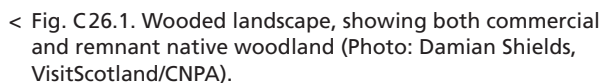




C26

Cairngorms National Park Authority

At 4528 km², the Cairngorms National Park is one of Europe's largest national parks. Despite its woodland cover being dwarfed by the expanse of open moorland and mountain, it represents some of the finest, most extensive and best connected native woodlands in Scotland, which are home to a



Statement

“The need for sustainable, locally-sourced resources, including timber, has never been greater than now and is only going to increase in the future.”

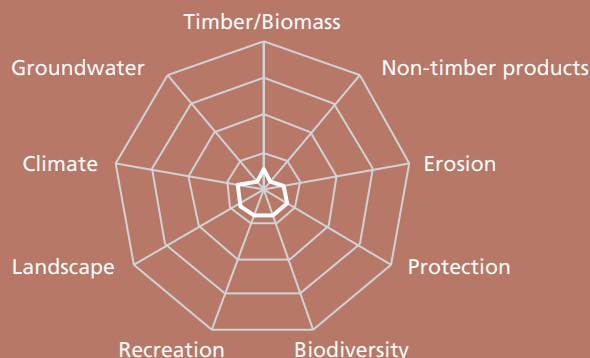


Table C26.1. General information on the Cairngorms National Park.

Total forest area	62 300 ha based on 2015 survey, but currently expanding by approximately 1000 ha annually
Main management types	Clear felling/restocking, Low Impact Silvicultural Systems, Continuous Cover Forestry, nature reserve
Total volume	12 126 000 m ³ in 2015
Annual growth	No data
Annual cutting rate	No data
Deadwood	Unknown, but some woodlands are being managed to produce more for biodiversity objectives
Ownership	A complex mix of mainly private land, with some owned by the state and conservation NGOs
Climate	Varies with altitude and distance from the Atlantic, but average 6.5 °C mean annual temperature, 900 mm mean annual precipitation at lower altitudes.
Geology	Mainly Dalradian sedimentary rock and post-tectonic granitoid intrusions.
Soils	Podzols are the most representative soil group in the national park (around 50 %), and consist of iron and humus-iron podzols at lower elevations. Peaty podzols and peaty gleyed podzols occur further upslope (and typically have an iron pan). Other groups include montane soils, peats, rankers and gleys. Brown earth soils cover only 4 % of the park.
Protected area	National Park (IUCN category V). Includes 54,399 ha of National Nature Reserve, covering significant areas of Scots pine and birch forest, as well as mountain willow scrub.
Natura2000 area	In the national park there is a total of 106 300 ha of SAC. Designated woodland habitat types include: Caledonian Forest; Bog Woodland; Western Acidic Oak Woodland; Alder Woodland on Floodplains; Mountain Willow Scrub; and Juniper scrub; There is also 201 300 ha of SPA, with woodland-related qualifying species of capercaillie, Scottish crossbill, osprey and golden eagle.

wide range of biodiversity rarely found elsewhere in the UK. There is a long heritage of forest management across the National Park and it continues to be the perfect test-bed for combining commercial forestry with good environmental management (fig. C26.1).

The UK as a whole is simultaneously one of the least wooded countries in Europe (just 13 % cover)

and one of the largest importers of timber products in the world. At 19 % cover, Scotland is the most wooded part of the UK and aims to be greenhouse gas Net Zero by 2045, five years earlier than the UK as a whole. Woodland creation is therefore seen by the Scottish Government, not only as a way of reducing dependence on timber imports, but as an important way of helping meet climate change tar-



Fig. C26.2. Berdalen in southwestern Norway, where climate and geology are similar to the Cairngorms, showing a higher tree line consisting of Scots pine giving way to downy birch at around 900 m (Photo: David Hetherington).

gets through carbon sequestration. Annual woodland creation targets for Scotland have recently risen from 10 000 ha to 12 000 ha and will rise to 18 000 ha by 2025. Covering as it does 6 % of Scotland, the Cairngorms National Park therefore has an important role to play, not only in conserving and enhancing biodiversity, but also in providing forest products and nature-based solutions to the climate emergency.

A long history of exploitation for timber and heavy grazing pressure, mainly by livestock but in more recent decades by high populations of deer, has meant that much of the national park has been deforested, its altitudinal treeline truncated to 650 m, while the remnant woodlands are often scattered and fragmented. Most of the deforested land is today upland dry and wet heath. However, the soils of the Cairngorms are capable of growing a wide range of tree species, not least Scots pine (*Pinus sylvestris*) and Downy Birch (*Betula pubescens*).

These two species grow at significantly higher elevations in south west Norway where latitude, climate and soils are very similar to the Scottish Highlands, but where grazing pressures have his-

torically been lower (fig. C26.2). Indeed, in areas of the Cairngorms where grazing pressure has been reduced in recent years, we are seeing young pines and birches starting to grow much higher than the supposed 'natural' treeline.

This means we have enormous potential for creating more pine and birch woodlands across the National Park, in a way that reverses fragmentation and strengthens a forest habitat network across the park. This is important for aiding landscape-scale species movement, both for species that need better dispersal and population mixing to improve their genetic integrity, or those that need to migrate in order to adapt to climate change.

