

Native pinewood restoration in the Cairngorms – FLS’ botched experiment at the heart of Glenmore

Description

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Land Scotland | Fearann Alba

Helping native pinewoods to thrive



You are standing at one of several trial sites being established across Scotland in a collaboration between Forestry and Land Scotland and Forest Research.

We are exploring alternative approaches that might help the natural regeneration of trees in areas where this is currently very slow or unsuccessful. Native Scots pine seed is highly valuable to wildlife and often gets eaten before it can self-seed and germinate. This project is investigating a range of methods for protecting the seed, which includes mini tree shelters that will be removed and recycled, seed burial, seed palletisation and the use of natural repellents.

Deer Defence

The deer fence you see is being used for the purpose of this experiment, but in normal circumstances we avoid the use of fences at Glenmore. Instead we prefer to use natural repellents such as thorny shrubs to deter browsing and tree shelter products made from materials such as cardboard, starch based biopolymers, plant fibres and wool.

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Sign in the McAlpine Plantation, Loch Morlich, Glenmore which appears to have been erected fairly recently. Photo credit Anne Weir 2023.

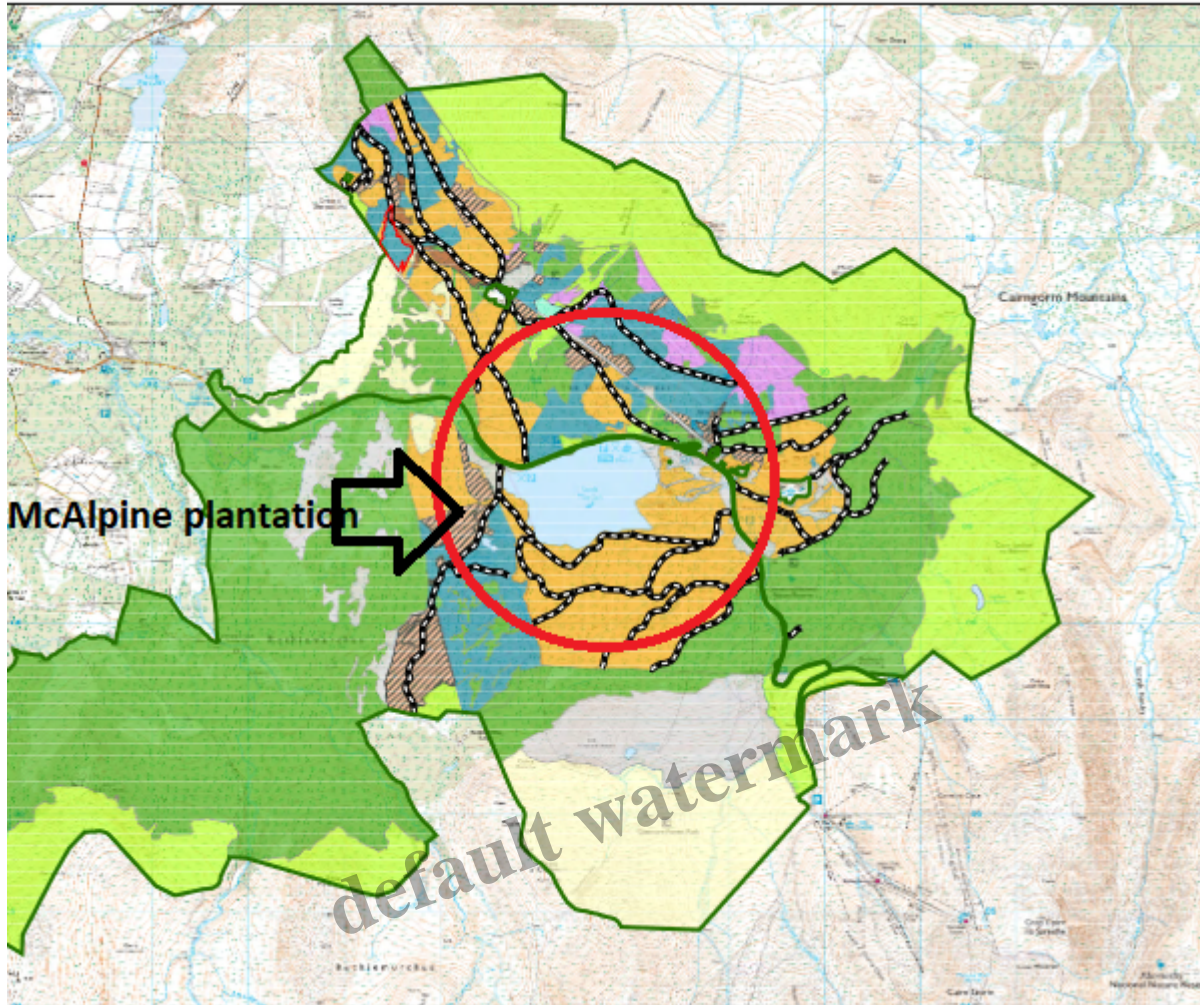
The approach that Forestry and Land Scotland (FLS) is taking to native woodland restoration at Ben Avon in the Trossachs based on natural regeneration, which I considered in my last post ([see here](#)), provides a stark contrast with how they are managing their land in the McAlpine plantation by Loch Morlich which I first considered a year ago ([see here](#)).



