



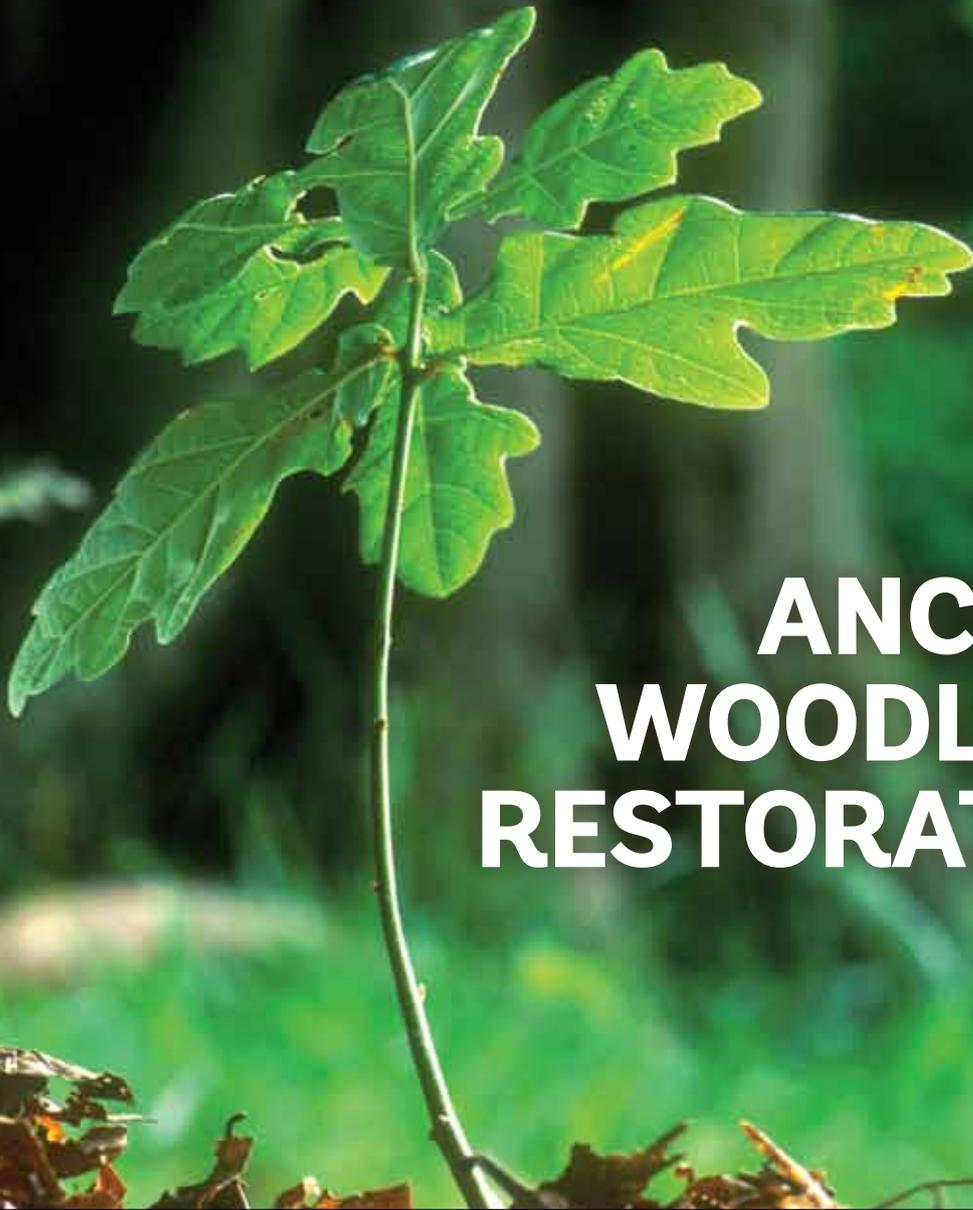
WOODLAND
TRUST

Wood Wise

Woodland Conservation News • Summer 2015

EA JAMES

Naturally regenerating oak sapling



ANCIENT WOODLAND RESTORATION

COMMUNITY
SET TO
RESTORE AND
PROSPER

BLENDING
COMMERCE
AND
CONSERVATION

LONG-TERM
VISION FOR
RESILIENT
FORESTRY

INSPIRING
AND
KNOWLEDGE
GATHERING

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Clanger Wood showing plantation and ancient woodland

Ancient Woodland Restoration

Ancient woodland is irreplaceable, yet it covers just two per cent of the UK and around half has been affected by the planting of introduced species like non-native conifers and invasive woody species like rhododendron. Bringing these sites into restoration can secure their ecological value and, over time, enhance it.

