



HOW WILDNESS IS LOST
250 years of encroachment into the Scottish hills

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How wildness is lost: 250 years of encroachment into the hills

This article illustrates in rough chronological order the main changes to the Highland landscape over the centuries. It considers only the wild, uncultivated land, not the settlements and the land around where signs of human impact would always have been high, as shown in the picture below.

Up until the 1800s there would have been summer shielings distant from the settlements in the areas of better grazing, but it is unlikely their presence would have dramatically altered the surrounding landscape. Nowadays the signs of the small shieling buildings are slowly disappearing, reclaimed by nature. Roads were

absent before the military roads of the 1700s.

Before the Highland Clearances and the era of Victorian shooting estates, the land was not managed as such although it was used for grazing, hunting and peat cutting and, where present and near habitation, the exploitation of woods.

A naturally wild landscape

Landscapes where the vegetation pattern is determined by natural processes (*i.e.* is not designed by humans) and where infrastructure is absent can be termed natural landscapes. Where such landscapes



This article considers the land beyond the areas of settlement, *i.e.* the unenclosed hill land as shown here above Achiltibuie.

are still found in the Highlands they represent some of the most natural remaining in Europe – although they are becoming increasingly rare.

“The next day I travelled over an exceeding high mountain, called mount Skeene ... and withall, a most familiar mist embraced me round, that I could not see thrice my length any way : withall, it yielded so friendly a deaw, that it did moisten thorow my clothes ; where the old proverb of a Scottish miste was verified, in wetting me to the skinne. Up and downe, I think this hill is six miles, the way so uneven, stony, and full of bogges, quagmires, and long heath, that a dogge with three legs will out-runne a horse with four ...”

Taylor, The Water Poet, in 1618 on Mount Keen (939m)

“As I stood at the height of the road and gazed down on its strange course both ways, I could not help rejoicing that there was at least one place where railways, canals, and steamers and all these devices for sinking hills and raising valleys, and introducing man and levels, and destroying solitude and nature, would for ever be set at defiance.”

Lord Cockburn at the Rest and Be Thankful in 1838



The Highlands: a natural and wild landscape. Beinn Dearg, Ross-shire.

“When cross-country droving in Scotland on an appreciable scale first began, and for many a year thereafter, a great part of the Highland and upland areas of the country was common land, or at the least land which, while nominally owned by the local chieftain, was in fact unused and uncared for.”

*A R B Haldane
The Drove Roads of Scotland, 1952*

“Settlement in the western Highlands and Islands was mainly confined to very limited areas because of the challenging constraints of geology, climate and geography. Therefore, when modern visitors contemplate hills and glens which are empty of people, they should not assume they were inhabited in the past. Or that their present silence and loneliness were necessarily the consequence of later clearance and emigration.”

*Tom Devine
The Scottish Clearances, 2018*



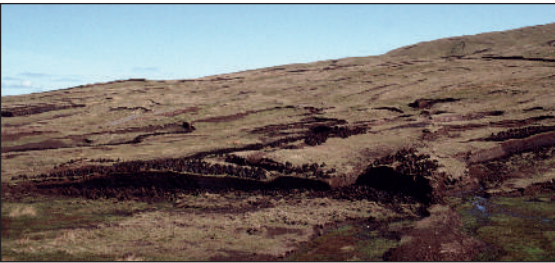
Traditional peat cutting in Wester Ross.

PEAT CUTTINGS

Period: For thousands of years, but the practice is now dying out

Extent: Throughout Scotland

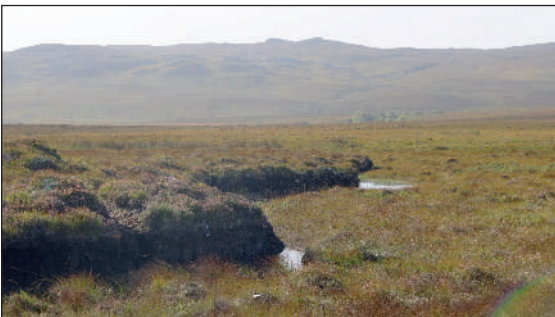
Reversibility: Irreversible (although peat will regrow over thousands of years)



Over the millennia, removal of peat has transformed the landscape. This picture in Shetland.

