

GLEN ROY NATIONAL NATURE RESERVE

OVERVIEW NATIONAL NATURE RESERVES

NNRs help protect rare and often fragile wildlife species and habitats that are often internationally important and they aim to promote opportunities for everyone to visit and enjoy these special places. They are magical places where anyone can experience the incredible sights and sounds of Scotland's natural world.

They enable research work to be carried out that allows better understanding of the natural heritage and they help develop new knowledge and skills to improve management of wildlife habitats. Demonstration projects also allow knowledge and experience of land management to be shared with others.

National Nature Reserves (NNRs) are either managed by Scottish Natural Heritage or are privately owned and managed along with the owner under a Nature Reserve Agreement.

HOW TO GET THERE AND FURTHER INFORMATION

You can visit the Glen Roy National Nature Reserve at any time of year. To get there, you should travel four miles up a minor road from Roy Bridge, which is 13 miles east of Fort William on the A86. Bus and train services are available from Fort William to Spean Bridge and Roy Bridge. Bikes can be hired in Fort William and Spean Bridge.

Visitor facilities consist of a car park and viewpoint with interpretive panel that explains how the Parallel Roads were formed by ice-dammed lakes. There are no formal paths but you can see the Parallel Roads and other key features from the public road.

Contact Martin Faulkner, Scottish Natural Heritage, The Governor's House, The Parade, Fort William, PH33 6BA for further information or telephone 01397 704716.

Alternatively, there is a very informative booklet entitled 'Glen Roy: A Landscape Fashioned by Geology' which is available from SNH priced £4.95 or visit the NNR website at <http://www.nnr-scotland.org.uk>

THE SCOTTISH OUTDOOR ACCESS CODE : KNOW THE CODE BEFORE YOU GO

National Nature Reserves offer a great opportunity to see and experience some of the best wildlife and landscapes that Scotland has to offer.

The Scottish Outdoor Access Code helps give you more freedom to enjoy the countryside than ever before. However, make sure what your rights and responsibilities are by visiting www.outdooraccess-scotland.com where the key aspects of taking responsibility for your own actions, respecting the interests of others and caring for the environment are highlighted in detail.

SUPERHERO OR SCIENCE ?

Three parallel straight lines that stretch along the hillsides and away into the distance are the hallmark of the Glen Roy National Nature Reserve.

The 'Parallel Roads of Glen Roy' are now world famous and have challenged some of the finest

In a new feature for *Teachd an Tìr*, we focus on a National Nature Reserve to highlight the importance of these areas, why they are protected and what to expect if you visit one. In this edition, we take an in depth look at Glen Roy National Nature Reserve in Lochaber.

thinkers, geologists and scientists of their time as to what caused them and whether they are natural wonders or man-made.

Was it Celtic superhero Fionn MacCumhail (Fingal), the warrior king that had the roads built to help him hunt deer from horseback or the early Scottish Kings that used Inverlochy Castle, beside Fort William that

Roads of Glen Roy'. He concluded they were indeed ancient shorelines but those of ice-dammed freshwater lakes, not inlets of the sea as Darwin had speculated.

Martin Falkner from SNH in Fort William said: "The findings by Agassiz made the national press with the discovery being as important in the 1840s as getting



View of Brunachan fan which was formed by deposition of sands and gravels carried in a stream flowing from a side valley into Glen Roy

had them built?

Whilst these fanciful myths and legends would be nice to believe, you have to look back much further to get at the real truth.

The conundrum of how these roads had formed has had scientists and geologists as recently as the 1800's dumbfounded. Even Charles Darwin – best known for his 'Theory of Evolution' struggled to find a solution.

Along with the geologist Charles Lyell, Darwin concluded the roads were ancient seashores but could not explain the lack of marine remains and why the roads were so neatly cut. But Darwin unwittingly was part of the way towards an explanation.

It actually took Swiss geologist Louis Agassiz until 1840 to explain the basic phenomena of the 'Parallel

to the moon was in the 1960s."

It took another 20 years for the Scottish geologist Thomas Jamieson to work out the detail of how the lakes were formed in a previous ice age although even now, new discoveries are still being made about what happened at Glen Roy in the last ice age.

SO HOW WERE THE PARALLEL ROADS OF GLEN ROY FORMED?

During the last ice age advancing glaciers dammed a series of huge lakes in the glen leaving behind a set of shorelines (the three parallel roads) along the 350m, 325m and 260m contours.

It all started when glaciers from an ice field initially blocked parts of Glen Roy, Glen Gloy and Glen

Spean. The ice acted as a natural dam, holding back lakes that filled with water running off the surrounding hills.

As the glaciers moved and the lakes filled and drained accordingly, the wave action and frost shattering of the bedrock helped to cut the shorelines at different levels. Then, as temperatures rose, the ice and glaciers retreated to reveal what we know today as the 'Parallel Roads of Glen Roy'.

Glen Roy provides the best evidence in Britain of how a series of ice-dammed lakes formed and then suddenly drained at the end of the last ice age. The area has other glacial landforms including river fans, terraces and landslips.

TIMELINE OF GLEN ROY

Millions of years ago, the area was subject to vast changes not only in its climate but to where it and the rest of Scotland was located in global terms! It has undergone many glacial episodes with short, warmer (interglacial) intervals.

About 12,500 years ago an ice-field formed in the West Highlands. Glaciers from this ice-field blocked the drainage in Glen Roy, Glen Gloy and Glen Spean allowing formation of ice-dammed lakes and the 'Parallel Roads'.

Around a thousand years later, the climate warmed very quickly. The ice dams floated briefly in the melt water. The ice-dammed lakes in the area drained catastrophically and completely. The rush of melt water carried rock and gravel as far as Inverness!

