversity as the new woodlands develop, to inform management planning and to allow the Alliance to assess progress in achieving its biodiversity objectives. This monitoring will continue at regular intervals throughout the 200 year lifetime of the project.

The ecologists have developed a range of approaches to assessing woodland biodiversity on the sites. One novel method involves measuring the evidence of activity of individual insects or insect populations, such as galls, leaf miners, leaf rollers and spiders, on a known unit of woodland habitat. It has been called the 'smoking gun' approach because it relies on evidence these creatures leave behind.



Stewart Taylor - Kentish glory caterpillar at RSPB Abernethy

From this, it will be possible to calculate an index of diversity for that habitat unit. By sampling a range of woodlands with different known dates of origin, the researchers believe that it will be possible to identify when, within the growth and development cycle, specific insect species start to colonise and utilise these woodlands. Changes in the diversity index over time will reflect how the woodland has grown and developed, and whether it is healthy and functioning properly. The methodology works on the hypothesis that the amount and diversity of insect life will increase and change in a woodland area as it matures.

The biodiversity work programme also includes developing a strategic approach to planning and management on the sites, to achieve better integration between woodlands and other valued forest habitats, as a means of enhancing biodiversity at the landscape scale.

This work is the subject of a separate and more detailed paper to the Commonwealth Forestry Conference: *Long Term biodiversity planning and monitoring of new native woodlands*⁸.

4.2 Carbon

A primary objective of the Alliance research is to yield information on site specific changes in carbon as woodlands develop. This will be achieved through monitoring which provides robust data to enable changes in carbon stocks in both vegetation and soils to be assessed.

For the first time, because of the 200 year commitment made by the landowners, scientists are able to monitor carbon using a consistent and repeatable methodology over the long-term. This overcomes a major stumbling block in previous research: the lack of 'permanence', because there was no guarantee that land would be retained as forestry, and its potential to absorb carbon could not therefore be assured.

The development of a repeatable sampling and reporting structure for gains in above-ground carbon sequestration, directly attributable to the development of native woodlands across Scottish Forest Alliance sites, will allow permanent and verifiable gains in woodland carbon sequestration over 200 years.

With over 3.4 million new trees on Alliance sites to date, the predicted woodland capture of carbon across the sites is some 377830 tonnes (equivalent to nearly 1.4m tonnes of CO₂) over the first 100 years of the project.

The carbon research work is the subject of a separate and more detailed paper to the Commonwealth Forestry Conference: *Carbon sequestration benefits of new native woodland expansion in Scotland*⁹.

5. Community benefits

For thousands of years Scots have had a close relationship with trees. In the Scottish Highlands, people have lived within the vast native Caledonian pinewood forests, harvesting wood and other forest products for building, food and fuel. With the loss of so much of our tree cover, the nation's relationship with woodland has changed beyond recognition. In rural areas, this means fewer people's lives and jobs depend directly on woodlands and people have lost a vital connection with their ancestral past¹⁰.

By restoring forest ecosystems, the Alliance is improving environmental quality, with all the wider economic and health benefits that implies¹¹. In addition to the ecosystem benefits (providing renewable resources, clean air, clean water, greater species diversity), the Alliance contributes to local communities in a variety of ways – by supporting local jobs, creating new access paths, organising events and providing educational opportunities for children. As the new woodlands develop, there will be greater opportunities for communities to benefit – through use of forest resources, educational initiatives and recreation, as well as from improved water and environmental quality.

A brief overview of some of the community benefits of these forest restoration projects is given here. This aspect of the Alliance's work is the subject of a separate and more detailed paper to the Commonwealth Forestry Conference: *Restoring the connections: people and forests*¹².

9 M. P. Perks, L. Nagy, P. Meir, M. Auld, M. Wood, N. Atkinson, L. Staples-Scott, G. Harvey, W. McGhee, R. Tipper
10 Native woodlands of Scotland, Forestry Commission 1998
11 Nature and sustainable growth – Investing in Scotland's natural heritage, RSPB 2008
12 E. Shortall

5.1 Sustaining rural jobs

Across all 14 sites, the Scottish Forest Alliance is making a real contribution to sustaining jobs in rural areas. To date the Alliance has supported the equivalent of 275 full-time jobs across the 14 sites (60,600 man days). Work undertaken ranges from clearing non-native species from woodlands, planting and other land management, to building paths and bridges, planning and reporting on progress, monitoring of species diversity and soil sampling on the sites, engaging with visitors and organising events, educational and volunteering activities. Over 4,900 volunteer days have been worked on the sites since the start of the project, offering people opportunities to develop new skills and to be part of the transformation of their landscape.