Peat has always been the main fuel of Scotland. Peat cutting, together with creation of inbye land, probably caused the greatest landscape change throughout the earlier centuries.

Once all the peat near settlements was used up, the people had to travel further and further to win peat. In extreme cases, such as the island of Eriskay, all the peat was exhausted and people were reduced to removing and burning turf, resulting in exposure of bedrock in some places.



Signs of old peat cuttings are visible throughout the Highlands, here at Inverasdale.

Hence much of the flatter land near to existing and earlier settlements consists of land which once was peat-covered. Peat growth may eventually resume, but the process takes thousands of years.



The Wade bridge at Daviot.



Road bridges old and new at Dunbeath.



Kyle of Lochalsh station. This line terminated at Stromeferry in 1870, when the line was opened, and was extended to Kyle in 1897 – which at that time had only half a dozen houses.

ROADS & RAILWAYS

Period: From 1725 onwards

Extent: Throughout the Highlands

Reversibility: Early roads tended to follow the landforms and, when unused, tend to merge back into the landscape. Modern roads with significant landform modification are to all intents and purposes irreversible

Before the building of the first military roads by General Wade, which began in 1725, the mountainous areas of the Highlands were road-less. For most of history, the sea was the main highway. It was only possible for wheeled vehicles to traverse the Highlands after the completion of the road network supervised by Thomas Telford in the early 19th century.

During the Victorian era, the coming of the railways opened up the Highlands to mass visitation.

The development of the road and rail infrastructure in the previously trackless uplands was an essential prerequisite of the subsequent development of the Highlands – which, inevitably, accelerated the loss of wildness.



The remains of a Victorian fence in the Monadhliath, built to separate sheep farms.



The Beinn Eighe ring fence built to exclude deer to allow woodland development.



A modern stock fence below Beinn Chapull in Argyll.

FENCING

Period: From the 18th century onwards

Extent: Throughout the hills and moors

Reversibility: The process is reversible in that the fences can be removed, although experience to-date suggests most will remain in situ even when redundant

As the shieling system (transhumance) died out, first dykes and then fences were built to keep stock out of the inbye land.

Compartmentalisation of the wider landscape began with the erection of fences and dykes as sheep-farm boundaries in the 18th century. These often went over the summits of the hills at over 900 metres altitude. Their remains are still visible today.

Compartmentalisation of the remaining wild areas through fencing remains widespread today. This can be to manage grazing, separate landholdings, protect woodland or for road safety. Particularly common nowadays are long lengths of high deer fencing surrounding new woodland/forestry schemes.

Roadside fencing also subdivides the area: for example, roadside deer fencing from Garve to Loch Maree in effect separates off the northwest Highlands.

VICTORIAN & LATER SHOOTING ESTATES

Period: 19th century

Extent: Throughout the Highlands

Reversibility: Buildings can be removed but access tracks are likely to remain. The pattern of muirburn for grouse is reversible in that if burning ceases the heather stands will recover to full height



Sron na Larig Lodge shooting Lodge in the Monadhliath (recently demolished).



Rotational burning of heather moorland above Corgarff to encourage red grouse.



Stripes of burnt heather above Glen Clunie.

Although there have been castles and strongholds in the Highlands since Pictish times (brochs), these were largely coastal or in the larger straths. The creation of the Victorian shooting estates caused access tracks and shooting lodges to be built in the heart of the mountains. Before this period the areas would have been road-less. Where the glens and straths were inhabited, there would have been turf houses and smaller shieling huts.

Management of moorland for grouse through rotational heather burning has resulted in an unnatural patchwork pattern on the hills and moors. Although such burning has been carried out since at least the 19th century, it has probably increased in intensity in recent decades.



A spruce plantation on heather moorland above Strathnairn, with extensive plantations in the background.