After Anne Weir had sent parkswatch photos of the destruction being caused by BrewDog at Kinrara, I invited her to send other photos showing destructive land management and received these two photos by return. Photo credit Anne Weir 2023

In the McAlpine plantation FLS have been planting trees in straight lines and in tree tubes, some of which have been “protected” by new deer fencing. It turns out (see first photo) that this is an experiment that FLS are conducting in partnership with Forest Research, an organisation which covers the whole of the UK. It is hard to imagine a more inappropriate place for such an experiment than at the heart of what should be the largest area of Caledonian forest in Scotland.

Glenmore Forest and the Strathspey Land Management Plan



Glenmore and Rothiemurchus management zones map. The dark green shows mature and regenerating Caledonian Forest, the light green areas for expansion by natural regeneration and the other colours the managed “core”.

It is difficult to make sense of FLS’s plans for the Glenmore Forest from the Strathspey Land Management Plan ([see here](#)) which was approved in June 2022. Among the 24 maps accompanying the plan are concept maps, thinning maps, management zone maps, approved felling coupe maps, approved restocking maps and future habitats and species maps. The plethora of maps helps conceal the key flaw in the plan which I have illustrated on the map above.

There is a near continuous ring (dark green) of Caledonian Forest around Loch Morlich and beyond this a zone (light green) where FLS plans that the native pinewood will be allowed to expand outwards through natural regeneration. Inside the ring of Caledonian Forest is a large area which the Forestry Commission planted in the past with trees that they are now removing creating a hole.



Part of the hole at the heart of the Caledonian Pine forest created by the felling of non-native lodgepole pine at the McAlpine plantation

The flaw in the plan, which was approved by the regulator Scottish Forestry, is that instead of enabling this hole to close gradually through natural regeneration, it allows FLS to interfere in the process and plant certain areas:

“Restocking will be mostly via natural regeneration which will be encouraged with scarification. Direct seeding of Scots pine and native broadleaves will be undertaken in trial sites. If successful, this will be applied on other clearfell sites.”



Scarification of part of the McAlpine plantation Nov 2022, seedlings from the lodgepole pine that has been removed in the foreground, Meall a' Bhuachaille behind,.

The Land Management Plan (LMP) also failed to say was that a plan for these seed planting trials, which involved 15 experimental plots, had been signed off three years previously in June 2020 and was already well underway ([see here](#) for a copy). That Experiment Plan was contrary to the ethos of natural regeneration and re-wilding and also contrary to some of the policies and management prescriptions adopted in the LMP.



Natural regeneration of lodgepole pine (right) outside the experimental enclosure

Of the 15 experimental plots, 12 are within deer fencing. The LMP's assessment was that deer fencing in the Glenmore part of the Strathspey Forest would have "medium/high sensitivity" and stated that none was envisaged. The Experiment Plan observed that fencing "may not be possible on a large scale due to the presence of Capercaillie" but Forest Research and FLS went ahead anyway, despite the fact that capercaillie are once again facing extinction in Scotland and Glenmore is at the heart of the surviving population.



View from inside the fence

Collisions with deer fencing are probably the single greatest source of premature mortality in capercaillie. Females, which are known to disperse up to 11km from their birth areas once fully fledged, would appear to be particularly at risk from fences erected in open areas between pine woods. While Forest Research and FLS have used batons which have been shown to reduce collisions, unless placed close together capercaillie will still see the space in-between as gaps which they can fly through. The behaviour of those responsible for erecting these fences appears to me just as reckless as the birders who in their wish to see capercaillie risk disturbing them at their leks.



What appeared to be surplus fertiliser next to the entrance to the enclosure. Note the naturally regenerating birch by the gate post and the rowan in front of that on the edge of the picture.

