

Recent research, Scots Pine and the montane woodland planting in Coire na Ciste at Cairn Gorm

Description



Looking up the lower part of Coire na Ciste in July 1981 at erosion damage. Photo credit Adam Watson courtesy of Jenny Watson.

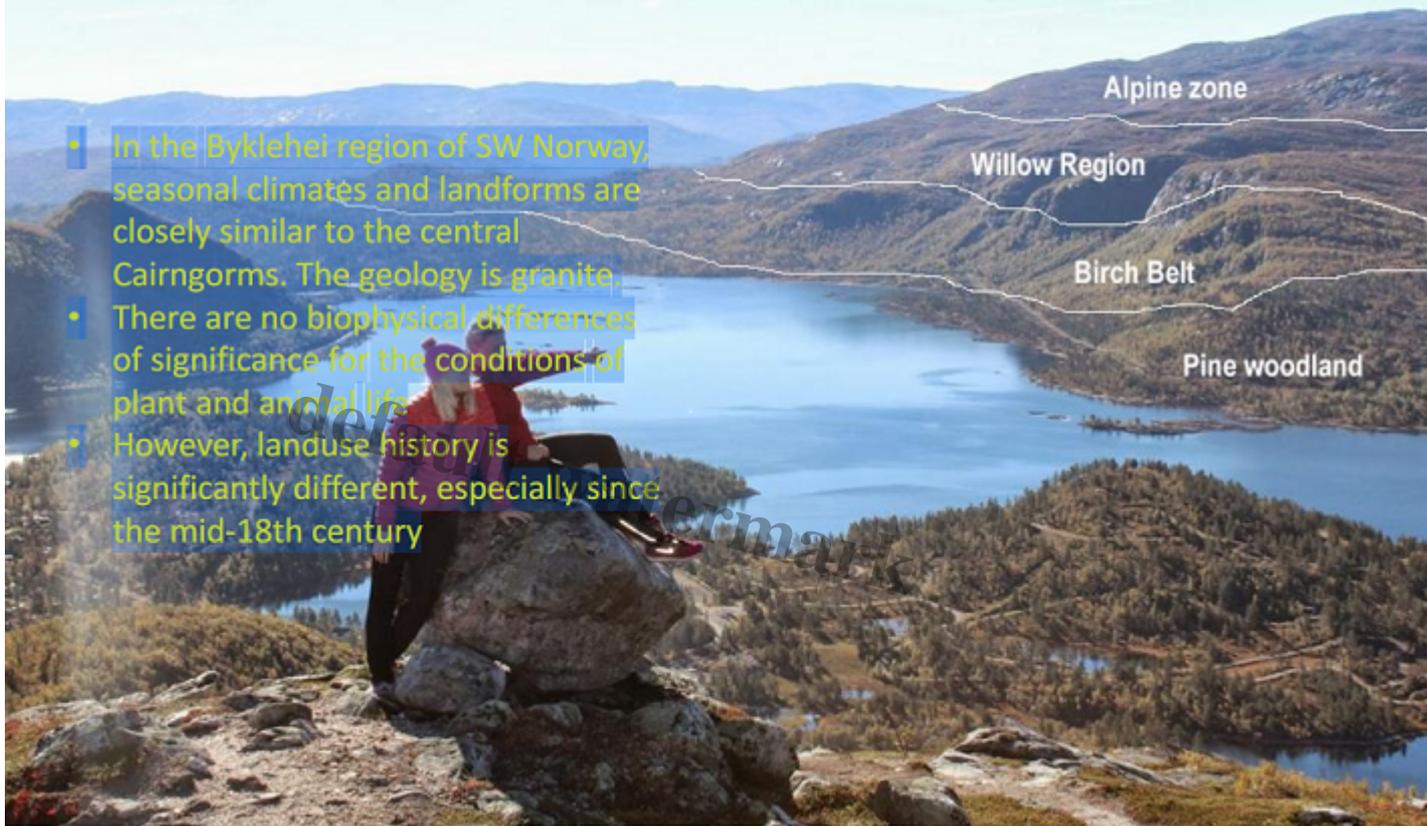
The BBC Scotland Outdoors radio programme broadcast from Cairn Gorm on 17th January ([see here](#)) included a piece on the montane planting project in Coire na Ciste. You would not know from listening to it on BBC sounds ([here](#) between 48-54 minutes) that there had been any controversy about the project, both because the Caledonian Pinewood in Glenmore has been regenerating naturally up into Coire na Ciste ([see here](#)) and because there is no evidence that the number and combination of willow species planted would ever occur naturally in this location ([see here](#)).



