Woodland regeneration & grazing in SW Norway

An Erasmus+ NET Key Action 1 project, co-ordinated by the firm of ARCH and hosted by Duncan Halley of NINA

2-9 September 2019

‘Similar to Scotland in many ways; but so different...’

10 excited participants from a range of organisations (John Muir Trust, University of Oxford, Trees for Life, RSPB Scotland, Scottish Natural Heritage, Cairngorms Connect & The Woodland Trust) enjoyed a fascinating and information packed week long experience organised and led by Duncan Halley of the Norsk Institutt for Naturforskning (NINA).

We travelled from sea level to 1343m and from the equivalents of Glen Nevis to the Cairngorms with lots of discussion, observation and a good few wildlife treats along the way. Local perspectives were also gleaned from two speakers involved in land management at both a Kommune and Municipality scale.

The natural recovery of species and communities was amazing to witness and is still in a state of ongoing change as large herbivore populations and agricultural practices continue to develop over time. It was striking to learn about the different cultural, social and political approach to land use and ownership, and fascinating to learn about their methods of sustainable resource management. Tensions still exist between development, agriculture, forestry, tourism and nature conservation, but the nation’s proactive can-do attitude mixed with a strong community ethic seems to mean they find common ground more often than not.

Allemannsrett

“All man’s right” - The right to roam in across all uncultivated land.

A traditional right, made law in the Outdoor Recreation Act in 1957.

The Norwegian Trekking Association (DNT) operates 550 cabins, maintains 22,000 km of marked hiking trails and has >200,000 members.

Foraging

People in Norway have freedom to pick wild berries, mushrooms and wildflowers.

During the trip we saw extensive areas of blaeberry, northern bilberry, crowberry, cowberry and cloudberry.

In Finnmark in northern Norway you can only pick cloudberries to eat on site, to pick cloudberries to take home you need a permit.

Forests in SW Norway from the perspective of Black Grouse

Typical Black Grouse habitat in Norway. Cattle and sheep are grazed here, and some trees removed for timber annually. In the foreground is a permanent open boggy area.

- Forest ownership (and land ownership in general) in Norway is completely different to that of Scotland.
- “Landbruk” is a key concept for the way land is managed.
- Most forest (productive and non-productive) exists as a result of natural regeneration or expansion, not through plantation.

Left - A typical Sitka Spruce plantation in Scotland. Note the complete lack of any developed field layer due to the density of the trees preventing light from reaching the floor.

Right - Plantation forest in Norway. Naturally regenerated 2nd rotation or seeded 1st rotation. The field layer is well developed and diverse as the trees are not too dense so light can reach the floor.

Left - A view up onto the Merrick Kells SAC in Dumfries and Galloway. Black Grouse are just hanging on in this area. Some Red Grouse are present, but the main species are Meadow Pipit and Wren. Grazed by deer year round and cattle in summer.

Right - A woodland valley in Norway, with extensive regeneration across the valley bottom and slopes. Grazed by deer and moose all year and sheep in the summer. Black Grouse, Bluethroat, Brambling and Ring Ouzel thrive here.
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Montane scrub community - comparison with the Cairngorms

As part of the Cairngorms Connect Project, the montane scrub community is to be enhanced and extended through a reduction in browsing pressure (deer stalking in the more remote parts of the project area) and planting of new plants.

Cuttings are being taken from the few remaining willows on the hill to be grown on in a tree nursery. New stock from seed or cuttings will be used to create successful restoration of diverse communities. Seed from high altitude birch species (*Betula nana* and *B. pubescens tortuosa*) will also be gathered for propagation and planting out.

Reduction in deer browsing should also see a resulting recovery in the dwarf shrub community, so well demonstrated in the fantastically diverse Norwegian examples we visited.

The huge reduction in grazing pressure experienced in Norway over the last 80 years has allowed these communities to re-establish themselves. Not so in the Cairngorms where grazing and browsing levels have remained high, almost wiping out the birch zone and montane scrub.

Bjaen, Bykle Kommune, approx 1000m

Northern Cairngorms, approx 700m. Note complete absence of willows and birches, and the lack of diversity in ground flora

Montane willow recovery work in Cairngorms

Montane willows and juniper near Oyuvsbu, 1000m.

