BrewDog's "Lost Forest" at Kinrara – senseless, destructive and a misuse of public money

Description

Two diggers preparing the ground for planting in the north east corner of the site, with the new fence clearly visible. Note how the lichen rich heath, middle left, has almost been destroyed by the preparatory work. Photo credit Parkswatch reader October/November 2022.

"Forest" = "a large area covered with trees and plants/undergrowth"

Following my posts about BrewDog's "Lost Forest" at Kinrara in February (see here) and (here), I was sent further photos showing work that had taken place in October and November last year to restore peatland and prepare the ground for tree planting. It looked terrible (see above) but I wanted to see for myself. I finally managed to visit three weeks ago. This post will compare what I saw with the vision set out in Scottish Forestry's contract with BrewDog which stated that:

"The Lost Forest landscape scale project aims to sequester carbon and to improve the ecological value of the property over a period of years through creation of a series of new woodlands and peatland restoration".

Background

In February 2022, after several visits to the estate, I submitted an objection (available here) to BrewDog's proposals to plant trees on the eastern side of Kinrara, the area that is within the Cairngorms National Park. Based on the extensive natural regeneration of trees that was beginning to emerge across the site, it was obvious that all BrewDog needed to do to re-establish the Lost Forest was to control deer. Nature would do the rest.

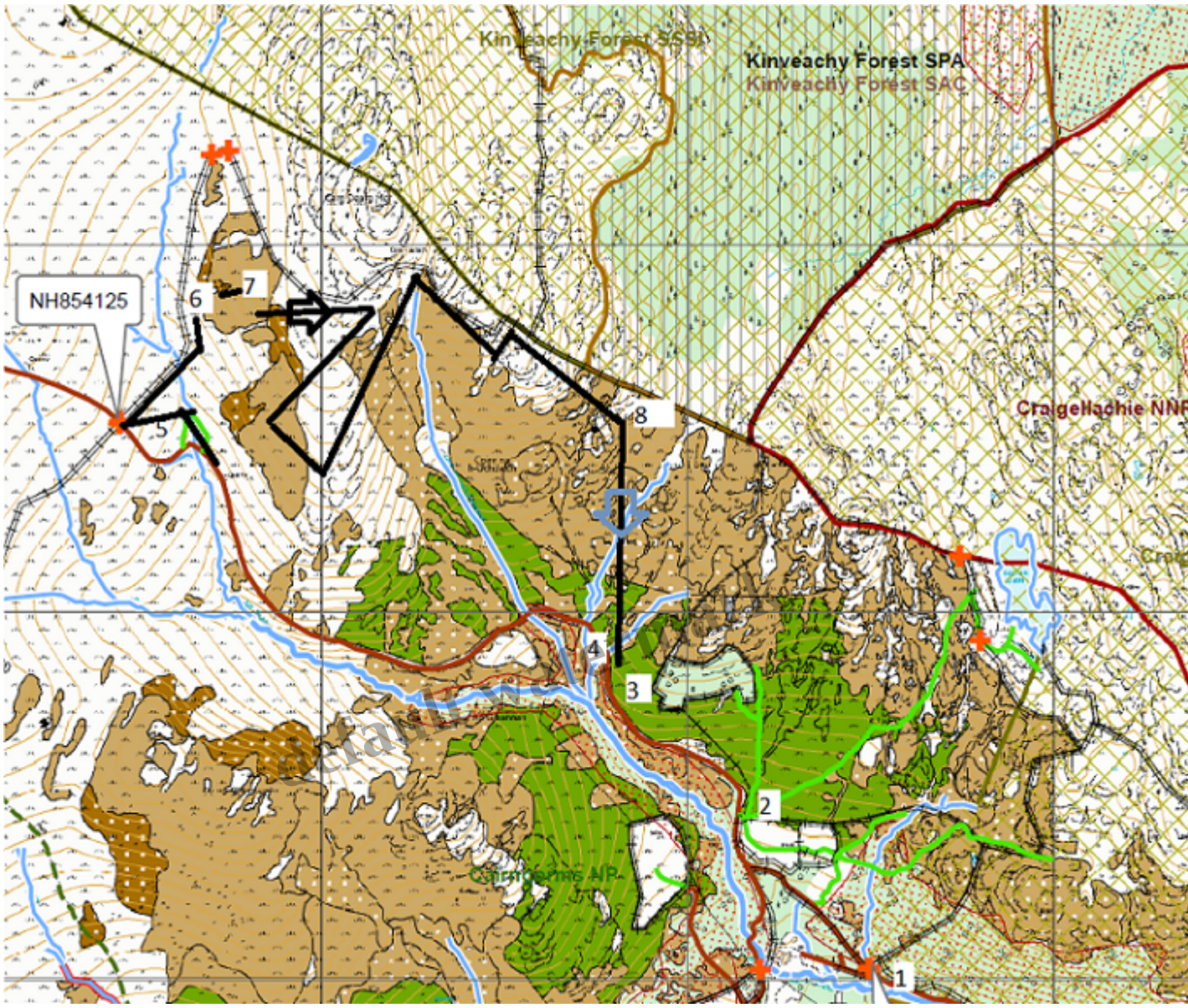
Scottish Forestry ignored the representations made by myself and others about this and in June 2022 awarded BrewDog up to £1,229,496.10 over 6 years to erect a forest fence and dig up a large part of Kinrara to plant trees. The driver behind this is that Scottish Forestry are under pressure to meet their tree planting targets in order that the Scottish Government can claim they are doing something to offset the impacts of climate change (see here for recent statement to this effect).