A healthy ancient wood provides a stronghold for hundreds of species. It is defined as an area that has been continuously wooded since at least 1600 in England and Wales, and 1750 in Scotland. These dates are due to the oldest, most reliable map evidence we have, but these woods may really be many thousands of years

old and link back to the vast ‘wildwood’ that grew up after the end of the last ice age.

An ancient wood can be an intricate matrix of habitats, with diverse structures, differing ages of trees and a complexity that only develops over extended periods of time. These woods display a rich variety, from the Caledonian pine forests in Scotland to the beech woods in south east England.

Transformations

Many ancient woods were felled after the First and Second World Wars in order to ensure a strategic timber reserve for the future.

Through the 1950s and 60s many of these sites were replanted, some with broadleaves including natives, but many with non-native conifers. The biodiversity of the woods has been negatively affected by year-round shading from closely-planted stands, damage from the process of felling, drainage and replanting, and acidification from the dropped conifer needles.

At the moment there is a window for change, with many softwood plantations reaching their final age of felling. If these sites, and there are tens of thousands of hectares (ha) identified, can be put into a gradual process of restoration, they can be secured as reservoirs of biodiversity for the future. These woods can also contain culturally significant archaeology, such as charcoal kilns or ironworks.

Prime restoration prospects

Many of these sites still have remnant features that provide the building blocks for restoration. Native trees may have endured along woodland edges, between different species stands and in those areas hard to fell and plant, such as along watercourses or very steep slopes. There can also be veteran trees surviving or coppice regeneration from old stumps.

It is in these areas that more light enters the wood, there is a less dense, acidic needle carpet and more ground flora survives. Many of these are specialist plants that are closely associated with ancient woodland, due to their poor dispersal rates and adaptation to particular woodland conditions. Manipulating light levels by gradual thinning can allow natural regeneration of native trees and spread of ground flora.



View over Fingle Wood, ready for restoration

Soils mean life

Soil is one of the most important features of an ancient wood. Its evolution over hundreds, if not thousands, of years has resulted in vast fungal mycelial networks that recycle and transport nutrients around the wood and support the trees and plants. Together with the multitude of invertebrates and bacteria, the ancient woodland soil system is the essential base for the whole ecosystem and much about it is still unknown.

If ancient woods are cleared and ploughed for farming or built on, this rich soil life is lost and so too the processes they support. In the case of plantations on ancient woods, the native trees may have been clear-felled, but the land remained wooded as it was replanted. This preserves soil biodiversity, enabling restoration and helping natural processes return far quicker than in secondary woodland, whose soils are likely to have been heavily disturbed or do not contain the right species of fungi or bacteria.

Restoration project

The Woodland Trust has worked on ancient woodland restoration for many years (bringing into restoration all its own plantations on

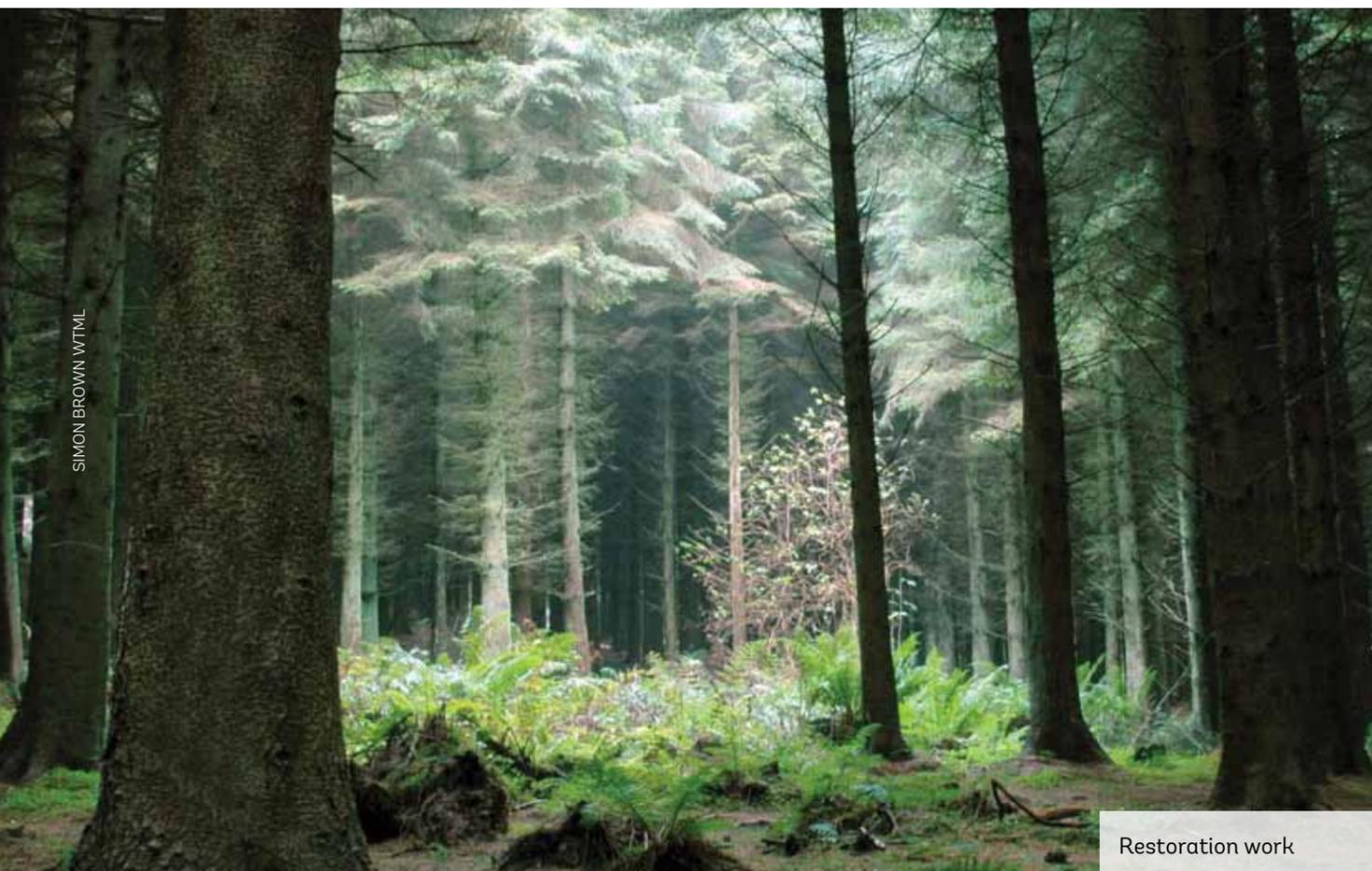
ancient woodland sites, which cover just over 13 per cent of the estate), and is currently working with landowners across the UK as part of an innovative £2.9 million Heritage Lottery Fund project.