One of the 30,000 ‘montane’ trees planted in Coire na Ciste. Photo credit Dave Morris

Asked by Mark Stephen from the BBC ‘What’s the point of this’, David Hetherington, from the Cairngorms National Park Authority (CNPA), explained that they had been looking at South West Norway where there is pronounced altitudinal zoning of trees: a zone dominated by Scots Pine up to about 900m; then a zone of downy birch; and above that a zone dominated by willow scrub.

Cairngorms comparative: Byklehei



- In the Byklehei region of SW Norway, seasonal climates and landforms are closely similar to the central Cairngorms. The geology is granite.
- There are no biophysical differences of significance for the conditions of plant and animal life.
- However, landuse history is significantly different, especially since the mid-18th century

Extract from presentation Duncan Halley gave to Cairngorms Connect (Wildland Ltd, NatureScot, RSPB and Forest and Land Scotland) in 2024

It appears that the CNPA and the Spey Catchment Initiative, whom they grant aided to carry out the planting of the 30,000 trees, were trying to create in Scotland what is now found in South West Norway. What they ignored is that much of Norway was as treeless as Scotland 200 years ago and almost all the woodland expansion there has been through natural regeneration, as Duncan Halley, from the Norwegian Institute of Nature Research, pointed out in his interesting presentation to Cairngorm Connect ([see here](#)).



Front on view of erosion in top photo photo credit Adam Watson 1981

Forty five years after Adam Watson documented the impact that ski infrastructure had had on Coire na Ciste, the natural environment there is in a far better state. Part of that improvement is due to restoration work prompted by Adam's work and some, however imperfect, resulted from the removal of the West Wall chairlift from Coire na Ciste in 2017 ([see here](#)).



View down the lower half of Coire na Ciste in July 2025, the erosion scars (left) significantly smaller than they were 45 years ago and plenty of Scots Pine visible

As significant, however, in my view is that vegetation in Coire na Ciste is now recovering naturally, gradually colonising and covering up the erosion scars caused by human activity, while Scots Pine from the Caledonian Pinewood in Glen More below have been spreading up the hill. I must go back to Coire na Ciste, try to replicate the views in Adam Watson's photos and count how many trees there are now.

David Hetherington acknowledged some of the changes in his interview. He described the Scots Pine zone in Coire na Ciste as "truncated", i.e lower than it would be in Norway, but stated that Scots Pine has been slowly spreading up the hill because deer numbers had been low for quite some time.



1981.09.06 Coire na Ciste chairlift reseed disturbed by sheep. Caption and credit Adam Watson.

While the reduction of grazing by large herbivores is key to understanding the regeneration in Coire na Ciste, it appears likely that it was the removal of the sheep, which used to put out to graze on Cairn Gorm every summer, which triggered the recovery. While culls by Forest and Land Scotland in Glen More may have reduced the number of deer venturing up the hill, disturbance by humans who have been flocking to Cairn Gorm for well over 50 years has probably been the more important factor.



Reindeer from the Cairngorm herd grazing by the roadside just below the Coire Cas car park in 2022

Reindeer, like sheep, are much tamer than red deer and might, as David Hetherington acknowledged, enjoy browsing the newly planted trees. Unfortunately, there appears to have been no assessment of the extent of grazing, if any, by reindeer in Coire na Ciste before the 30,000 trees were planted or the risks of them being eaten. Four years ago the reindeer were allowed to wander over into the Loch Avon basin where they ate many of the trees the RSPB had planted there ([see here](#)).

The planting of deciduous trees in the Scots Pine zone



Deciduous tree regeneration at the bottom of Coire na Ciste by the car park, a plentiful future seed source (some of which is likely to have originated from the small plots of trees planted by the former bottom station of the chairlift). Photo July 2025.