EXAMPLE: Tree nurseries on Skye

Schoolchildren, their parents and local small business growers have been involved in a number of tree nursery projects for the Kinloch site. Tree planting has been staged to allow five neighbouring nurseries time to grow trees for the project from locally gathered seed. Two of these nurseries were already established, and three additional croft-based businesses were supported and developed as a direct result of the project, their owners diversifying their traditional crofting activities into horticulture with the aid of funding through the Alliance project. The project also linked up with four local primary schools, each of which established a small tree nursery. The children were mentored by parents who were similarly trained in sowing, growing and nurturing techniques.



Chris Marsh/FCS - training at tree nursery, Skye

5.2 Encouraging access and enjoyment

In total so far, the sites have attracted over 3/4 million visitors, each of whom has a chance to see forest restoration at first hand, and to find out more about why it is so important and how it can be achieved. A significant tranche of the funding and effort has gone into creating new access paths: in total some 60km of new paths have been created, with a total of 146km of paths and tracks accessible across the project area. Most of the sites offer guided walks and interpreted trails.



Felicity Martin - Sowing wildflower seeds at WTS Geordie's Wood

EXAMPLE: involving people at the sites

New areas of woodland being created through the Scottish Forest Alliance can reconnect people with woodlands, and with an essential part of their social and cultural heritage. The three sites at Glen Devon in the Ochils are within an hour's drive of Edinburgh and the transformation taking place there is clear for all to see. Local people have really bought into what is going on at these sites - even on a horrendously wet and windy day, 120 local people turned out to help plant trees at Glen Quey; and a network of paths linking all three sites attracts over 9,000 people each year.

5.3 Involving young people

The Alliance organisations firmly believe that involving young people, and giving them an opportunity to experience native woods and to play a part in creating them, is the way to secure the future of our forests. A range of activities at Alliance sites are designed specifically to offer such opportunities for young people.

EXAMPLE: tree planting events

Local school children and BP staff at the Darroch Wids site broke a Guinness World Record by planting 18,124 trees in just 40 minutes!

EXAMPLE: Field teaching

Sadly many schoolchildren in Scotland today have very few opportunities to experience the natural world at first hand. The Alliance is offering opportunities to school groups to go out into the woods and find out for themselves, beyond the classroom.



FCS - Guinness World Record planting event

5.4 Testing new approaches

A range of events, guided walks, team challenges and other activities have taken place across the Alliance sites over the last 10 years to test novel ways of engaging people with the new woodlands. These include using arts projects as a way of reaching out to people.

EXAMPLE: Theatre project

When work began at the Alliance's Darroch Wids site, there was a job to be done to explain to the local community why agricultural land was being turned over to woodland adjacent to an already significant sized forest. To try to get this message across in an innovative way, a play was commissioned, condensing hundreds of years of history into 15 minutes, with posters and costumes created by local school children, and the play itself staged in a building in the middle of the forest.



FCS - Theatre performance at Darroch Wids

5.5 Reaching out to urban communities

It is tragic to think just how many people, especially those living in densely populated areas, may never have experienced standing in a native forest, hearing the sounds of wind in the leaves and wildlife in the branches. There will not be widespread support for forest regeneration unless these people have opportunities to experience what their ancestors took for granted.

EXAMPLE: Providing for recreation on the urban fringe

Drumbow and Crossrig (sites 6 & 7, Table 2) are on the periphery of some of Scotland's most blighted urban areas, where the environment is damaged by years of coal mining, and communities suffer from long-term unemployment following closure of the mines. The project is helping to transform a blighted landscape and provide a resource for local people – a place where they can go and, perhaps for the first time, see the wonder of the natural world – dragonflies, damselflies, orchids and a host of other species attracted to the restored habitat areas.

The Alliance has a great opportunity with the Great Trossachs Forest, on the shores of Loch Katrine, to draw people from the Glasgow conurbation – within an hour's travelling distance – to regain lost experiences of native woodlands.

6. Lessons learned

With such a complex project, operating across a wide geographical area and a total of 14 sites, there are bound to be stumbling blocks from time to time. However, with a clear vision, and a focus on action, these have been overcome. There are a number of specific factors which have been key to the success of the project so far.