Launched in 2013, its aims are to:

- Support more than 1,000 landowners and managers in restoring their woods.
- Assess 23,000 ha of ancient woodland in urgent need of help.
- Bring at least 10,000 ha into a programme of restoration.

Striking a balance

Timber is an important resource. Many ancient woods only survived in centuries past because of the value of the timber and other products they yielded, and markets today are geared up for softwoods. However, ancient woodland is a finite, irreplaceable resource, and if we are to ensure dynamic, functioning ecosystems for the future we need to protect our key reservoirs of biodiversity. Finding a balance between nature conservation and forestry is the key, and many of the following case studies are great examples of this.



Restoration work



Curley oak

1880 larger coniferised areas were recorded in the first edition Ordnance Survey maps. However, the biggest losses of native woodland came during the First World War, when trees were felled to help build the trenches, and the Second World War. By the end of the 1960s Wentwood was dominated by conifers.

Despite this the wood remains fairly high in biodiversity. Due mostly to its sheer size and complexity of stand types, with natural regeneration and ancient woodland ground flora surviving best under the stands of planted larch, which is unusual in being a deciduous conifer. This allows more light down to the forest floor than, for example, Norway spruce which heavily shades the understorey year round and severely reduces the species that can grow beneath it.

The majority of ancient woodland remnants at Wentwood are ground flora, such as bluebells, *Hyacinthoides non-scripta*. There are few seed-bearing native trees remaining, mainly birch, *Betula* sp., with some oak, *Quercus* sp., and ash, *Fraxinus excelsior*, and these are mostly found along the ride edges. Ideally these encroached rides would be scalloped and widened to



Firecrest

Restoring Welsh heritage

One of the largest remaining blocks of ancient woodland in Wales is being restored to native woodland.

Wentwood was once a hunting preserve of Chepstow Castle and part of an ancient wood that stretched from the River Wye to the River Usk. Today it covers 1,300 ha and much of it is planted with non-native conifers, mostly Japanese larch, *Larix kaempferi*, Norway spruce, *Picea abies*, and Douglas fir, *Pseudotsuga menziesii*.

The Woodland Trust bought 352 ha of Wentwood in 2006 with an aim to restore the wood to broadleaves by thinning the conifers as a commercial operation. It is hoped that there will be ongoing commercial opportunities in the long term with the hardwoods. The rest is mostly owned by Natural Resources Wales, with a small section in private ownership.

Loss over time

In the 1700s, Wentwood saw some of the first non-native conifers planted for commercial use in the UK, albeit on a relatively small scale. By

increase structural diversity, but at present this would remove too much of what little native seed source remains.

