The Scottish Highlands: People and Rewilding

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Much of the Highlands are in a degraded condition

Standing dead Scots pine, or snag, in a deforested area.

Stumps of a vanished pine forest, exposed in eroding peat in a highly depleted and impoverished landscape.
Much of the Highlands are in a degraded condition

In the absence of riparian forest, erosion is occurring on these riverbanks, with large blocks of peat washed downstream.

This ruin of a croft house and the blocks of eroded peat here are symbols of the massive environmental degradation and depopulation that has occurred in the Highlands. As in North America and Australia, the native people were forcibly removed from the land in the Highland Clearances of the second half of the 18th century.
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Two Highland landscapes in Glen Affric, about 2 km. apart...

Much of the Highlands of Scotland were once forested like this.

Now the forest is almost all gone & the remaining trees are at the end of their lives.

... show the magnitude of what has been lost, but also the opportunity for restoration and rewilding.
Much of the Highlands is in a highly depleted condition

* Native forest cover is only a small percentage of its former extent.

* Populations of many species (eg Scottish wildcat, wood ants) are fragmented and greatly reduced.

* Important species have been extirpated, including keystone species (eg European beaver) and large carnivores.

* Crucial ecological processes (eg succession, disturbance, predation) are not functioning.

* Human pressures maintain the land in a condition of impoverishment, through overgrazing, muirburn, waterlogging of soils, and the export of sheep and deer carcasses etc.

* Deforested riparian area, unable to regenerate, in Glen Affric.
Many areas are in a state of arrested succession

Arrested succession occurs when the natural process of succession from one vegetation community to another is prevented.

Peat hags are an example of arrested succession, where mire vegetation is unable to grow and re-colonise the exposed peat.

Here, in this area protected by a fence, heather is flourishing and a young birch tree is growing in the absence of overgrazing. On the other side of the fence, arrested succession predominates and heather (and new trees) are unable to grow.
Overgrazing by deer and sheep prevents forest recovery

Red deer are woodland animals, but their numbers are completely out of balance with the remaining forest, and every seedling that germinates gets eaten.

As a result of this overgrazing, only a few old trees remain, as a ‘geriatric forest’, with no new ones growing to replace them as they die.
Overgrazing by deer prevents forest recovery

Heavily-overgrazed rowan, West Affric, October 1992

May 1996

May 1999 May 2004 July 2008

June 2012
Excluding deer and sheep enables natural regeneration to take place.

Natural regeneration area in Glen Strathfarrar in 1987, 7 years after it was fenced to exclude deer. The same area in 2009. The young trees are large enough to be safe from deer, so the fence has been removed.
Excluding deer and sheep enables natural regeneration to take place

Naturally-regenerating Scots pine inside a fenced exclosure, 2 years after the fence was erected in 1990.

The same tree in September 2012 - it produces cones each year now, furthering the restoration process.

Natural regeneration is the best option for restoration
Rewilding begins with restoring healthy habitats

Dead Scots pines in a dying forest, when the area was fenced for regeneration in 1990. No young trees were able to grow until then.

The same area in September 2012, with a new generation of pines and birches now growing healthily, after 22 years of protection.
Where natural regeneration is unlikely to occur, tree planting is the next best option.

Volunteers of all ages can take part in planting trees.
Rewilding – restoring healthy natural habitats

Left: Planting a pine in Glen Affric in April 1991.

Bottom left: The same scene in 2002.

Below: May 2011, after 20 years of no grazing.
Young Caledonian Forest planted by volunteers

To date over 1 million trees have been planted by Trees for Life volunteers
Rewilding involves the recovery of the whole ecosystem

Photo taken 16 years after fencing and planting. Note the difference in the ground vegetation – ecological succession is occurring again.
Rewilding involves the recovery of the whole ecosystem

Planted pines, regenerating birch and recovering ground vegetation inside the fence – only stumps and grass outside.

The process of succession from grassland to dry heath is clearly visible here, after 17 years of no grazing.
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Wildlife benefitting from ecological restoration

Top left: Green hairstreak butterfly (*Callophrys rubi*) feeding on eared willow flowers.

