

Creation, restoration and management of native woodlands at the landscape scale

Forest Ecology Group

13th and 14th September 2007

Loch Lomond and the Trossachs, Scotland

Background

The aim of this meeting was to provide an opportunity for those attending the BES Annual Meeting in Glasgow to follow that up with an excursion to study native woodland expansion and management activity within the upland conditions of the nearby Loch Lomond and Trossachs National Park. The meeting was also attended by a good number of more locally-based woodland professionals.

The Loch Lomond and Trossachs area has a long history of woodland activity dating back to the industrial coppice management of its extensive acid oak woodlands under the 18th century Dukes of Montrose. During the 20th century large areas of conifer plantation were established by the Forestry Commission, largely of Sitka spruce, forming the Queen Elizabeth Forest Park. The area is now of prime importance for biodiversity, landscape amenity, tourism and water supply to the city of Glasgow. These attributes were recognised by its recent designation as Scotland's first National Park after many decades of campaigning by the outdoor and nature conservation movements. Long-term park planning is now in train. A characteristic of this area of upland Scotland is the concentration of land ownership in public and voluntary-sector hands with a lower emphasis for historical reasons on private sporting interests than elsewhere. This allows native woodland expansion to be pursued with vigour.

As elsewhere in Scotland, attention currently focuses on large-scale expansion of the native woodland resource by planting and natural regeneration to provide enhanced biodiversity habitats and landscape amenity. In some areas maturing conifer plantations on ancient woodland sites are being restored to native species dominance. In the last five years an aspiration to sequester atmospheric carbon in these new woodlands has been emphasised and silvicultural debate currently surrounds how best to achieve that novel objective under upland conditions.

Speaker session

The meeting began with a half-day speaker session hosted by the Royal Scottish Forestry Society at their Cashel Native Forest Centre on the east bank of Loch Lomond.

Scott McG Wilson gave a short presentation about the ecological history of native pine and oak woodlands in the Loch Lomond area, based on previous surveys by Steven & Carlisle (pinewoods) and Ruth Tittensor (oakwoods). Information about existing native woodlands throughout Scotland is currently being refined and updated by the Native Woodland Survey of Scotland (NWSS), managed by Forestry Commission Scotland, which seeks to record location, extent, composition and condition of all woodlands where site native tree species are predominant or where there is potential to restore PAWS (plantations on ancient woodland sites). This ambitious project is expected to be pursued over the coming years, using the latest methods of electronic field mapping and recording.

Neil Weir of British Petroleum outlined the rationale of the Scottish Forest Alliance (SFA), which is a partnership between his company and several woodland agencies and NGOs to create extensive areas of new upland native woodlands in Scotland with objectives of biodiversity enhancement and carbon sequestration. Several of their projects are located in the Loch Lomond and Trossachs National Park and were visited during this meeting.

We had three major presentations dealing with “tools and techniques” for native woodland expansion. Darren Moseley of Forest Research and Phil Baarda of Scottish Natural Heritage discussed planning methodologies, based on the concepts of forest habitat networks (FHNs) and cost-surfaces, which seek to optimise biodiversity benefits for any given investment in new woodland creation. This approach, employing a range of landscape ecological analysis software, interprets ecological permeability of woodland landscapes for key species. Scott McG. Wilson outlined the potential for use of landscape visualization techniques as an aid to the planning and explanation of native woodland expansion in the uplands. These can include a combination of artists’ impression, photographic manipulation and computer rendering approaches. Mike Smith of Forest Research presented details of the field methodology for monitoring biodiversity gains within the context of the new native woodlands created by the Scottish Forest Alliance. It is important to ensure that native woodland expansion is meeting its objectives, and effective monitoring forms a vital part of that process.