The sole veteran oak, *Quercus robur*, on site has a huge trunk diameter and is known as the Curley Oak. But due to heavy shading and old age, most of this is now rotting deadwood (which is also lacking on site), and just a thin sliver of life remains on one side with a tiny leafed crown. Within the decaying trunk the endangered oak polypore, *Buglossoporus pulvinus*, fungus can be found – a rare, protected Schedule 8 species.

Practical management

The first actions the Woodland Trust undertook were to carry out emergency halo thinning around surviving broadleaved tree remnants and start thinning the mid- to late-rotation conifer crops throughout the site. Thinning was mostly carried out using a harvester, and 20-25 per cent of the basal area was removed to allow more light into the woodland and aid crown development – and most crucially to start transformation



Foxglove



Goshawk

to broadleaved woodland by initiating seed germination. A second thinning was carried out five years later. Priority thinning reduces the critical threat to streams and surviving and remnant features, such as coppice stools, from excessive shade.

Monitoring activity has been carried out since the thinning work began, with permanent vegetation transects throughout the site, and more intensively in designated demonstration zones and fixed-point photography. Timber volumes and financial costs/incomes are also recorded for each year's thinning operation; this data supports the demonstration areas.

Careful haloing was carried out around the veteran oak to increase the level of light reaching it. The hope is this will improve its overall health and enable it to survive and strengthen. But care was taken to make sure enough trees remained to provide an effective barrier around it to prevent wind blow and excessive sun exposure.

Each year around 3,000 tonnes of timber are removed from Wentwood. It is all non-native conifer planted in the mid-20th century that is approaching its peak in commercial value, and therefore creates a profitable operation at this early transformation stage.

One challenge might be maintaining a stream of income beyond this period. This may come from hardwoods and larger dimension conifers in a wood that will more closely mimic a natural woodland ecosystem; working 'with nature' to create mixed tree species communities and a more diverse structure than the current single-aged monoculture stands.

Disease measures

Of all non-native conifers, larch offers ground flora some of the best conditions for survival. However, being on the wetter west of Britain, Wentwood's larch was an ideal host for the fungus-like pathogen *Phytophthora ramorum*. Once identified on site a plant health notice was served, which required the felling of infected trees.

The Woodland Trust's restoration approach is to rescue the surviving elements of the ancient woodland ecosystem and allow them to recover. This is done by gradually reducing the level of introduced species through careful thinning and maintaining the woodland environment to which they are adapted. The aim at Wentwood was to slowly thin out the conifer stands, manipulating light levels within

the wood to encourage ground flora to spread and allow the natural process of native tree regeneration to start. Crucially, light levels need to be constrained to a level whereby coarse competitive vegetation, like bracken and bramble, cannot dominate.

Clear-felling large areas of larch due to disease therefore posed a problem. The Trust opted to actively plant these areas with a variety of species, including groupings of oak and wild cherry, *Prunus avium*, for future commercial timber use. Survival rates of saplings are high and the diverse ground flora is yet to be swamped by aggressive bracken or bramble. This year there is a wonderful abundance of foxgloves, *Digitalis purpurea*, bringing flashes of colour across the cleared areas.

Biodiversity value

Among the species supported by Wentwood is a population of threatened hazel dormice, *Muscardinus avellanarius*, adders, *Vipera berus*, and a number of bats. A range of birds have been recorded there, including red-listed species like willow tit, *Poecile montanus*, and hawfinch, *Coccothraustes coccothraustes*, and the Schedule 1 listed goshawk, *Accipiter gentilis*. There are also active firecrest, *Regulus ignicapillus*, surveys being carried out, where the Trust is working with a local ornithological society – 20 pairs have been recorded in 2015. The deer on site are a serious problem to natural regeneration, so their numbers are being actively monitored and reduced through culling; this is carried out by Natural Resources Wales as part of a successful joint partnership.

Restoration is a long transition process, but its ultimate aim is to support and increase biodiversity. The UK's wildlife is struggling and localised losses continue to occur, and unless we do more to restore health to our natural environments, these losses will become national and perhaps global. Ancient woodland restoration is a key tool in creating robust, resilient landscapes, and Wentwood is set to become one of its success stories, marrying conservation and forestry.

Community forest pride

In Scotland there is a strong drive towards reforming land ownership, so local people have more control over the area they live in. At Aigas community ownership also offers the opportunity for ancient woodland restoration.

Once a famous old-growth Caledonian pine forest in Inverness-shire, Aigas' prime trees were largely felled during the First and Second World Wars to help supply the country's huge timber demands. Prior to this there was some active planting carried out in the 1700s, and there is evidence of it being actively managed formal woodland in the 1750s.

Man-made features of interest include an extensive network of paths, largely overgrown and in need of repair, and a stone arched bridge. There was also once a summer house with excellent views of the gorge sparsely covered in gnarled, twisted oaks, *Quercus petraea*, clinging to the rock face, but there are no remains.