Schedule of Works Summary

Claim Year	Annual Recurrent Maximum Value	Capital Maximum Value	Total Maximum Value
2022	0.00	171987.70	171987.70
2023	75255.12	650575.80	725830.92
2024	75255.12	0.00	75255.12
2025	75255.12	0.00	75255.12
2026	75255.12	30657.00	105912.12
2027	75255.12	0.00	75255.12
Grand Totals	**376275.60**	**853220.50**	**1229496.10**

Extract from Scottish Forestry's contract with BrewDog that was obtained through an FOI request.

Work to erect a deer fence and "prepare" the ground for planting started last autumn and the trees must have been planted this spring. During this same period peat-bog restoration was being undertaken on Kinrara, also funded by the public, and while most of that work lies outwith the new forest fence some lies within it and will be considered here.



Annotated map from Scottish Forestry contract Brewdog. Plain light brown = upland birch; light brow with white dots natural regeneration; dark brown with white dots = low density upland birch; dark green = Scots Pine; light green lines ATV tracks; hashed lines = fencing

The map shows my approximate route and the approximate position of the areas illustrated in the photos below. I walked up the Burma Rd (brown line from point 1-5) then walked back done across the hillside (the thick black lines and areas 6-8)).

Some starter questions for BrewDog's carbon accounting

The main entry point to Phase 1 of the Lost Forest by the parking area on the Burma Rd

The former wooden gates (point 1 on map), a sustainable forest produce, have been replaced by galvanized steel gates, again at public expense. The justification for the change is unclear but steel fabrication is one of the main sources of carbon emissions worldwide. This raises the question as to whether BrewDog has taken into account ALL the carbon emitted by the Phase I work to plant a “Lost Forest” when making its claims to be taking carbon out of the world’s increasingly hot “air”? (The steel in gates and fencing, machinery, transport etc).

Spotted at BrewDog pub in Edinburgh two weeks ago……..

Not to mention the other pollution the planting work has released into the atmosphere in what is supposed to be a National Park:

The creation of mounds to plant trees is not a carbon neutral process. Note how use of vehicles – possibly preceding the planting – have left tracks through the lichen rich heath. Photo credit Oct/No 2022 Parkswatch reader.