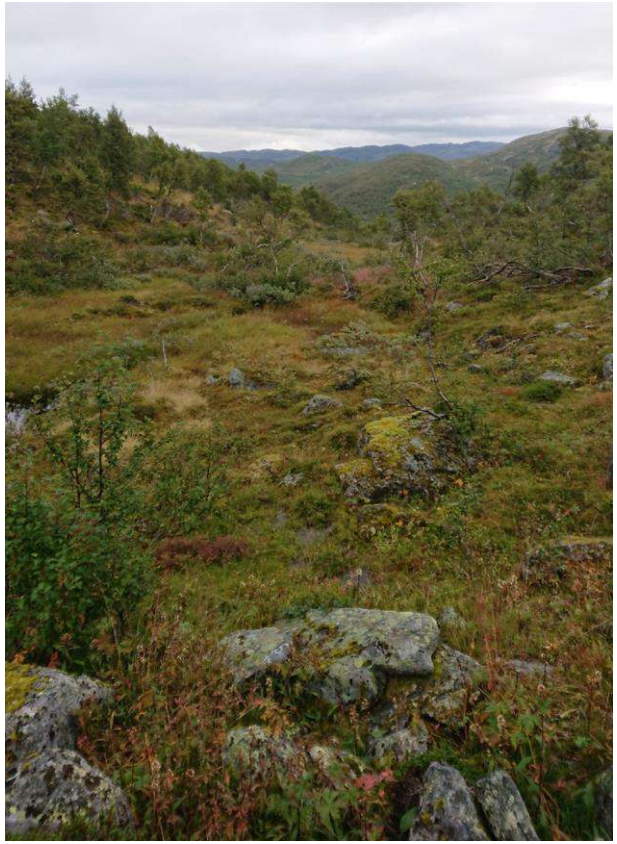
Downy willow cutting in the Forest Lodge Tree Nursery, RSPB Abernethy.

One of the remaining willows in Loch Avon, RSPB Abernethy, 885m.

Ground flora

We noticed that the upland plant community in Norway was far more diverse than in similar environments in the Cairngorms.

In Norway, the ground flora never seemed dominated by a single species, in stark contrast to the vast monocultures (in particular of heather and graminoids) that are so widespread in Scotland.



Halsenden, Norway, approx. 1000m

NW Cairngorms, approx. 1000m

Comparison between Glen nevis and Fidjadalen

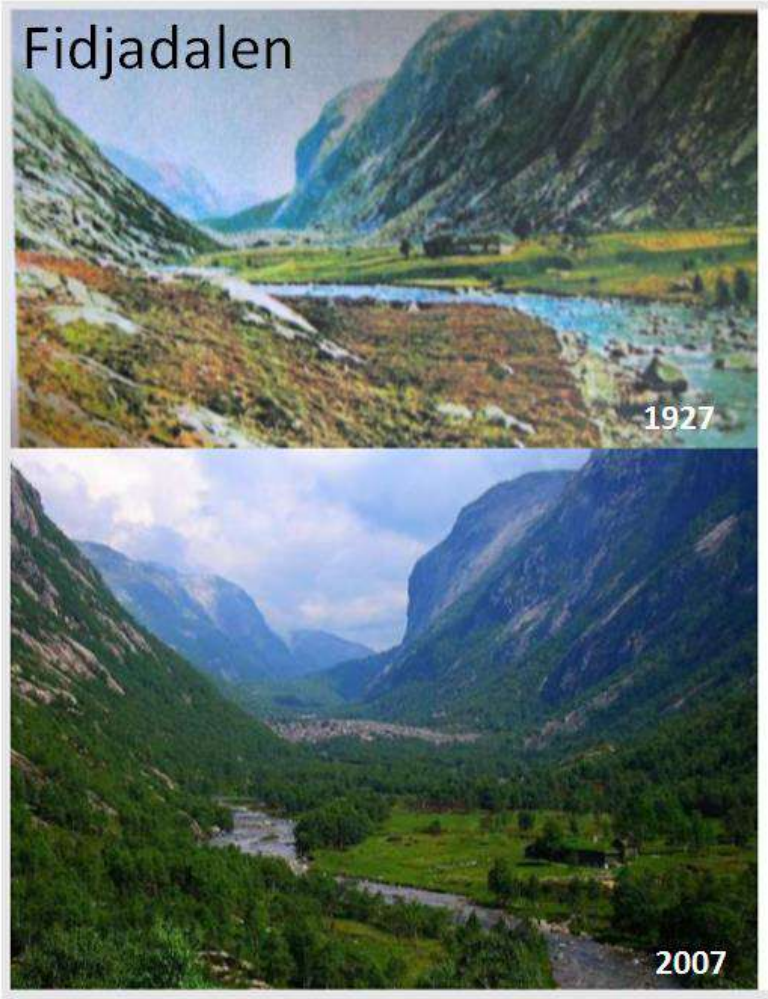
- Same climate- rainfall,temp,wind
- Similar geology acidic granite, gneiss, poor soils
- Comparable latitude (fidjadalen 200 miles more northerly