Following the clear-felling in the early twentieth century, the Forestry Commission planted up

the most accessible parts of the site in the 1960s with commercial, close-set rows of Scots pine, *Pinus sylvestris*, and exotic conifers, such as Japanese larch, *Larix kaempferi*, Norway spruce, *Picea abies*, and Sitka spruce, *Picea sitchensis*. However, due to access issues, it has been largely neglected over the last 20 years.

Community ownership

Forestry Commission Scotland (FCS) is currently selling off smaller, less manageable and less profitable areas of its estate. In the first instance these are offered to local communities to buy, then non-governmental organisations, and finally put up for public sale if neither of the first two options are successful.

The Scottish Government is helping communities buy land through the Scottish Land Fund (SLF). By providing practical support and funding, the SLF aims to make rural communities more resilient and sustainable through the ownership and management of land and land assets. Funded by the Scottish Government, it is being delivered in partnership by the Highlands and Islands Enterprise and the Big Lottery Fund.



Larch clearing



Aigas community consultation walk

Aigas Forest has a strong community around it who were keen to take up the challenge of owning and managing the site. The acquisition process started in 2009, but was not completed until 5th March 2015 – following six years of planning and fundraising. The Scottish Government is working to make this process faster and more streamlined.

The community has been actively engaged from the beginning. At an open day to discuss the acquisition there were a great many children, as the local area has two primary schools - rare for such a rural community. They may well take up the mantle of managing Aigas in the future and should be well prepared having been connected and involved at such a young age.

One problem for FCS was lack of access to Aigas to manage and remove timber. But this is likely to be less of an issue for the local community as residents and surrounding landowners are actively engaged in the community buy out.

Conservation and commerce

The funding raised has paid for a two-year Local Development Officer post as well as the land itself. Donnie Chisholm is working to develop a management plan for the site. Part of this is to develop a long-term sustainable social enterprise that will bring money into the community and fund a more permanent post.

Steve Morris is an Ancient Woodland Restoration Officer for the Highlands. He is based with the Rural Development Initiatives Associates, partners in the Woodland Trust's Heritage Lottery Funded ancient woodland restoration project. Donnie attended one of Steve's landowner engagement events and was keen to engage Aigas in a process of restoration, with the dual goals of conservation and commerce.



Scots pines in snow



Heather

Over the last six months Steve has carried out surveys of the woodland to feed into the forest plan, information that will also help with funding bids. Although the site is dominated by unthinned, dark, plantation forestry, there are pockets of native woodland ground flora remaining, such as wood sorrel, *Oxalis acetosella*, bluebells, *Hyacinthoides non-scripta*, and dog's mercury, *Mercurialis perennis*, with blaeberry, *Vaccinium myrtillus*, and heather, *Calluna vulgaris*, in the pine areas.

A number of native trees are also surviving. In the gorge section the stunted, old oaks have survived due to sheer inaccessibility on the steep cliff sides. Other trees include aspen, *Populus tremula*, birch, *Betula* sp., a small number of ash, *Fraxinus excelsior*, and planted beech, *Fagus sylvatica*.

Restoring the heritage

Where possible, restoration will be carried out using a continuous cover forestry regime and allowing natural regeneration from the available seed source. The mature conifers will be thinned, and as they are mostly of a good size and quality they are therefore commercially valuable for the community. There is a range of woodland types within the forest and some clearfelling is inevitable due to the terrain and lack of previous thinning. In most instances these will be restocked with native species.

Although the majority of the native Scots pines on site were actively planted, some have distinct characteristics and can be managed to develop a more open, classic granny pine shape, more in keeping with the traditional Caledonian

pine style. Improving the structural, age and species diversity of the forest will also benefit the population of red squirrels, *Sciurus vulgaris*, inhabiting it.

Some experimental work is also planned at Aigas. For example, the neglected Douglas fir trees, *Pseudotsuga menziesii*, will be harder to manage as they are overdue for thinning, so have grown up too thin through lack of space to spread and increase their trunk girth. They are therefore more prone to wind blow. The idea is to use a precautionary principle to thin the crop and see how it does. However, it will have to be

carefully monitored.

Aigas' vision

The long-term goal of the community, who can all see the forest from their homes, is to create a thriving wood, balancing the needs of wildlife and local people. They hope to provide a home for a diverse range of flora and fauna, and a place for human enjoyment, while producing an income to reinvest in the forest and support activity in the wider glen. It is an ambitious plan, but one the whole community is committed to delivering.



Nicola Sturgeon visit to Aigas

Building commercial resilience

Commercial forestry has suffered a number of blows in recent years, but one estate has a long-term vision to future-proof itself.

The home of the Duke of Abercorn's family since 1612, Baronscourt Estate covers 2,200 hectares (ha) at the foothills of the Sperrin Mountains in County Tyrone, Northern Ireland. The estate's commercial forestry operation reportedly goes back to the 1800s and is managed in-hand by the Estate's forestry department.