Ten thousand years ago, woodland became established in the area and evidence of woodland clearance by humans is evidenced 4,000 years after this.

Since then, humans have made significant land improvements and forest clearance and the local features have experienced enhanced slope erosion and gully formation. The West side of Glen Roy was designated as an NNR in 1970.

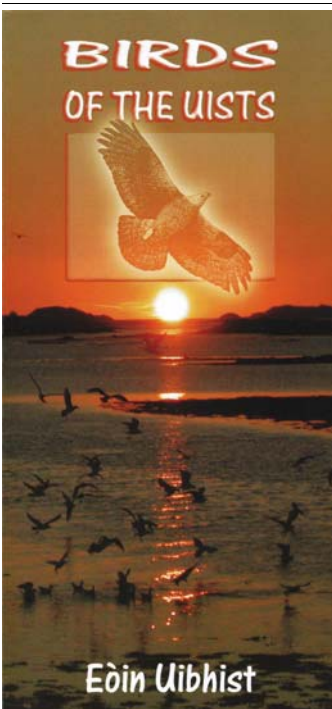
GLEN ROY TODAY AND THE RECENT PAST

By the late 18th and early 19th centuries, the Parallel Roads were one of the most visited sights in Scotland by those that could afford to travel there. In the early part of the 19th century groups of houses with farmland beside them could be seen right up the glen. However, the Highland Clearances forced many of these Gaelic speaking people from these townships to the far corners of the world. Although there is very little evidence of these now, people can trace their ancestry back to Glen Roy and the surrounding area.

The more fertile land and woodland shelter of the lower glen is however still crofted but this gives way to wetland heath, unimproved grassland and bracken on the slopes at its head.

Scottish Natural Heritage own the NNR but in reality it is managed by Bohuntine Common Grazings. A corbett (peak above 2,500 ft) can be accessed from the NNR and the River Roy is recognised as a great canoeing river.

Red deer, golden eagles, buzzards and ravens all frequent the area and there are pockets of native birch and oak woodland. Meadows of wild flowers add to a rich and varied flora and fauna in the area.



BIRDS OF UIST

A new leaflet on 'Birds of the Uists' or 'Eòin Uibhist' has just been published by the North Uist Partnership, with help from Curragag, the Western Isles Natural History Society.

Jamie Boyle, the RSPB's warden at Balranald in North Uist, has provided a bilingual description of the common birds people might encounter around the Uists. Delightful sketches have been provided by Andrew Stevenson of SNH, who is also bird recorder for the Outer Hebrides.

The leaflet which is free from local outlets was designed by Rona Womersley and produced with financial assistance from Comhairle nan Eilean Siar (Western Isles Council) and Forward Scotland.

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RESPONSIBLE FOSSIL COLLECTING

As a hobby, fossil collecting is exciting and rewarding, and is quite often the route through which children and others develop an interest in Earth science and the natural environment. Amateur collecting tends to be small-scale and impinges little upon the fossil heritage.

However, irresponsible collecting has seen the destruction and removal of important fossil horizons to the point that in a few Sites of Special Scientific Interest (SSSIs), they are considered no longer to be of national importance.

In the hands of unscrupulous collectors, rock saws, mechanical diggers and even explosives have been used to extract rare and precious fossils, causing irreversible damage to the fossil heritage.

More often than not the irresponsible removal of a fossil means that crucial contextual details including location, have not been recorded. Fortunately, in time, a number of such fossils may end up in a museum where they are utilised and safeguarded for the benefit of all.

IN FOCUS - IGNORANCE DAMAGES FOSSIL INTEREST

On the Isle of Skye, it is a depressing fact that most of the dinosaur bone finds have been partially destroyed by fossil or curio hunters, before rescue has occurred.

Evidence at a quarry in the north of the country, showed that a collector in a dinosaur case had likely smashed excess fossil material to pieces merely to allow him or her to transport it all home!



The aftermath of irresponsible collecting activity at Cruaday Quarry in Orkney. A rock saw has been used to remove fossil fish from a slab of rock that had been used for educational purposes.

DEFINITIVE BIRD GUIDE GETS GREEN LIGHT

With interest in birds and bird watching in Scotland at an all time high, The Scottish Ornithologist's Club (SOC) has used a £40,000 SNH contribution, embarked on a major new project to document the 500 kinds of birds ever recorded in Scotland.

The project will see North West Scotland's rich and varied birdlife feature strongly in the avifauna – a collective term used to describe birds of a region or country. Local species such as corncrake, black-throated diver and golden eagle will be highlighted but

the more mundane and familiar species like the wren and song thrush – both of which have distinct Hebridean subspecies – will be included.

The SOC who organise bird recording in Scotland, will bring together decades of information that highlight those species which are thriving and those which are of conservation concern. With more survey work and recording of birds being undertaken than ever before, the publication will be published in two volumes and will include maps, diagrams and photographs.

It will also contain up to date population estimates and changes of distribution, as well as a number of introductory chapters on the history and development of Scottish ornithology. This will include bird photography, geography, weather and climate, migration, survey work and conservation.

Over 150 volunteer authors, many of whom are acknowledged as experts on particular species will contribute the species accounts for the publication. These will update the classic 'Birds of Scotland' by

Evelyn Baxter and Leonora Rintoul from 1953, and its follow-up by Valerie Thom in 1986.

It is likely the book will be published by Autumn 2007 and the editorial committee are still fund raising as well as taking pre-publication orders. If you are interested in helping out or ordering the book please contact: Mike Betts, 10 St Bernard's Row, Edinburgh, EH4 1HW. E-mail: mike@betts10.fsnet.co.uk