Conservation organisations have, for at least 15 years, been expressing concerns that the surviving fragments of Caledonian Pinewood contain only a limited number of other tree species. There is now research claiming that planting of deciduous trees in pinewoods is necessary to restore *â??biodiversityâ??*, for example. [\(see here\)](#):

â??Instead, active intervention, such as keystone species (re)introduction and tree planting, is needed to restore ecological processes and trigger ecological reorganisation (Sandom & Macdonald, [2015](#)). This landscape-scale interpretation is supported by 30â??years of evidence from the Cairngorms Connect partnershipâ??also in the Scottish Highlandsâ??showing woodland expansion in the presence of heavy deer culling for some tree species (Gullett et al., [2023](#)).â??

That conservation mindset may help explain why so many of the 30,000 trees the Spey Catchment Initiative and CNPA planted were in the Scots Pine *â??zoneâ??* and despite the evidence that deciduous trees were also slowly creeping up the hill. From the planting plans it appears likely there are now MORE planted deciduous trees in the Scots Pine zone than there are Scots Pine.

In January, important new research, led by the James Hutton Institute but including authors from the RSPB, Woodland Trust and Royal Botanic Gardens of Edinburgh, was published on *â??Does greater tree species diversity enhance the resilience of associated biodiversity and ecosystem functioning in *Pinus sylvestris* forests?â??* [\(see here\)](#). The research was designed, *â??given the rapid rise in tree pests and pathogens and policiesâ??*, to find out *â??if increased tree species diversity will provide enhanced resilience for associated biodiversity.â??* The authors have produced a complete list of species that use Scots Pine (*Pinus Sylvestris*) *â??for either feeding or living in/on in the UKâ??* [\(see](#)

[here](#)). The total comes to 1589 species.

The researchers then assessed forty-seven other tree species for their suitability to support these *P. sylvestris* associated species. They found the maximum percentage of non-obligate species (i.e those that are not dependant on a symbiotic relationship with Scots Pine) that could be hosted by any other alternative tree species was 15%. They also found that 11% of species found on Scots Pine used only one other tree species and no less than 23 tree species would be required to support just 41% of species associated with Scots Pine.

What the research tells us is that planting other species of tree will do little to protect the biodiversity associated with the Caledonian Pinewoods because the vast majority are almost entirely dependant on Scots Pine. The implications are far reaching. If we acknowledge that the primary value of the Caledonian Pinewood remnants lie in their Scots Pine, then there is little justification for claiming that they are degraded and need to be restored because most of them lack many other tree species. What matters is whether the Scots Pine is regenerating, as in Coire na Ciste. Moreover, the research suggests that those who are trying to justify the planting of deciduous trees in or around the 84 sites listed on the Caledonian Pinewood Inventory ([see here](#)), are actually trying to change what is valuable about them into something else.

The overriding importance of Scots Pine for the Caledonian Pinewood the clue is in the name fits with what I have observed the last few years, most recently at Coille Coire Chuilc ([see here](#)). Its Scots Pine which are the great survivors, the reason why the natural history of the Caledonian Pinewoods goes back thousands of years and the reason why these woods are so important. The presence of other tree species is, by comparison, unimportant and their absence does not justify planting in any Scots Pine zone. By wrongly making claims about the alleged biodiversity benefits of other trees, conservation organisations have been diverting attention from what is important, creating the conditions where Scots Pine can regenerate naturally. Enable that as happened accidentally at Coire na Ciste until the recent planting and other species of tree will also over time spread naturally as they have done in Norway.

The BBC covered the publication of the research ([see here](#)) and, having shown they did not understand the difference between a plantation and a Caledonian Pinewood, managed to turn it into a justification for planting trees! There is a series of interesting and critical comments on the article, which are worth reading, one of which I particularly liked:

Can't believe how long they must have taken to plant the Amazon rainforest.

Recent research on montane woodland



Dwarf birch growing in bog at 550m on the eastern boundary of the Loch Ossian estate 2019

January 2026 also saw the publication of important research ([see here](#)) on montane woodland by Sarah Watts, who convenes the Mountain Woodland Action Group (MWAG) and is conservation manager at the Corroul Estate. The research monitored three plots of (unfenced) dwarf birch (*Betula nana*) planted at Corroul, Glen Finglas and Ben Lawers over a six period. It found that:

With red deer densities above three per km², the research found dwarf birch planted in grassland and heath habitats suffered increased mortality linked to substantially more browsing where deer feed on woody vegetation such as leaves, twigs, and buds. In contrast, the trees in blanket bogs were browsed less and experienced far higher survival rates.