Most of the roughly 1,600 ha woodland consists of non-native conifers, the main crop being Sitka spruce, *Picea sitchensis*. Other species include Norway spruce, *Picea abies*, western hemlock, *Tsuga heterophylla*, Douglas fir, *Pseudotsuga menziesii*, and Japanese larch, *Larix kaempferi*.

However, there are a growing number of mixed-species areas as well, with broadleaf trees including oak, *Quercus* sp., birch, *Betula* sp., ash, *Fraxinus excelsior*, rowan, *Sorbus aucuparia*, and alder, *Alnus glutinosa*. Mixed-species stands make up only 10 per cent of the estate at the moment, but this is increasing.

From clear-fell to CCF

In recent years the estate has been transforming its forestry operations. Previously the focus was the production of single-stand coniferous crops that were periodically clear-felled. However, since 2001 Baronscourt has been converting its existing forest, where suitable, to mixed-species continuous cover forestry (CCF).

In 1921 more than 800 ha of the estate was transferred on a 150-year lease to the then Forestry Commission, now the Northern Ireland Forest Service. Following a renegotiation of this agreement there is now a staggered hand back of the land. This means that, as the Northern Ireland Forest Service fells its current crops of trees, so the land

is returned to Baronscourt Estate. The last stand is due to be felled around 2024, allowing the estate to implement multi-species CCF across the vast majority of its forest resource.

Conifers will still be planted, but interspersed among hardwoods. Due to the risk posed by *Phytophthora ramorum* no further larch is being planted on the estate. Reducing the risk from pests and diseases is one of the key reasons for adopting CCF. In addition, maintaining a permanent canopy reduces the rate of water run-off, thereby reducing the risk of flooding in the locality.

Focus on resilience

The move towards a multi-species and multi-age forest structure will make the estate's wooded areas more resilient to change. Single species plantations are much more vulnerable to pests and diseases. For example, *Phytophthora ramorum* can wipe out whole stands of larch and has had huge negative impacts on some foresters' livelihoods and woodland owners' returns. By having a diverse range of species the chances of losing whole areas of woodland are greatly reduced. The wider mix of species will also open up more commercial markets.

The further along the path of CCF they travel the more benefits they see, including improving stand stability. It also has a much less damaging impact on wildlife, as clear-felling destroys large areas of habitat and forces species to move to survive.

In general, the CCF system stabilises the forest. Through the increase in species mix, age and the retention of pockets of mature and over-mature trees, biodiversity levels will increase within the forest. This in turn greatly increases the forest's ability to withstand extremes of nature, including gale force winds, pests and diseases, and the challenges brought on by climate change.

Wildlife and awards

Red squirrels, *Sciurus vulgaris*, are fairly abundant at Baronscourt. They are largely found in most of the conifer woods of seed producing age. As areas



Baronscourt Estate



Red squirrel



Japanese larch

are thinned and larger trees develop, the squirrels should spread out further towards the edge of the Estate.

Hardwoods, especially large-seeded trees such as oak, are unfortunately the habitat of choice for grey squirrels, *Sciurus carolinensis*. Long-term increases in large-seeded hardwoods will increase the greys' potential to spread – at present they are limited to the valley bottom. However, the estate is proactive in trying to remove the threat of the grey squirrel through culling, to protect the red squirrel and forestry interests.

The transition in management should also benefit the population of sika deer, *Cervus Nippon*, on

the estate. Sales of top-quality venison are an important income source for Baronscourt and the deer population is actively managed. Shooting is also offered and a more diverse forest structure will benefit the game species there.

In recognition of their efforts towards forestry and conservation management, Baronscourt was awarded the Royal Forestry Society's 'Duke of Cornwall's Award' in 2003. This long-term commitment to transform to CCF will take decades to achieve, but the advantages this type of management offers the estate, its wildlife and the wider landscape justify the higher degree of sivilcultural management effort than would be required by the alternative clear-felling regime.

Amateur enthusiasts

Managing and restoring woodland not only brings conservation or commercial gains, it can simply be a wonderful way to relax in nature and heat your home.

Once part of the neighbouring Rademon Estate, Peggs Wood is a 3.5 hectare ancient woodland near the village of Crossgar, County Down. After the Second World War most of the old broadleaved trees were stripped out and replaced with beech, *Fagus sylvatica*, and larch, *Larix* sp., plantations.

A new lease of life

In 2004, amateur enthusiasts Keith and June Henning bought Peggs Wood for personal interest and enjoyment. They loved the red squirrels and birds, and found it a relaxing haven from the stresses of their daily lives as professional chefs. Then the Woodland Trust's Michael Topping, a restoration expert, spoke to them about returning



Wild garlic

the wood to its former glory.