Fidjadalen history

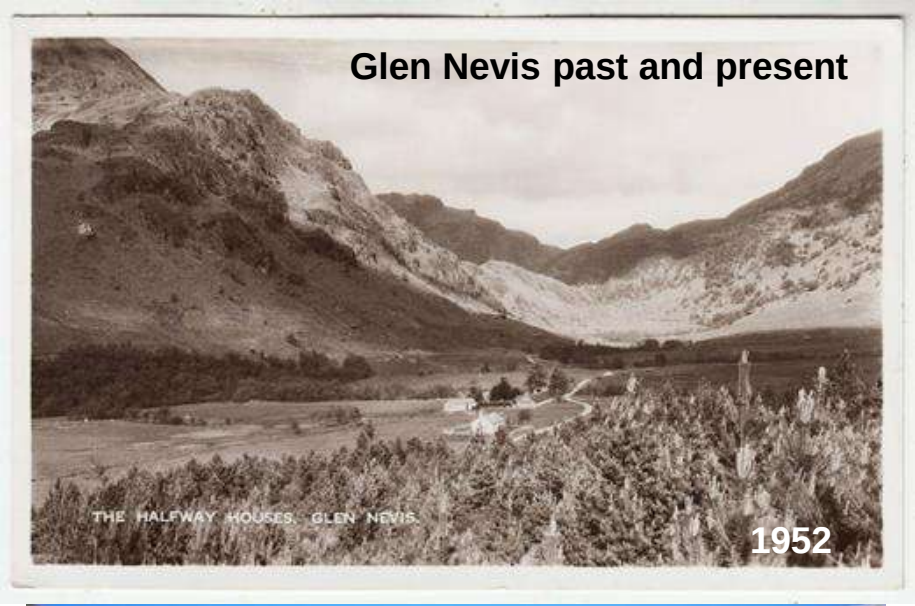
- 3 sheep farms abandoned 1930's
- Summer grazing sheep at present
- Natural regeneration of woodland since sheep numbers reduced
- Riparian woodland, natural treeline

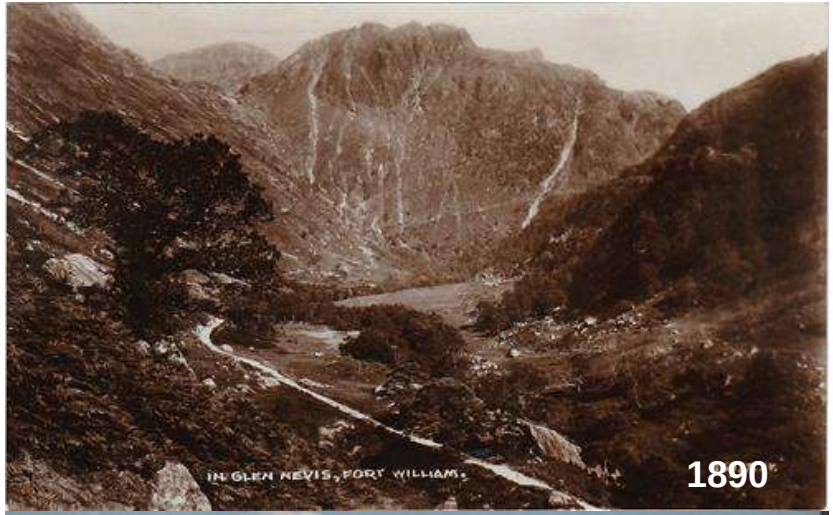
Glen Nevis History

- 2 shepherds huts 1700's-1930's
- Reduction of sheep from 1930's no sheep in upper glen now
- Deer increase from 1800's onwards
- Some regeneration of woodland in mid glen where most busy,
- No woodland regeneration in upper glen with higher deer numbers



Glen Nevis past and present





Fidjadalen 2019

Glen nevis (upper) 2019

Browsing pressure & and hunting: deer in SW Norway

- The role of the State
- Agreeing Management Plans
- Stakeholder support (a democratic & collaborative approach)
- Delivery – cull quotas are both a right and responsibility
- Hunting culture