Above: Crested tit (*Parus cristatus*).

Left: Sawfly larva (*Nematus pravus*) on dwarf birch – the first record for this species in the UK.

All photographs taken on young trees growing in areas where the forest is being restored.
Rewilding – the return of the missing mammals

A trial reintroduction of European beavers, a keystone species in riparian and aquatic ecosystems, is underway in Argyll, and a *de facto* wild population of beavers has become established in the River Tay catchment.

Various projects are utilising wild boar for their ‘ecological engineering’ services of soil disturbance and bracken control. Feral populations of boar have become established in several parts of Scotland.
Rewilding – the return of the missing predators?

* There have been no large terrestrial carnivores in Scotland since the extirpation of the wolf in 1743.

* The absence of predators, and the top-down regulation of ecosystems they provide, has compounded the ecological problems in Scotland.

* There are increasing calls for the reinstatement of predators, in recognition of their essential role in maintaining healthy ecosystems, based on experience elsewhere (e.g., wolves in Yellowstone National Park, USA).

* The Eurasian lynx is the carnivore that is most likely to be given serious consideration for reintroduction to Scotland in the near future.

Photo © Peter Cairns
The transformative effects of working for Rewilding

One definition of ecological restoration is ‘helping to reconnect the strands in the web of life’.

Although this is usually applied to ecosystems, it applies equally to people’s connection with the rest of Nature.
Ecological Restoration is the Work which Reconnects

Participating in Rewilding projects can reconnect people with some of the most important things in life

* with the rest of Nature
* with place
* with life
* with each other

Protecting a young juniper
Ecological Restoration is the Work which Reconnects

Participating in Rewilding projects can reconnect people with some of the most important things in life

* with their own power
* with healing
* with hope
* with spirit

Volunteers from Madagascar

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Rewilding provides an opportunity for each of us to make a positive difference to the land, and in the world.

We can draw inspiration from our connection with Nature, and bring the care of our hearts to a ‘labour of love’ that can accelerate the healing of the land and the restoration of healthy ecosystems.
Participating in rewilding can have a profound effect on people

“Even when the last scrap of dirt is washed out from under my nails I will still keep growing the seeds of inspiration that Trees for Life planted in me.”

Sara, Brighton

“The work I did to help restore the Caledonian Forest really was rewarding. It is an opportunity to learn something new in a beautiful environment and contribute to a fantastic vision for our future generations. I will undoubtedly be back …”

Harriet, London

“This week was good for body and soul.”

Michael, Leeds
Participating in rewilding changes lives…

Adam Griffin


* Trained as a group leader in 1995.

* Organised Sponsored Walks on Dartmoor & ran stands for Trees for Life at Glastonbury & other festivals.

* Set up Moor Trees as a charity dedicated to restoring native woodland on Dartmoor in England in 1999.
Participating in rewilding changes lives…

Jennie Martin

* Took part in 5 consecutive Volunteer Weeks in 1995.

* Became Trees for Life’s first Volunteer Week coordinator, & set up our Leader Training programme.

* Began taking groups of school children to the Caledonian Forest in 1998.

Rewilding, and restoring the Caledonian Forest, is changing life in Scotland …

In the last 30 years there’s been a tremendous upsurge of awareness, concern and action to protect and expand Scotland’s native forests.

It is no coincidence that this has been paralleled by reclaiming control over our own governance. The Scottish Parliament was established in 1999, and a referendum on Scottish independence will take place in 2014.

As all native peoples know, a strong connection with the land, and responsibility for its health, is vital for the health of society.
Rewilding, and restoring the Caledonian Forest, is changing life in Scotland …

“... to stand amongst the ancient pines is to feel the past.”

Professor H. M. Steven

Planting a pine gives birth to the ancient forests of the future, and is helping to shape the future of our nation.
Imagine a beautiful, restored forest …

… the future of our forests is in our hands
The need for restoration & rewilding is global

This photograph of the Earth from space shows a wounded world - the most obvious features are the desertified areas.

People everywhere need to engage in rewilding and restoration.

The wellbeing and diversity of our planet, and all species, is in our hands.
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