The stupidity of paying to plant trees among natural regeneration

A few hundred metres up from the car park (point 2) there is an established native woodland plantation on the right. Just above it there is now an area of dense natural regeneration on ground which was formerly heavily grazed:

Point 2 on map

This natural regeneration is now rapidly spreading up the hill across an area, as shown on the map above, where Scottish Forestry agreed to pay BrewDog to plant Scots Pine.

Scottish Forestry will now pay grants to promote natural regeneration. The contract with BrewDog states this will be paid at £300 a hectare and is supposed to be for NEW natural regeneration. Perhaps that is why it wasn't claimed here? Instead, the information in the contract suggests Scottish Forestry have agreed to pay BrewDog £1840 a hectare to plant Scots Pine.

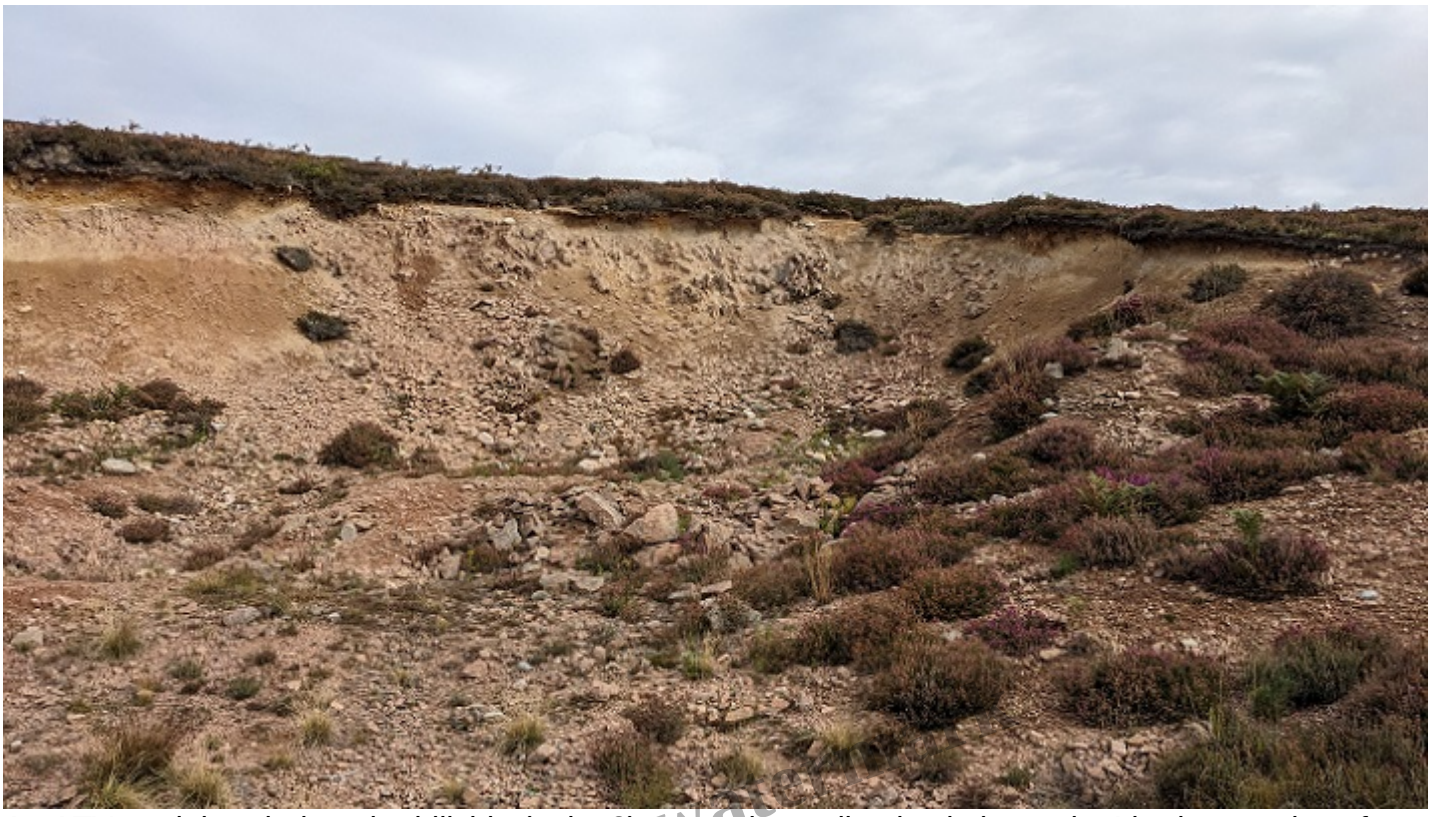
If successful, the planted Scots Pine will eventually shade out and kill off all the naturally regenerating birch. Meantime, as the map shows, on other parts of the site Scottish Forestry has paid BrewDog to plant birch. This is bonkers and suggests that the Scottish Government's oft repeated mantra that the right tree should be planted in the right place is meaningless guff.