Current deer management system in SW Norway

- Sustainable harvestable yield
- Evidence lead decision-making
- The deer weights proxy - a long-term quantative dataset
- ‘*sunnhet’ (thriviness)*

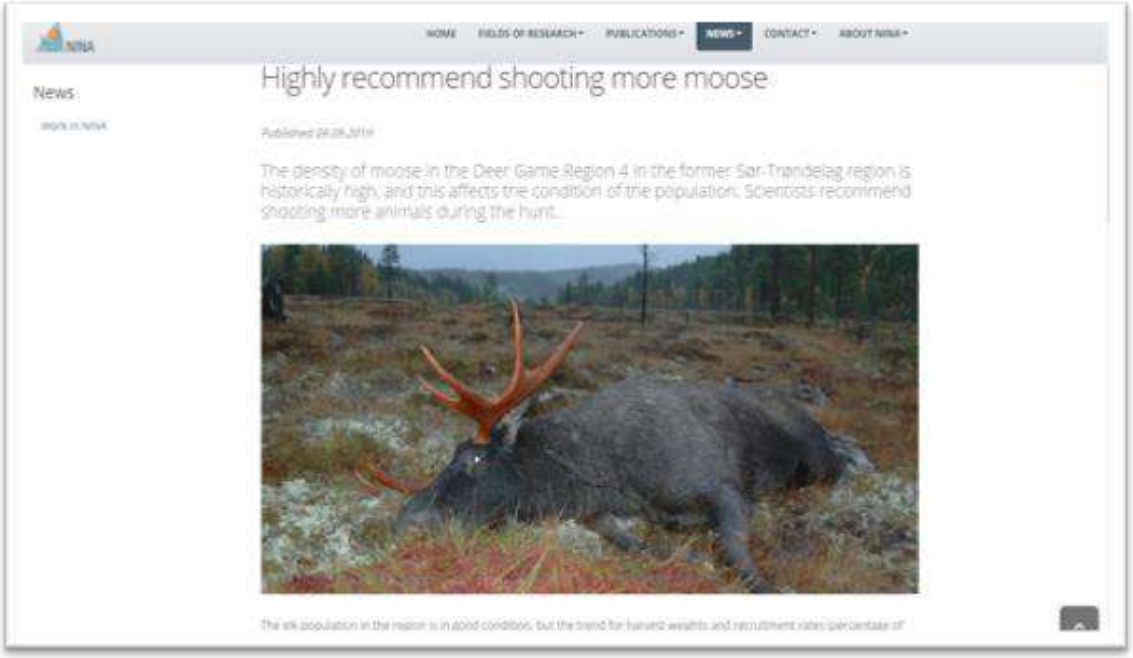


Figure taken from NINA website shortly after our return, demonstrating the adaptive management approach adopted

Comparing hunting cultures

- Harvesting game
- Self financing – quotas can sold
- Strong sense of ‘local’ and ‘connectedness’
- Different outlook on hunting effort

Learning from the Norwegian ways

How does Scotland compare?

Three concepts that stood out…

‘Plukkehøgst’

This translates as ‘pluck felling’ and is the dominant strategy in the SW of Norway where forests are thinned very selectively, and done so mostly by farmers as part of their winter work. In Scotland we might compare this style as 'continuous cover forestry' (‘CCF’).

- Both avoid big clear fell areas, and instead focus on maintaining a varied structure and varied age of trees.
- An important note is that this system is built upon maintaining small-scale land-ownership, productivity, and recreation. This is an ideal for Scotland, where so often these three things are in conflict.

Forestry coop

https://www.skog.no/om-oss/about-us-englis

at skog

VESTSKOG

ALLSKOG SKOGEIERE NORDAFJELLS

MJØSEN SKOG

HAVASS SKOG

VIKEN SKOG

‘Dugnad’

This roughly translates as ‘duty’ but is more of a concept within every Norwegian’s life.

The idea is that people (often within a particularly community) come together to do something, like a volunteering day, but there is an expectation that everyone will join in and do. Everyone is an individual and an equal when taking part, and the process is a time of coming together and contributing to whichever community you are a part of (perhaps multiple).