Chris Marsh - FCS Kinloch Hills, Isle of Skye

6.1 Buy-in at the highest level

The top person in each organisation, right up to BP's then group Chief Executive Lord Browne, were involved and made a commitment to see it through. This also gave the organisations an incentive and the confidence to work through any problems and find solutions.

6.2 A robust framework and clear goals

The Steering Group has played a vital role in keeping the programme on track and ensuring it meets its objectives. The two 'independent' individuals invited to sit on the Group have ensured that there were voices within the group which did not have a vested interest in the outcome, and who could ensure that the project did not drift away from its original purpose. The other governance structures – such as reporting requirements and specialist sub-groups – have helped to ensure that the Alliance can deliver across all of its objectives.

6.3 Flexibility and responding to change

Not everything can be anticipated at the outset of such a complex project. The governance structures and effective team working which underpin the project meant the Alliance was able to adapt to changing circumstances: for example, in recognizing the need for specialist work groups and to link these more closely to the Steering Group through a system of mentoring.

At the outset, the focus was on identifying how the ambitious programme of forest restoration could be achieved. The precise objectives of, and approach to, the planned research were less well defined. This required input from experts within the organisations. The issue was debated and a direction evolved through the discussions. The Alliance members have now agreed that they wish this research to continue for the remainder of the 200 years, and are in the process of setting up a mechanism by which this ongoing work can continue and be funded, beyond the initial 10 year funding period to which BP committed at the start. That funding period itself has been extended to 13 years.

This flexibility in responding to issues and circumstances as they arose has been made possible by the strength of the project governance structures and the trust built up over time among the individuals and organisations involved.

6.4 It takes time to build trust

Almost all of the members of the Steering Group who were involved in the original discussions dating back to 1996, and in setting up the Alliance, are still involved more than 10 years later. The commitment of these individuals has been hugely important in building trust between the different organisations. Personalities have also been important; and it was critical that these individuals all had sufficient influence within their own organisations to make things happen. The trust between the partners, and their emphasis on action rather than words, have been a vital ingredient in the project's success.

6.5 The value of long-term funding

Many projects are beset with the problems associated with short-term funding: the inability to plan ahead, the difficulties in attracting match-funding because future finances are not secure. It is a familiar story across the public and voluntary sectors. A key achievement of the Scottish Forest Alliance has been to break this cycle: to give the organisations the confidence to plan ahead by making funding available for work which would be carried out over a number of years. The focus was on the outcomes – how much land would be given over to new forest, how many trees would be planted – rather than the process.

6.6 The rewards of joint working

Joint working has been needed at every stage of project planning and delivery. The Alliance organisations all have distinct cultures. Ways of working across the public, private and voluntary sectors can be very different. To achieve effective joint working amongst the 40 or so staff across all four Alliance members has required a significant investment of time, thought and effort. Furthermore, all four organisations believe they have learned from the experience and are able to apply this in other partnership projects they are involved in.

6.7 Actions talk louder

In the end, it is what has been achieved on the ground – the emergence of new forests – and the prospect of what will be achieved after 200 years, which demonstrates the value of the Alliance. The new forest habitats will support some of our rarest species – from the narrow-headed wood ant, twinflower and pearl-bordered fritillary to the black grouse and capercaillie – helping them and others adapt to the pressures of climate change and habitat loss.



FCS - Tree planting at Darroch Wids

7. The future

At an event held in 2009 to celebrate the launch of The Great Trossachs Forest – creating a new native forest area on an unprecedented scale in Scotland – the Environment Minister observed that the Scottish Forest Alliance offers a very strong model for projects which are about delivering real change on the ground through partnership working across the public, private and voluntary sectors.

The Alliance will deliver a 32,600 hectare forest landscape, rich in wildlife, for future generations to live, work in and enjoy. The future of these sites is secured for 200 years, and a trust is being set up to ensure that the Alliance organisations continue to work together throughout the project lifetime. The restored ecosystems will offer a resource far richer and more valuable than what preceded them, the full benefits of which will only be realised beyond our lifetimes.

Steven and Carlisle, the forefathers of native pinewood conservation in Scotland, famously said of Scotland's ancient woods: "to stand in them is to feel the past"¹³. At the 14 Scottish Forest Alliance sites, the landscape is being transformed over the next 200 years. The benefits of this forest restoration – for woodlands, wildlife, and people – are only just beginning to be realised. To see these new woods emerging is to see what can be achieved: "To stand in them is to feel the future".



FCS - Loch Katrine - The Great Trossachs Forest Project