While replacing birch with pine does nothing to help expand woodland cover in Scotland it does help Scottish Forestry meet the Scottish Government's planting targets.

View up the hill from area 2

Areas of scraped ground were visible among the regenerating birch raising the question of how many had been dug up or had their roots destroyed during the “ground preparation” process? From a distance it was hard to see any pine on the scraped ground which made me wonder if most of the planting was still to happen.

The answer came a little further up the hill, above the ugly and unrestored quarry which BrewDog Chief Executive must have passed when he drove up this road in July (see here)……..



An ATV track headed up the hillside (point 3). It was immediately obvious why I had spotted so few planted pine below:

One among the many photos I took in the death zone

Most of them were dead. Dave Morris was with me at this point and we had to look quite hard to find a single live pine tree on the “mounds” closest to the road. It appeared most had failed to survive the drought earlier this year.

The survival rate, among both pine and broadleaves, did improve as we moved up from the Burma Rd

and onto less steep ground. This was probably because this ground was boggier and less well drained.

Naturally regenerated pine behind dead planted pine

What was striking, however, was how around the dead planted trees there many examples of self-

seeded trees all of which had survived. This difference may have been partly due to the naturally regenerated trees having had more time to establish root systems. The photo above, however, also shows how mounding, which is intended to promote tree growth by draining peaty soils and removing competition, can have the opposite effect and starve the tree of water. By contrast the vegetation around the naturally regenerated trees helps keep the moisture in the ground and get the tree established.

The methods being promoted and supported by Scottish Forestry through the Woodland Grant system appear in need of a radical rethink due to the changes in weather that are a consequence of global warming. The need to adapt forestry practice to climate change, however, was not even mentioned by Scottish Forestry in their news release last Thursday (see here) about the responses to their recent consultation on the Woodlands Grant Scheme.

Note how the sapling is lying across a darker patch which also appears lower than the surrounding area

I also came across several examples of trees that were lying on the ground with their roots exposed, some dead, some not. At first I wondered if they might have been knocked over or unrooted by an animal (there are no obvious signs of browsing). Looking at this photo, however, subsequently it appears that the soil supporting the tree had been washed away quite recently. There was no evidence of that happening around trees that had regenerated naturally. Whether drought or flood, natural

regeneration appears a baetter way of establishing woodland than planting.

A little further on below the Burma Road (point 4) some larger broadleaves and Scots Pine had been planted within 25m of mature trees and an abundant seed source, again with evidence of natural regeneration all around. While it is not easy to tell what was to planted where from the map above, this area appears to have been reserved for natural regeneration. So why has it been planted?

Above point 4, where the Burma Rd bends to the South West, Scottish Forestry's map shows several small areas of planted pine among a larger area of natural regeneration. Looking up hillside it was impossible to make any sense of the map or understand how Scottish Forestry had agreed to pay to plant some bits while leaving other bits to nature.