- There is no shortage of volunteer conservation activity in Scotland, but how much of it is community led and community orientated?
- Perhaps there is a way to branch out from our niche volunteer work parties, or look at how people might come together and be involved in all sorts of tasks, for the betterment of our local landscapes.
- As one of our speakers Per Kristian Austebø said: “It helps when living at the edge of Europe to get things done...no one else is going to do it for you”

‘Vis sunnhet’

‘Vis sunnhet’ (2 words) means ‘show’ (vis) ‘thriviness’ (sunnhet)

sunnhet | substantiv 1. health; *se ut som sunnheten selv* - look the picture of health; *strutte av sunnhet*, be bursting with health

It’s a usual statement in Norwegian management plans that the deer population should ‘vis sunnhet’, i.e. be in a thriving condition as individuals and collectively.

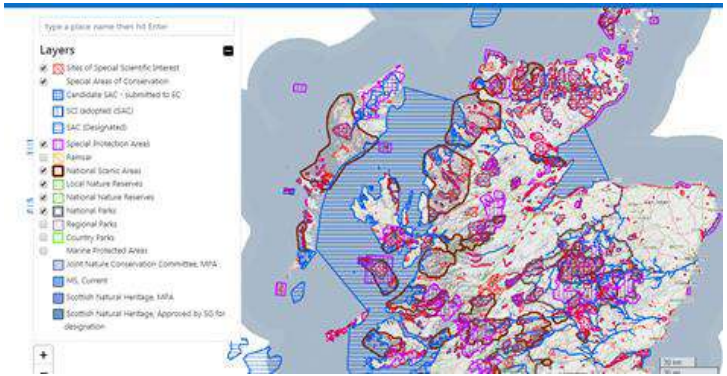
- Hunting is a much more socially widespread activity compared to the hunting and stalking practices of Scotland.
- The average Norwegian has more connection with deer, (moose, and reindeer) than the average Scot does.
- We describe deer in almost mythical terms, majestic and foreign. Or in management, in terms of culls.
- There seems to be a disconnection between people and the land in Scotland, which becomes apparent when we look at our language. It was therefore illuminating to understand more about this Norwegian concept in relation to their deer management and hunting culture.

Protected areas in Norway

The main forms of protection under the Nature Diversity Act (2009) include:

- National Parks
- Protected Landscapes
- Nature Reserves

The maps below compare coverage of protected areas in Highland Region and south-west Norway (from: https://sitelink.nature.scot/ and https://www.environment.no/topics/biodiversity/protected-areas/).



Norway - past and present browsing levels and woodland cover

Norway has not always contained the wonderful diversity of woodland habitats we saw during our visit! Woodland regeneration coincided with a period of very low grazing in the late 19th/early 20th centuries, and a further period in the 1950s. Low grazing levels were due to cultural and societal changes, but resulted in a dramatic increase in woodland cover. Almost all reforestation occurred through natural regeneration.

The diversity in the understorey and ground vegetation was notable in all woodland zones with extensive areas of dwarf cornel, bog rosemary, blaeberry, northern bilberry, cloudberry, crowberry, juniper and montane willows:

Woodland management - benefits from Norway

Achieving regeneration is possible in Scotland, but our starting point is a very different one to Norway's. We still have active grazing in the Highlands - crofting is of considerable cultural value and biodiversity importance and deer are valued as an important part of our rural economy, culture and biodiversity. Although the situation is different the benefits to land managers of achieving successful regeneration are the same:

- Robust areas of woodland cover can provide good shelter for grazing animals. These can be re-established in a relatively short period of time. This is turn offers a greater diversity of grazing and potential improvements in stock condition. Woodland and agricultural are not viewed as separate entities in Norway, but are integrated, usually occurring on the same land holding.
- Woodland in good condition offers a range of biodiversity benefits. In economic terms, this includes benefits to pollinators, fruit and fungi harvesters, hunting and fishing.
- Establishing more woodland allows the herbivore pressure to be spread over a wider area. In areas of Norway where grazing has re-established, the volume of woodland means browsing is not high enough to significantly check regeneration.
- Increased resilience against climate change and extreme events such as flooding.

Conclusions

- It was amazing to explore the regenerating forests in SW Norway and to understand better how native forests can develop with a lower browsing pressure.
- Deer management practices differ between Norway and Scotland, with carcass weights used to determine deer quotas in Norway, indicating the overall health of the population and helping to balance its impacts on woodland regeneration.
- Cultural and social factors have influenced the woodland regeneration we saw, from the abandonment of farms over the 20th Century to the different attitudes to hunting, foraging and land-use in Norway.
- The diversity of species and structure in the Norwegian forest sets an example for us to aspire to in Scotland, and we need to consider how to integrate a rebounding forest within Scotland's cultural and social setting.