Forest management and biodiversity

One focus is currently on creating strips of riparian woodland in otherwise treeless landscapes, such as grouse moors that are typically managed with sheep grazing and heather burning. Not only does the pattern of planted riparian woodlands mean they can serve as long (albeit thin), woodland corridors and stepping stones, but in time they will play



Fig. C26.3. Aspen in the Cairngorms. It is home to specialist biodiversity, including moss, lichen, hoverfly and moth species (Photo: David Hetherington).

a crucial role in shading watercourses and thus helping to keep mountain streams cool. Recently recorded water temperatures in these streams of 27.5°C are injurious to both Atlantic salmon (*Salmo salar*) and freshwater pearl mussel (*Margaritifera margaritifera*), two of the qualifying species of several of the river systems in the Cairngorms protected with Natura designation.

These new woodlands could be enriched with a wide range of other tree species, including the Aspen, a species which supports a range of specialist flora and fauna (fig. C26.3). The swathes of trees that already cloak the lower slopes of our mountains are an inspiring reminder of the potential for more forest across the whole of Scotland.

Over the last two decades a number of estates in the Park have significantly reduced deer pressure resulting in some spectacular woodland regeneration without any need for fencing. This has saved some of our most celebrated pinewoods from serious decline (fig. C26.4). Alongside this, many grouse-moor managers have removed deer, limited sheep grazing and controlled mountain hares to

further their own objectives, and this has resulted in woodland regeneration arising in unexpected places on the edge of the moors (fig. C26.5).

Stocking levels of natural regeneration can be very high (>5000 trees/ha); in some locations if thinned appropriately this creates potential for the production of a unique, high quality timber resource. A number of forest managers across the Park are making good use of regeneration and continuous cover in existing forests as a means of combining good environmental management with commercial timber production.

Development strategy

Last year the Cairngorms National Park Authority (CNPA) launched a new Forest Strategy for the National Park. A key objective of the strategy is to promote the creation of new woodlands whilst demonstrating the potential for integration of different land uses across the Park. The strategy seeks in its 100 year vision to see a 'forest culture' develop



Fig. C26.4. naturally regenerating pines at the expanding edge of Abernethy Forest, a National Nature Reserve (Photo: David Hetherington).

Fig. C26.5. The margins of a grouse moor returning to young pine, birch and willow woodland (Photo: David Hetherington).



throughout the Park's communities. We want to see more people employed in forestry and benefiting from all the environmental, social and economic opportunities that more healthy and extensive forests provide.

The Forest Strategy stresses the need to create 5000 ha of new forest over the next five years and provides guidance on how and where this could be done. The emphasis of the strategy is on native species because as a National Park we always want to produce the best quality habitat for wildlife alongside other forest management objectives.

The proportion of Scotland's woodland made up of native species is just 22.5 %. Indeed, the North American Sitka spruce (*Picea sitchensis*) is the most common tree species in Scotland, having been favoured by the forestry sector over the last few decades because it can grow quickly in wet and acidic conditions found across much of Scotland. However, the Cairngorms National Park is the only municipality or national park in Scotland where native trees constitute the majority (>70 %) of woodland. This is partly because relatively large

remnants of native woodland have persisted to the present day, and because traditionally the commercial conifer of choice has been the native Scots pine, which grows very well in the soils and climate of the Cairngorms (fig. C26.6). Non-native species are by no means ruled out for carefully planned productive forestry but we believe we can demonstrate the untapped commercial potential for more native timber use.

The biggest challenge in delivering woodland expansion in the predominantly cultural landscapes of a Category V national park, where most of the land is privately-owned, is persuading land managers to change the use or nature of the land. At present most unwooded land in the park is used for either hunting (e.g. red deer stalking and red grouse shooting) and/or agriculture (i.e. sheep grazing). Furthermore, some of the open habitats are protected by nature designations, including Natura2000, which don't allow, for example, species-rich heath or grassland to revert to woodland, even by natural regeneration of native tree species. One of the roles of the national park authority is to



Fig. C26.6. Planted Scots pinewood (Photo: David Hetherington).



Fig. C26.7. Young, planted Scots pine and birch woodland on a former grouse moor (Photo: David Hetherington).

make landowners aware of the benefits of woodland creation and explore with them how to deliver change and reconcile it with their other land management objectives (fig. C26.7).

Social and societal aspects

The reasons for more woodland creation in the Park are many, but the Scottish Government's declaration of a climate emergency has increased our resolve to ensure the land is put to best use for future generations. We cannot go on forever importing so much timber when we have the potential to produce much more of our own. We cannot go on increasing the height of flood defences when our hillsides could support a much more diverse and water-absorbent wooded landscape. Locally produced, sustainable resources are now needed more than ever.

With this urgency in mind there are now added incentives for landowners to create woodland in the National Park. Scottish Forestry Grant Scheme applications within target areas of the park may receive an additional 12.5 % payment on top of the standard woodland grant payment rates. Further-

more, the Cairngorms National Park Authority (with partners Scottish Forestry, Woodland Trust Scotland and NatureScot) have launched a 'Woodland Challenge Fund' to help with the costs of putting together grant applications, such as surveys and forestry agents' fees. These incentives are predominantly aimed at increasing native forests which we believe, if managed well, will become increasingly marketable in the future, as well as sequestering carbon and creating valuable wildlife habitat for a wide range of threatened species such as the capercaillie and wildcat.