Ground preparation for tree planting causes major landscape change. Top: mounding above Inveralligin. Bottom: ploughing a whole hillside on Dava Moor.



A new native woodland plantation above Loch Bad an Sgalaid in Wester Ross.

FORESTRY PLANTATIONS

Period: From the 1750s; major expansion post-1919; recent expansion of native wood plantations from 2000

Extent: Throughout

Reversibility: Irreversible (through soil changes, including ground preparation)

The adding of trees to the landscape is the greatest cause of landscape change in the Highlands. The ecological conditions of the area are such that woodland would naturally be of restricted distribution (less than 10% land cover), with the landscape of hills and moors largely open as would be expected in this, the oligocratic phase, of an interglacial.

‘Improving’ estate owners started creating plantations in the 1750s, although these were at first of limited extent. The process accelerated rapidly following the creation of the Forestry Commission in 1919, when there was government policy to create a strategic reserve of timber. In some areas whole upland farms were planted.

The commercial forests which have transformed the landscape consist primarily of non-native conifers, with Sitka spruce now the main species planted.

THE ORIGINAL HYDRO-ELECTRIC SCHEMES

Period: 1895-1975

Extent: Throughout the Highlands

Reversibility: Irreversible owing to the volume of concrete and draw-down zones



The Ben Cruachan dam.



The drawdown zone around Loch Cluanie when water levels are low.



A modern Highland landscape north of Loch Tay showing a hydro pipe, tailings from a hydro tunnel and commercial forestry plantations.

Construction of the first large-scale hydro-electricity scheme in Britain began in 1895 at Foyers to provide power for aluminium smelting. Thereafter large scale schemes were constructed for smelters in Kinlochleven and Fort William.

With the formation of the North Scotland Hydro-Electric Board in 1943, an era of dam building began, so that by 1975 over half the catchments of the Highlands possessed large-scale hydro schemes.

Most of the easily exploitable catchments have now been developed, so that future hydro-electric schemes will be relatively small-scale.

The middle picture shows the bare rock which appears when reservoir levels are low.

Associated with the reservoirs are tracks, borrow-pits, tailings, pipes and power-houses. Most such schemes also have a network of smaller dams, channels and pipes to funnel water from the tributaries to the main reservoirs.

AGRICULTURAL IMPROVEMENT

Period: For thousands of years, with major expansion ca.1950-1970

Extent: Fringes of hills and moorland

Reversibility: Reversible in the long term: abandoned land can over time regain a natural vegetation cover. Ditching can be irreversible if it leads to erosion



An area of improved pasture on Ashie Moor, south of Inverness



Pasture created out of the raised bog of Mòine Mhòr south of Kilmartin.



A ditch ploughed through blanket peat, a once common practice throughout the UK uplands to improve grazing (moor-gripping).

Land has been taken in for agriculture for as long as there has been cropping of cereals, grass and vegetables. In the Highlands away from the east coast, the area of arable land has only ever been a very small percentage of the whole landscape. This is because, except in favoured low altitude areas, climate and soils preclude arable farming. It has been restricted to the vicinity of settlements, *i.e.* favoured coastal areas, and the floors of certain glens /straths.

Many of the level areas of raised beaches and the flat-bottoms of the glens and straths which are now agricultural land would originally have consisted of raised peat bogs. These have disappeared through peat cutting, drainage and agricultural improvement.

Grant-aid has resulted in extensive areas of moorland being converted to pasture, particularly in the 1950s and 1960s. It also resulted in patterns of moor grips (ditches) being ploughed even in remote areas distant from settlements.



Footpaths below the Northern Corries of the Cairngorms.



An eroding path above Bridge of Orchy.



An improved (repaired) path in Glen Coe.



Tracks from from ATV vehicles above Inverasdale.

FOOTPATHS AND ATV ROUTES

Period: 1800s onwards

Extent: Throughout the Highlands

Reversibility: Reversible (unless the cause of major erosion)

Foot and pony paths into the high hills were first constructed on the sporting estates in the 1800s to provide access for stalkers and their ponies.