The Experiment Plan involved not just fencing but the use of: weedkiller, slug pellets and fertiliser:

a) Weedkiller

“Select site, and mark out treatments on site (SOP0006 v.2, SOP0048 v.2). Sub plots must be laid out so that they each contain the same number of sowing spots. Kill any established vegetation with an overall application of glyphosate (e.g. as 5 l/ha Roundup ProActive, 360 g/l glyphosate) in early September 2020.”

b) Slug Pellets

“Aluminium ammonium sulphate animal repellent, is no longer available, so those treatments using repellents (S5, S6, S11), sheep fat (Trico) will be used instead. As this is a more experimental compound for this use, and we have no information on phytotoxicity to seed or efficacy in reducing seed predation, it will be used in a more restricted number of treatments than would be the case if aluminium ammonium sulphate were available”

c) Fertiliser

“For treatments using seed burial (S3 – S7, S9 – S12, S14 and S15), immediately after sowing cover the Scots pine seed with John Innes Number 1 peat / compost potting mixture to a depth of 2 cm and if possible lightly tamp down (a deeper covering may kill the seeds, but less will not help to prevent predation)”.

The underlined bits are my emphasis. Was there no-one in FLS or Forest Research concerned about testing a new chemical to see if it is toxic to pine seed in the heart of the Caledonian Pine forest? Did none of the managers involved consider there was any contradiction between restoring peat bog on the one hand (as set out in the LMP) and using a peat based compost on the other?



View inside the enclosure showing extensive natural regeneration outside of the tree tubes where

the seeds were planted. Lodgepole is dominant but note the birch in the left foreground.

What I have not yet found out is how far the proposals set out in the Experiment Plan were applied in practice. If they were, the attempt to destroy other vegetation appears to have failed completely. The seeds in the soil that have naturally regenerated have been doing far better than those planted in tree tubes. As usual, a significant proportion of the tubes contained no saplings.



Scots Pine sapling in tube, tiny compared to the regenerating lodgepole pine around it. Did Covid delay the planting or do seeds just do better outside of shelters?

The tree tubes in the experiment have been set out in evenly spaced rows. If the experiment is even partially successful what FLS will have created is another bog standard plantation, the opposite of a natural pinewood which it claims it wants to see in 200 years.

How too this fits with FLS' proposals elsewhere in the LMP to restructure existing plantations in Glenmore to make them more natural is anyone's guess.



Four different types of tree tubes are visible in this photo, a significant number of which have broken or blown over

On my first visit to the McAlpine plantation last year, I had limited time and did not realise there had been further planting beyond the enclosure (a map showing all the trial areas would be a useful addition to the LMP). FLS, which has now committed to stop using plastic tree tubes, appears to be using the unfenced experimental plots to test out different types of shelter.



Oak tree growing out of hole in tree shelter

There is something wonderful about the way that nature defies the intentions of silviculturalists and takes a different course.



The experimenters could do worse and remove these shelters before they kill the trees they are meant to be protecting.



Three further types of shelter, many already leaning over, among healthy regenerating birch trees and other vegetation

In my view the only positive thing to be said about this experiment is there is no better place in Scotland to see for yourself the failings of tree shelters and why they are not necessary. That does not mean they should be allowed to remain in place – go while you can!

The justification for the experiment

The background section of the Experiment Plan gave a brief justification of what was proposed:

“Significant areas of native pinewoods on the national forest estate managed by Forestry and Land Scotland are not currently regenerating adequately though natural processes. In addition, extensive areas of clear felling have been taking place to remove non-native species (particularly Dothistroma infected lodgepole pine) and provide for the expansion of native pinewoods. Currently, native Scots pine is proving largely resistant to the Dothistroma it has been naturally exposed to. However,

concerns over the risk of introducing new strains of Dothistroma that could potentially hybridise and overcome otherwise resistant trees mean that it is not currently possible to plant trees that have been grown in off-site nurseries on these restock sites.”

Hence the desire to experiment with the planting of pine seeds rather than pine saplings.

So keen, however, were the foresters to plant trees that they did not even stop to consider why natural regeneration of the native pinewoods on the Forest Estate might not be going that well. The answer, for the Forest Estate on Strathspey at least, is given in the LMP which commits to maintaining deer densities at the levels recorded in 2019:

	km ²	2014		2019	
		Density	Quantity	Density	Quantity
Glenmore	35.5	9.3	330.2	7.1	252.1
Rothiemurchus	23.5	14.4	338.4	3.8	89.3
Inshriach	33	12.8	422.4	3.0	99.0
Average	92	12.2	1091.0	4.6	440.4

As a result of what is happening in the native pinewoods at Mar Lodge and Glen Feshie, we now know that for natural regeneration to take off deer need to be reduced to two per square kilometre. FLS is not far from achieving that at Rothiemurchus and Inshriach but miles from doing so at Glenmore.