The final two presentations dealt with site-specific projects to expand native woodland habitat in areas of east Loch Lomondside that it was impractical to visit during this meeting. Russell Lamont of Forestry Commission Scotland explained some of the issues affecting proposals to restore native woodland to the steep Ptarmigan Block on the west face of Ben Lomond, which was coniferized in the 1940’s. A combination of steep and unstable slopes, high visibility, high tourist usage (West Highland Way) and limited road access make for a formidable forestry challenge. Plans currently centre on phased fellings of conifer crops with skyline extraction, followed by a combination of replanting and natural regeneration of native tree species. In support of this, pioneering work on slope stability and terrain classification is being pursued in the area. Nick Chambers of RSPB Scotland outlined their approach to native woodland expansion on their Inversnaid and Garrison Reserves further north along the loch shore. A number of bird species, including black grouse, are the object of conservation planning within this area. A combination of new planting and natural regeneration will be used to expand woodland cover away from the loch shore.

Field excursions

During the remainder of the meeting three sites were visited which illustrated contrasting approaches to native woodland expansion within the National Park boundary.

The Royal Scottish Forestry Society ‘Forest for a Thousand Years’ project at Cashel Farm, Balmaha formed part of the Millennium Forest for Scotland (lottery funded) and is one of the longest established areas of extensive new native woodland planting. We were shown over the site by Netty Horne of Border Consultants (Forestry) who planned and implemented the original planting scheme. The approach taken was the application of conventional forestry best practice to detailed site survey, species selection and site preparation. This included the use of mounding on peaty upper slopes and fertiliser applications to young crops. A variety of species were used, including Scots pine, oak, birch, rowan and alder. Establishment has generally been satisfactory on the lower and mid slopes, but some problems have been encountered with pine-birch mixtures at higher elevations. The fairly intensive forestry methods employed here have not been

favoured in many subsequent new native woodland schemes, but Cashel provides a valuable example of what can be achieved in terms of new native woodland creation when they are.

The mature oak woodlands of Strathcashel, below the Cashel Farm scheme, are managed by Forestry Commission Scotland. Some areas had been replanted with spruce after the war and these are currently being restored to native woodland by clear felling followed by combined planting and natural regeneration. Within remaining mature oak stands, small-scale selective felling is being trialled to promote natural oak regeneration. This area, together with the Rowardennan oakwoods, is serving as something of a test-bed for future restoration work in the Ptarmigan woodlands, on much more difficult terrain.

The Glen Finglas property of the Woodland Trust Scotland is located further to the east, in the Trossachs. We were shown over this site by Tim Hall and Adam Wallace of the Woodland Trust. Upon acquisition of this upland sheep walk by the Trust in the late 1990's, the original intention had been to pursue a "rapid" new native woodland expansion approach by planting, not dissimilar to the Cashel scheme. However the discovery of an area of veteran woodland pasture in Glen Finglas promoted a change in philosophy. While two major areas of 'fenced and planted' new native woodland have been created, it was decided to conserve the historic wood pasture which had formed part of a mediaeval royal hunting forest. This decision coincided with increased interest in woodland pasture dynamics, promoted by the publication of Frans Vera's book '*Grazing Ecology and Forest History*'. Grazing by Luing cattle and blackface sheep is being permitted and levels of regeneration monitored. This more *laissez-faire* approach to native woodland restoration provides a very valuable example, which, depending on its results, may be adopted in other areas of Scotland. It can, however, prove more difficult to reconcile with 'target and objective driven' forestry funding schemes. This may restrict its application to ownerships which are prepared to make significant independent investments in ecosystem restoration work.

Our final visit was to the north side of Loch Katrine, an area recently acquired by Forestry Commission Scotland from the water supply authorities, but which still forms a vital part of the Glasgow water catchment. The area is also of great importance for tourism, including views from the vessel Sir Walter Scott on the loch itself. Livestock have been removed and major plans are afoot to expand the existing areas of native woodland within the Scottish Forest Alliance project. Mature conifers will be retained as landscape features but no more will be established. Ecological Site Classification (ESC) techniques have been used to decide which native woodland types should be established, with an elevation limit for planting of 350m being adopted initially. There are veteran woodland pasture habitats in this area and it is hoped in the longer term that livestock might be re-introduced to these.

Scott McG. Wilson