With the increase in hill-walking from the 1950s onwards, informal paths began to develop in the hills along the popular walking routes.

These paths often become eroded owing to the wet climate and peaty soils. Of necessity, many have been converted to constructed footpaths.

With the advent of all terrain vehicles (ATVs) in the 1960s, and more recently quadbikes, vehicles have increasingly been taken into the hills away from formal tracks. Their wheel marks are often visible on the vegetation and they can instigate erosion, particularly where the soils are soft and peaty (lower picture).



A hill track for grouse shooting in the Monadhliath.

HILL TRACKS

Period: Since Victorian times, but primarily in the 20th century and on to the present day

Extent: Throughout the Highlands

Reversibility: Irreversible

Tracks designed to facilitate vehicular access have been increasing in extent throughout the hills and moors, even into the remotest areas. There are now few places more than a mile or two from a track.

They have been built to provide access for farmers, estate workers, shooting clients and hydro-electric schemes. Additionally new commercial forestry plantations, windfarms and masts come with an associated networks of tracks. The construction of modern tracks, particularly those designed to take heavy construction traffic, can result in major importation of hardcore into the area.



A hill track for deer stalking in Coire Buidhe below Ben Sgulaird, Argyll.



A new track above Achnasheen.

Although it is theoretically possible to remove tracks and reinstate the original landform, this is an expensive operation and not always possible in rough and steep terrain.



Above Slochd.

PYLONS, TRANSMISSION LINES AND MASTS

Period: 1940s onwards (pylons); 1990s onwards (mobile phone masts)

Extent: Throughout, although phone masts are primarily along transport corridors

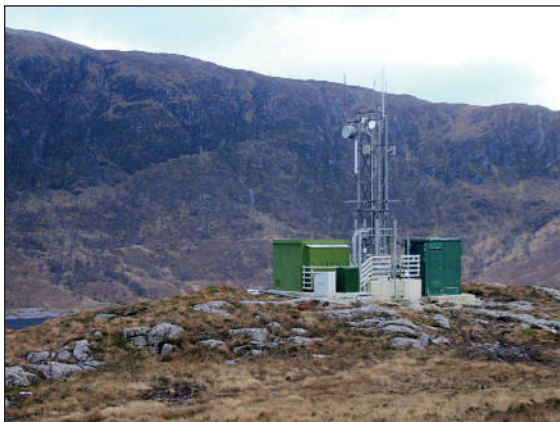
Reversibility: Reversible



Below Ben Cruachan.

Metal pylons came on the scene in the 1940s with the advent of the first large-scale hydro-electric schemes.

Additionally there are numerous power-lines throughout the Highlands carried by smaller wooden poles, again dating from the first hydro-electric power stations.



Above Loch Cluanie.

Although there have been communication masts on some hills since the middle years of the 20th century, the advent of the mobile phone has resulted in masts being built throughout the Highlands. These are generally along the major roads. Many masts have a constructed access track.



The Nevis Range ski area.

DOWNHILL SKI DEVELOPMENT

Period: 1955-1990

Extent: Five localities

Reversibility: Most aspects potentially reversible

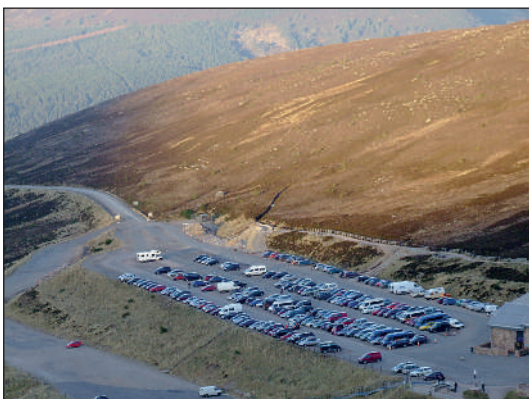
The first permanent ski tow was built in Glencoe in 1956, although skiing enthusiasts had been using Ben Lawers and other hills since the early 20th century. Work started on building the last ski centre, Nevis Range, in 1988.