Tree planting versus peatland restoration

Peatbog restoration above point 5 from below. The peatbog restoration at point 6 is just right of centr and uphill of the fence, while point 7 is on the hillside above. Note how the lichen in left foreground has survived the restoration work – a sign of skilled contractors.

Approaching where the Burma Rd crosses through the new forest fence (point 5) there was an area of peatbog restoration which had been organised by a different consultant and a different contractor to the forestry work.

Blocked drain from above with Burma Rd and borrow pit below. Mounding is just visible running up hillside left of centre

Generally the work had been done to a high standard. However, for some reason the grit stations for grouse had been left as they were. While this had created pools, the exposed peat has been oxidising away and it was difficult to understand why it had been left out of the restoration work.

Perhaps the works specification produced by Strathcaulidh, who oversee peat-bog restoration in the Monadhliath on behalf of NatureScot, was focused solely on blocking drains?

This track is shown on the map as a blue line. There are areas of peatland restoration to the left and right of the track by the fence.

More seriously, it was not clear if it was the peatland restoration diggers or the forestry planting diggers which churned up this peat. Whichever contractor/design consultancy was responsible, the destruction points to the wider problem. Why is the Scottish Government paying to restore areas of peatland and plant trees if adjacent to the restoration work the destruction of peat continues?

I followed the inside of the new forestry fence (which will be subject of a further post) around to point 6 where there had been more peat-bog restoration work:

The shape and small areas of bare peat around the pool, the two clumps of vegetation that have failed to take and the sod of upturned peat are all signs that diggers have been at work here

Generally the peat-bog restoration work within the Phase 1 Lost Forest area is far less obvious than the tree planting work. What looks good is usually also good from an ecological viewpoint.

Less than twenty metres above another digger had been scraping away peat and vegetation – I

hesitate to call this mounding – on which to plant trees:

What is the rationale behind the Scottish Government using public money to cover up bare peat with vegetation on the one hand while right next door it is paying to scrape away vegetation and leave peat exposed to the atmosphere?

From an ecological and carbon perspective there is no joined up thinking. One Scottish Government funding stream pours public money into Scottish Forestry, the forest consultants (in this case Scottish Woodlands) and the planting contractors who dig up peat, another pours public money (£250m over ten years) into NatureScot, the consultants (Strathcaulaidh) and the peatland restoration contractors. Many of the workers doing such work know this is crazy but they have no say and need to earn a crust.

The rationale behind this stupidity is that of markets. The Scottish Government is trying to support the creation of carbon off-setting markets to mitigate the impact of climate change through the Peatland Code and the Woodland Code, hence all the money being invested into peat-bog restoration and planting. From an investor perspective, however, it really doesn't matter if peat is being dug up to plant trees or trees are being pulled up to restore peat (that is part of Abrdn's plan at Far Ralia). All that matters is the financial return which includes the money that can be made out of government grants.

Carbon emissions and off-setting – trees v peat

Peat is far more important for storing carbon than any other soil or woodland and Scottish Forestry is

slowly being forced to acknowledge this. They now have a policy presumption against planting on or in deep peat, defined as peat more than 50cm deep, or ploughing where peat is more than 10cm deep.

While I had a strong suspicion that there were a significant number of “mounds”/scraped areas near the peatbog restoration where the peat was more than 50 cm thick, I hadn’t carried a probe to establish this. Whether or not the contractors tested the ground, my visit re-inforced my belief that peat depth is irrelevant.

As a very rough estimate the area of peat exposed to plant each tree is 1m square and 10cms deep. Two dead Scots Pine are clearly visible behind the sickly looking sapling in the foreground.

Consider this area of shallow peat further up the hill. When exposed to the atmosphere, peat is estimated to degrade at the rate of 2cm a year. That means that the 10cms or so of upturned/scraped peat on which the trees in the photo have been planted will have disappeared in five years. Planting 10 saplings in this way will result in the loss of a cubic metre of peat in five years and a significant release of CO2 into the atmosphere.
Now consider how large much carbon those saplings will have absorbed from the atmosphere in five years. There is a clue in the interview with BrewDog’s Chief Executive, James Watt, link above:

“We stop off to climb what can only be described as a near-vertical mound, to see some of the planted trees. I had half expected a near complete forest when I’d arrived but the saplings are tiny, barely reaching my shin.