The LMP attempts to excuse these hopeless targets claiming that deer culling is difficult when numbers of visitors are so high. In doing so it failed to ask how the National Trust for Scotland has managed to reduce the deer at Mar Lodge which is also thronged by visitors. Wildland Ltd could provide FLS with the answer: use infrared telescopes, which will pick up humans as well as deer, and shoot at night.

Had FLS and Forest Research, however, bothered to wait to see what happened after the lodgepole pine had been removed from the McAlpine plantation, they would have realised that whatever the deer numbers, currently there is no problem with natural regeneration in this part of the hole in the forest.



There was therefore absolutely no justification for setting up this experiment in this location.

The real problem is not the lack of natural regeneration but rather the contrary: the non-native lodgepole pine, whose seed has lying all over the site, has a head start over the other species and is doing so well that unless action is taken soon it is likely to shade them out. What FLS needs to do therefore is act like they have at Ben A'An, weed out the lodgepole pine and keep doing so until its seed is exhausted.



Lodgepole pine sapling, approx five years old, with cone

That process would be easiest and cheapest when the saplings are very young, when they could simply be uprooted, but the dangers of not acting fast are illustrated by this lodgepole sign at the side of the track. – yet more non-native seed in the making!

The LMP does contain a commitment to remove non-native regeneration:

6.6.3 Analysis and Concept (opportunities and constraints)

Objective	Opportunities	Constraints	Concept
Establish Scots pine and native broadleaves	Some group felling from 20 years ago are establishing well	Restriction on planting Scots pine Non-native regeneration Dense brush and ground vegetation preventing natural regeneration	Plant native broadleaves to establish seed source and restock with under-represented native species. Continue deer management and removing non-native regeneration Clearfell surrounding mature non-native stands Scarify felled sites to mix up organic and mineral soil and remove dense vegetation to encourage natural regeneration. Expand existing group felling where regeneration has now established. Explore the use of direct seeding and transplanting of existing regeneration to establish Scots pine.

6.6.4 Management Prescriptions

These areas include clearfells cut 10 years ago, recent strip clearfells and 0.5ha group clearfells from 20 years ago. The objective for all these sites is to establish Scot's pine and native broadleaves at a variable spacing through natural regeneration and planting. Native broadleaves will be planted to establish under represented species in Strathspey and establish seed sources in areas where they are not present. Scots pine regeneration will be encouraged through deer management, scarification and transplanting of regenerated trees. Deer numbers and habitat impact will be monitored to inform cull targets and monitoring of regeneration will be carried out at year 5 to establish if further intervention such as enrichment planting is required to achieve the restocking levels required. Direct seeding will be trialled and used in suitable locations if monitoring of the technique is successful in the first 5 years of the plan.

Unfortunately, to date, FLS appears to have been more interested in progressing the seed planting experiment than in fulfilling its commitment to remove non-native regeneration.

On my second and third visits to the McAlpine plantation last year, with Dave Morris, we had very helpful discussions both with the FLS staff overseeing the felling of the lodgepole pine and the contractors doing the work, including how they have “saved” the native trees surviving among the lodgepole. FLS, however, is so compartmentalised that those responsible for felling operations had no idea what the plans were to remove the non-native regeneration as this was not within their remit.

What needs to happen

Appendix 13 to the LMP lists the responses to the consultation on the plan and records that at a meeting of Cairngorms Connect, of which FLS is a member, “Wildlands (sic) requested that wording around natural regeneration was discussed to show a coordinated approach”. How prescient that was as, by their actions at the McAlpine plantation, both FLS and Forest Research threaten all the good work that been to done to establish that the best way to restore Scotland’s native pinewoods is through natural regeneration.

FLS now needs to do three things in Glenmore:

1. Abandon the experiment in the McAlpine plantation and remove the deer fencing and tree shelters as soon as possible.
2. Set up a programme to weed out non-native trees as their seeds regenerate. This would best be done by employing a permanent forester/s who were based locally but with a little bit of imagination volunteers could also make a contribution. In my view it might be much better to use volunteers to get rid of non-native species rather than using them, as RSPB has done, to plant

trees in remote places like the Loch Avon basin.

3. Reduce deer numbers in Strathspey to two per square kilometre.

Category

1. Cairngorms

Tags

1. conservation
2. FLS
3. forestry
4. natural regeneration
5. restoration
6. scottish forestry

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