The site was identified as ancient through old maps (it was previously part of the Rademon Estate), but it also contains a variety of historic features. Old oak, *Quercus robur*, coppice stools can be found within the woodland, along with a man-made ditch along the north-western boundary and an old coach road that runs through the south-east end.

Like other plantations on ancient woodland sites, remnant species survived despite historic felling and replanting. Along the stream, bluebells, *Hyacinthoides non-scripta*, wood sorrel, *Oxalis acetosella*, wild garlic, *Allium ursinum*, wood anemone, *Anemone nemorosa*, and greater wood rush, *Luzula sylvatica*, continued to grow. These indicator plants were further evidence that Peggs Wood was ancient and could be restored.

Reviving the natives

The regenerating old oak stumps were struggling for light among the densely planted beech, *Fagus sylvatica*, and larch. As they had been drawn up tall and thin, Michael advised gradually halo-thinning around the oaks to allow them more light and space to grow, while still providing protection

from the wind and preventing them being blown over in their weakened state.

As the oaks strengthen more of the beech and larch will be removed and other species will be allowed to naturally regenerate. Allowing more light into the wood will also enable the woodland ground flora to spread back into the wood rather than clinging to the edges. There has already been a noticeable increase in wood anemones, wild garlic and bluebells.

Keith Henning says "Buying a wood was one of the best things that ever happened to me. The wood we take out fuels my log burner and my mother-in-law's too. It's solely for personal use; it's not a business, and all the branches we leave behind for wildlife. I'm learning all the time."

Supporting third-party restoration

In Cumbria an innovative grant project is enabling landowners to restore their woods.

The Woodland Trust's ancient woodland restoration project in Cumbria started in 2010, following two years of planning and negotiations with partners Cumbria Woodlands, WREN and Cumbrian woodland owners. This ground-breaking project pays landowners a grant (from landfill tax funds) to restore plantations on ancient woodland sites. After taking other forestry grant income and timber sales into account, the contribution ensures this valuable work can be carried out in a cost-neutral way and do so much for biodiversity in the county.



Bluebells



Great Knott Wood, remnant natives

Engaging and restoring

The project has engaged over 20 woodland owners (including the Woodland Trust) and 37 different individual woods.

The target to get 1,000 hectares (ha) of degraded ancient woodland into restoration has successfully been achieved and important bridges built with landowners in the local area. It has also contributed to the local rural economy through the production of timber and woodfuel, and providing work for contractors with half a million pounds of capital works.

The practical restoration work has involved a variety of different activities:

- General thinning works
- Uneconomic thinning of challenging sites
- Removing invasive conifer regeneration
- Halo-thinning around native veteran trees and important biodiversity hotspots
- Clearing invasive non-native species
- Horse logging

The Cumbria project finished in July 2015 and has achieved so much. The 37 woods are now in restoration management, but the whole process will carry on far beyond the five-year lifespan of the project. All the landowners are dedicated to continuing the important restoration work that has been started and the Trust has pointed the way to the sustainable management of Cumbria's natural heritage. Already biodiversity has increased in the woods and valuable lessons learnt to take forward into other regions.

Challenging but rewarding

There have been many challenges along the way though. For example, working with such a large number of third-party landowners on one project has been complex. Many of the woods either changed ownership or manager over the course of the project. There have also been major changes



View over Lake Windermere

to the forestry grant system and timber market volatility, resulting in a constantly changing project environment that has kept manager Peter Lowe on his toes.

Here is a flavour of the work being carried out around Windermere in five of the 37 ancient woods in the project:

- 1. Boat House Wood – Graythwaite Estate**
Clearance of the rhododendron, *Rhododendron* sp., and thinning of the spruce, *Picea* sp., within the wood helped uncover a group of rare whitebeam, *Sorbus* sp., trees growing from a rocky crag, and began the re-establishment of native ground flora.
- 2. Great Knott Wood – Woodland Trust**
The wood is now much more varied and attractive. The bluebells, *Hyacinthoides non-scripta*, have started to return, ancient yews, *Taxus baccata*, have been haloed around and are growing in strength, and some charcoal industry heritage has been uncovered.
- 3. Highloft Wood – Mike Cavanagh**
Removal of the young western hemlock, *Tsuga heterophylla*, and thinning of birch, *Betula* sp., is restoring biodiversity and providing a future source of firewood for the owner.
- 4. Scarhead Wood – Paul and Kitty Martin**
Wind blow has been a constant challenge on this site, but thinning continues and local firm Lakeland Biomass is using the low quality timber to produce wood pellets for the

Cumbrian woodfuel market.

5. Rydal Woods – Rydal estate and Hart Head Farm

Large-scale clearance of rhododendron from the ancient woodland and wood pasture has saved surviving ancient woodland remnants and links with a large woodland creation project on Rydal common to form an exciting example of landscape-scale woodland improvement.