Watt says they’ll be above human height in four to five years, although this is quickly refuted by the forest manager who says it’ll likely be longer. Either way, it’s a long-term project”

To continue the thought experiment, crunch all the five year old saplings together, wood, leaves and all, would the total come to 1 cubic metre? Accounts needs to be taken of the fact that:

a) peat stores more carbon per cubic metre than wood, and
b) many of the planted saplings fail to survive, so what needs to be calculated is not how long 10 of these saplings will take to replace the carbon in 1 cubic metre of peat but how long it will take say five trees to do so.

The calculations are clearly far more complicated than this. The loss of carbon from peat will not be limited to the 1 square metre used in the example above. The sides of those scrapes will also erode outwards over time through expose to the atmosphere. Moreover, the change in the hydrology caused by the mounding and trees sucking water out of the ground could mean that in areas such as that pictured above all the peat erodes away and its carbon is released into the atmosphere.

In terms of the carbon absorbed by trees out of the atmosphere account also needs to be taken of factors such as variations in tree growth due to altitude, how many more trees will die before maturity (disease, windthrow etc) and the extent to which the new soils created by the surviving trees over time replace some of the carbon lost from the peat.

The thought experiment, however, seems to me a good way of understanding why some research now suggests that the net effect on planting trees on peat could be to release carbon into the atmosphere for forty years or more. Whatever the exact length of time, the evidence on the ground suggests that BrewDog’s Lost Forest will be releasing more carbon than it absorbs for years.and is doing the opposite to what they claim.

While sparser than on the lower ground, trees had also been regenerating all the way up the slope. Over time their roots will help dry out the peat and could eventually destroy it, just like the planted trees. This process of carbon loss from peat, however, will be far slower than from BrewDog's surrounding divots and scrapes and is far more likely to be compensated for by the growth of the tree. And on deeper wetter peaty soils self-seeded trees are far less likely to get established or survive.

Looking across the dug up slope -“if it looks bad it is bad”

If we really want to expand woodland and restore peatland to absorb carbon, instead of trying to create markets the Scottish Government would be far better leaving it to nature, abolishing the Woodland Grants Scheme and using the money instead to reduce deer numbers.

The destruction of nature

Note pine on divot and boulders on right side of photo

Higher up the hillside (point 7), the peaty soils became so shallow that there was little for the diggers to scrape. That has not stopped BrewDog's planters. What had been slowly developing into lichen rich heath, has been turned into a field of wrecked cairns. How long did it take soils to develop on this bouldery ground? 10,000 years since the last ice age? How long will it take vegetation to recolonise these rocks? This is state-sponsored environmental vandalism on a grand scale.

Spot the self-seeded pine. The vegetation around the sapling will continue to absorb carbon unlike the exposed rocks in the previous photo.

Contrast how BrewDog has done it with how nature would do it if given a chance.

The senselessness of what BrewDog has done

After zig-zagging around the hillside I followed the new forest fence to point 8 on the boundary with the Seafield Estate, not far from the Craigellachie National Nature Reserve managed by NatureScot.

The new boundary fence separates old pine and extensive natural regeneration on the two estates

Parkswatch has commented on several occasions about how the Seafield/Kinveachy estate's attempts to enable the natural regeneration of the Caledonian Forest in the Dulnain catchment have been severely limited by Kinrara's failure to prevent incursions of deer and sheep from the south west (see here). But on this section of their estate boundary, across the watershed on Speyside, they appear to have been far more successful.