The ski centres are at The Lecht, Cairn Gorm, Glencoe (Meall a' Bhuiridh). Nevis Range (Aonach Mor) and Glenshee. As well as uplift facilities, infrastructure includes car parks, buildings and snow fences.

Of necessity the ski centres are in mountain areas, and include the sixth highest mountain in Scotland (Cairn Gorm) and the eighth (Aonach Mor).



The Cairngorms ski area.



The car park at Cairn Gorm.



The Farr wind farm in the Monadhliath.



The Farr wind farm, with associated tracks.



The Carraig Gheal wind farm west of Loch Awe.

WIND FARMS

Period: 2005 onwards

Extent: Throughout, although not in National Parks and National Scenic Areas

Reversibility: The turbines are reversible (can be removed), but the concrete foundations, access tracks and borrow pits are in effect irreversible

Windfarms are a characteristic of the 21st century. The tall turbines are generally visible from multiple viewpoints although their visual impact is reversible in that they can be removed.

Their construction necessitates the creation of a network of access tracks, often of long distance. These require large volumes of hardcore as foundation, either won from local borrow pits or imported. Turbine foundations require considerable volumes of concrete (as did the original hydro-electric schemes). It is theoretically possible to remove the tracks, concrete foundations and imported hardcore to reinstate the original landform, but this is an expensive operation and probably not practical.



The new Glendoe pumped storage scheme. This shows the dam under construction to create a high altitude reservoir (over blanket peat).



A new scheme within the Wester Ross National Scenic Area.



One of the new run-of-river hydro schemes in Glen Falloch under construction, within the Loch Lomond and The Trossachs National Park.



A new run-of-river hydro scheme being built at Kingairloch.

NEW HYDRO-ELECTRIC SCHEMES

Period: 2000 onwards

Extent: Throughout the Highlands

Reversibility: Can be reversible or not

With the completion of the last of the major hydro-electric schemes in the 1970s, there was a lull in the construction of new ones. In recent years there has been a revival of interest. As most of the easily exploitable catchments have been developed, effort is now concentrated on pumped-storage schemes and smaller run-of-river schemes.

The top picture shows a dam being built over moorland to form the reservoir for a pumped-storage scheme. The lower pictures show new access tracks associated with the creation of small run-of-river schemes; other associated infrastructure will be a dam, pipe and small power-station.

Such run-of-river schemes are currently being built throughout the Highlands, including the remotest glens.

There are likely to be more of both types of scheme, particularly run-of-river schemes. Currently pumped storage schemes are the only way to temporarily store electricity from renewable energy generation.



An Ordnance Survey trig point in the Monadhliath.

ACCUMULATION OF SMALL-SCALE STRUCTURES

Period: 1800s onwards

Extent: Throughout

Reversibility: Reversible

Shieling sites date back hundreds of years, but their signs on the landscape are slowly fading.

In the 1800s the Ordnance Survey began mapping the Highlands and constructed huts at high altitude near the main triangulation stations (Colby Camps), the remains of which are still visible in some places. Small triangulation pillars (trig points) are a common sight on summits.

Landowners sometimes take diggers into the hills to restructure burns and rivers to improve fishing, particularly canalisation and the deepening of pools.

Grouse shooting estates can create lines of shooting butts and also dig pools for grouse.

Other structures include cairns, signposts, notice boards and footbridges.



A burn on Jura which has been deepened to improve the fishing.



A scrape on a Monadhliath grouse moor built to encourage grouse.



A sign in the Cairngorms.



Scottish Wild Land Group

Working to protect Scotland's species, environment and landscapes



Liathach by James Fenton

The objects of the Group are:

- (a) To promote the conservation of wild land in Scotland;
- (b) To promote public awareness of the problems facing wild land in Scotland;
- (c) To promote and encourage the implementation of good planning policies;
- (d) To co-operate with other bodies to promote the foregoing objects.

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