Scoping the future

There are a range of new challenges now facing ancient woodland restoration, along with the rest of the woodland sector. The recent spread of new tree diseases like Chlora dieback of ash, *Hymenoscyphus fraxineus*, and *Phytophthora ramorum* on larch, along with the likely impacts of climate change, will no doubt affect and alter restoration practice as we adapt to new realities.

It should also be kept in mind that restoration takes ancient woodland on a new trajectory. While we cannot go back to the past, we must develop these woods in ways that capitalise on the biodiversity we still have, and amplify it. This project has made the vital first step in helping these Cumbrian woods face the future in a better, more resilient state.



Rhododendron clearance



Rowan

Volunteering gems

The Woodland Trust's volunteers are highly valued and support much of the organisation's work. The Heritage Lottery Funded ancient woodland restoration project has a range of volunteering roles.

Volunteer Speaker

The role of a Volunteer Speaker is to passionately showcase ancient woodlands and inspire listeners to care for these scarce and irreplaceable habitats. Increasing understanding and awareness around ancient woodland restoration is a key aim for the project.

Sometimes people do not realise the differences between an ancient wood, a secondary wood and a plantation until shown. To some a wood is just a wood, somewhere to walk or play in, until their eyes are opened to the heightened beauty, complexity and importance of ancient woods.

Brian Palmer

The need for ancient woodland restoration can be a difficult message to communicate, but it is an important one. Brian Palmer, a retired Project Manager, speaks to local interest groups who hold a regular programme of talks for their members, and to groups he is invited to speak to via his own local contacts. He enriches the standard set of slides produced for him with local material and relevant information tailored to the different groups, including history societies, gardening clubs and archaeology groups.

As well as educating and inspiring, together with the project manager they have engaged with a couple of landowners interested in finding out more about surveying and managing their woods. Another good contact has been a gentleman with a long history of working with heavy horses. He is currently training an apprentice to use them

where heavy machinery is not appropriate or able to access.

Brian has also thrown in a native tree identification quiz to keep people on their toes. Players can get a maximum of 14 points, with winners managing 9-11 so far. The overall feedback from groups attending the talks has been enthusiastically positive and Brian is recognised as a real asset to the project. He works closely with the full-time project manager to help achieve the project objectives.

Woodland Heritage Researcher

The aim of the researcher volunteer role is to help build the unique story of woodland heritage within the project area they are based in. By discovering more about previous history and culture, the story of ancient woods can be brought back to life to inform and inspire.

Research includes gathering information from local people, who might have old photographs hidden away in a shoe box or fascinating tales passed down from their ancestors. Paintings, historic maps and social history are other key pieces of evidence.

This body of data links us back to our woodland heritage and gives a greater appreciation of how trees have supported human development.



A slide used for talks

Joanna Gilliatt

In Scotland Joanna is researching the 19th and early 20th century bobbin mills. Wooden bobbins were essential for the weaving and spinning industries and the main wood used to make them was birch, an indigenous species which grows abundantly in many areas, and is even considered to be a “weed” in some circumstances.

Although the information available is patchy, Joanna’s research is finding evidence of a significant rural industry, which used huge volumes of wood and provided employment in rural communities. Yet most of us have never even heard of bobbin mills, and there is often no trace left of them.

Evidence gathering

Joanna is using a wide range of sources, including census data, property valuation records, old maps, newspaper archives and estate records. She has also found information on local websites, and had invaluable help from knowledgeable local people.

She has identified over 40 bobbin mills in northern Scotland. According to a report written in 1848, one of them, the Salen Bobbin Mill on Loch Stuart, produced 75,000 bobbins a day and used 1,400 tonnes of wood a year, which was bought for seven shillings and six-pence a tonne.

In another case, the Pirn Mill on the Isle of Arran went out of production when the local supply of wood had been exhausted, suggesting that the woodland was not being sustainably managed.

The bobbin mills themselves were particularly vulnerable to fire, due to the large amounts of wood in and around them. Often they were not adequately insured and, as in the case of the Salen Mill, which burnt down in 1854, were not always reopened.

Joanna is fascinated by tracking down, and piecing together, information about all the different bobbin mills, and the men who used to work in them. She is uncovering previously unknown, or forgotten, evidence of a rural industry which relied on indigenous woodland for its existence, and thrived for around 100 years, before disappearing again.

Volunteer

These are just two examples of the volunteer roles supporting the ancient woodland restoration project, and many other areas of the Woodland Trust. Others include assessing plantations on ancient woodland sites to evaluate opportunities for restoring them. Volunteers are highly valued and dedicate a significant amount of energy and time to the work of the Trust.



Kinrara Bobbin Mill



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