Just what is the policy justification for Scottish Forestry paying to erect a new deer fence between two areas of ground where natural regeneration is taking off? This appears to me completely and utterly bonkers. The fence continues along the boundary with the Craigellachie Nature Reserve, managed by NatureScot, so why didn't they and the Cairngorms National Park Authority raise merry hell about the stupidity of this? Or if they did so privately why did they not come out publicly?

While traversing across the south facing slopes of Carn Dearg Mor towards point 8 there was an area where the ground preparation had been done by hand, not by digger. While no-one should be scooping out sphagnum moss, which is one of the main components of peat, to plant trees it does illustrate that BrewDog could have used less destructive methods across the site.
As did this, a little further on:

These trees, planted with far less ground disturbance, have survived far better than those planted on mounds, have exposed far less peat to the atmosphere and destroyed far less vegetation. I would still argue that planting here was not justified, given the existing and potential for natural regeneration, but if Scottish Forestry is going to continue to fork out money to plant native trees it should insist on hand planting. Hand planting is more expensive and current grant levels would not cover the costs. That would mean landowners like BrewDog having to make a much greater financial contribution towards woodland creation than they generally do at present.

All that mounding and scraping, however, may still come back to bite BrewDog. Their Phase 1 plan states: “Planted stock losses will be replaced (beat-up) to ensure minimum stocking densities are achieved at year 5.” Judging by the number of dead trees I saw, they are going to have to re-plant a lot of the trees or risk losing their grant.

What needs to happen

What has happened at Kinrara shows that the Scottish Government's approach to woodland expansion is completely unfit for purpose and in need of radical reform. Stopping the planting juggernaut is not going to be easy because most people have still not appreciated that planting a few trees locally in disturbed soils around settlements – I do it too! – is a very different things to planting thousands of trees on undisturbed soils like peat. I hope this post helps more people to see the difference and start challenging why we are using public money in this way instead of reducing deer numbers and leaving the rest to nature.

Unfortunately, the Scottish Government has just committed to a new version of the UK Forestry Standard (see here) which sets Britain apart from most of the rest of Europe where planting, deer fences, gigantic tracks and clearfell are the exception, not the rule. If Mairi Gougeon, the Minister responsible, stopped listening to people with vested interests and visited the estates in Cairngorm Connect, on the one hand, and Kinrara on the other, perhaps she would realise the Scottish Government's mistake.

In terms of actions and policy change the following would be a start:

- BrewDog should not replace the dead trees on site even if it means losing their grant. Instead, they need to put their money where their mouth is and restore the destruction they have caused, starting with the areas of bare and upturned peat. That is likely to cost several £million.
- BrewDog should abandon their Phase 2 plans for the Lost Forest on the Dulnain side of Kinrara now. There is even more peatland on that side of the estate and also important remnants of the Caledonian pine forest (see here).
- The Cairngorms National Park Authority Board should invite the Minister for National Parks, Lorna Slater, to visit Kinrara with them, take a look for themselves at the disaster and consider how they could make their policy presumption in favour of natural regeneration work in future.
- The Scottish Government should sponsor independent research into the impact that the construction of the Lost Forest has had on the natural environment and carbon emissions. That should include a report on how many of the planted trees have died this year and the lessons to be learned from this in the light of climate change.
- The Scottish Government should impose an immediate moratorium on any further planting on peaty soils. They accepted the scientific analysis by Forest Research, which found that ploughing on soils with an organic layer greater than 10cm represented a significant risk of soil carbon emissions, and now need to apply the implications of that research to other destructive forestry techniques such as mounding and scraping.
- The Woodland Grants Scheme in its current form should be scrapped. The money should be redirected into deer control to support natural regeneration in the uplands and planting hardwoods for timber in lowland areas (which have much greater potential to lock up carbon than trees like birch). If the Scottish Government also banned muirburn and left the rest to nature, it could for the first time ever achieve its aspirations for the right tree in the right place.

Category

1. Cairngorms

Tags

1. BrewDog
2. carbon emissions
3. forestry
4. natural environment
5. natural regeneration
6. scottish forestry

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