However, at lower deer densities, without the pressure of overgrazing, dwarf birch survival was similar across all three habitats with some growth measurements better in the grass and heath than in bogs.

These findings show that blanket bog is a refuge where populations of dwarf birch have escaped overgrazing, rather than providing the ideal conditions for planting and restoration action.

This means that Scotland's lost mountain woodlands can return more widely if deer densities are reduced.

National deer density targets are currently set at 10 per km² across open range areas of the Highlands, but numbers vary locally from below one to over 64 per km². These figures are too high for the restoration of sensitive upland habitats such as woodlands and scrub.

This is consistent with what I have been arguing, based on research conducted 40 years ago, that deer densities of 2 per km or less are generally necessary for woodland to regenerate in upland areas. It is very good to see a prominent ecologist, like Sarah Watts, stating this publicly. Also to see the Corrou Estate implementing her findings by reducing deer density from c15 per km to less than 3 per km now ([see here](#)).

By contrast, the CNPA's National Partnership Plan has a target average deer density of 6 per square km on the open hill. This is far too high for any montane woodland to develop and despite the recommendation of the Deer Working Group's (paragraph 52) that:

the Cairngorms National Park Authority and Scottish Natural Heritage should have a much greater focus on the need to improve the management of wild deer in the Cairngorms National Park, to reduce deer densities in many parts of the Park to protect and enhance the Park's biodiversity.

Instead of reducing deer numbers to enable nature to restore itself across the National Park ([see here](#)), which would mean challenging the traditional stalking estates (and ensuring the reindeer herd is properly controlled when on the open hill), the CNPA has decided it too should fund "restorative" tree planting (as NatureScot and Scottish Forestry already do). There are very few places in the Cairngorms, outside of the estates involved in Cairngorms Connect and Mar Lodge, where they could have planted montane trees without deer fencing or without risking the trees being incinerated by muirburn. Hence the planting proposal for Coire na Ciste.

Conservationists and tree planting

I have great respect for David Hetherington's work on reintroducing beavers and lynx while, as Dave Morris pointed out ([see here](#)), as recently as August 2018 he published an article explaining the importance of natural regeneration in expanding the existing remnants of the Old Caledonian pine forests in the Cairngorms. I have no idea whether organisational or cultural pressures caused him to change his position and support the planting in Coire na Ciste, but I hope that the research described above will cause him and the other ecologists who support tree planting to think again.

The best practice advice on the MWAG website, which dates back to 2010 ([see here](#)), remains relevant:

From an ecological perspective, allowing woodlands to regenerate naturally is the preferred option. Planting new trees may be quicker, but there's a risk of our interventions producing something different from what would occur naturally.

Or how about this from Sarah Watts:

Any planting in novel locations must be justified by evidence that such management is appropriate and worthwhile. Otherwise, large-scale action in unsuitable or marginal sites could fail entirely, or create unhealthy populations with negative implications for soil carbon-nutrient dynamics, open ground species, and the spread of pests and pathogens ([Watts, 2024](#)).

The climate and nature crises are now being used to justify ignoring such recommendations, as with the planting in Coire na Ciste, on the basis that natural regeneration takes too long or is "impossible" because there is no seed source. To which, the response should be, yes there is a crisis which is why we need to dramatically reduce deer numbers across Scotland and then let nature take its course.

Unfortunately, the Natural Environment Scotland Bill, which was passed by the Scottish Parliament last week ([see here](#)), creates yet more bureaucracy around the management of deer which will be used by traditional stalking estates to prevent any meaningful reduction in deer numbers. Another massive opportunity missed. The consequences are likely to be more of the same: large amounts of public money wasted on ineffective deer fencing and planting to "save" Scotland's rainforests, Caledonian Pinewood remnants and "river woods"; more planting of commercial conifers on peat to meet forestry targets; even aged plantations not woodland; industrial rather than continuous cover forestry; etc etc.

By paying for the planting of Coire na Ciste, the CNPA "which as a National Park should be leading on conservation" has helped legitimise the whole rotten system. They are not alone, as I will show in future posts.

Category

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Tags

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