

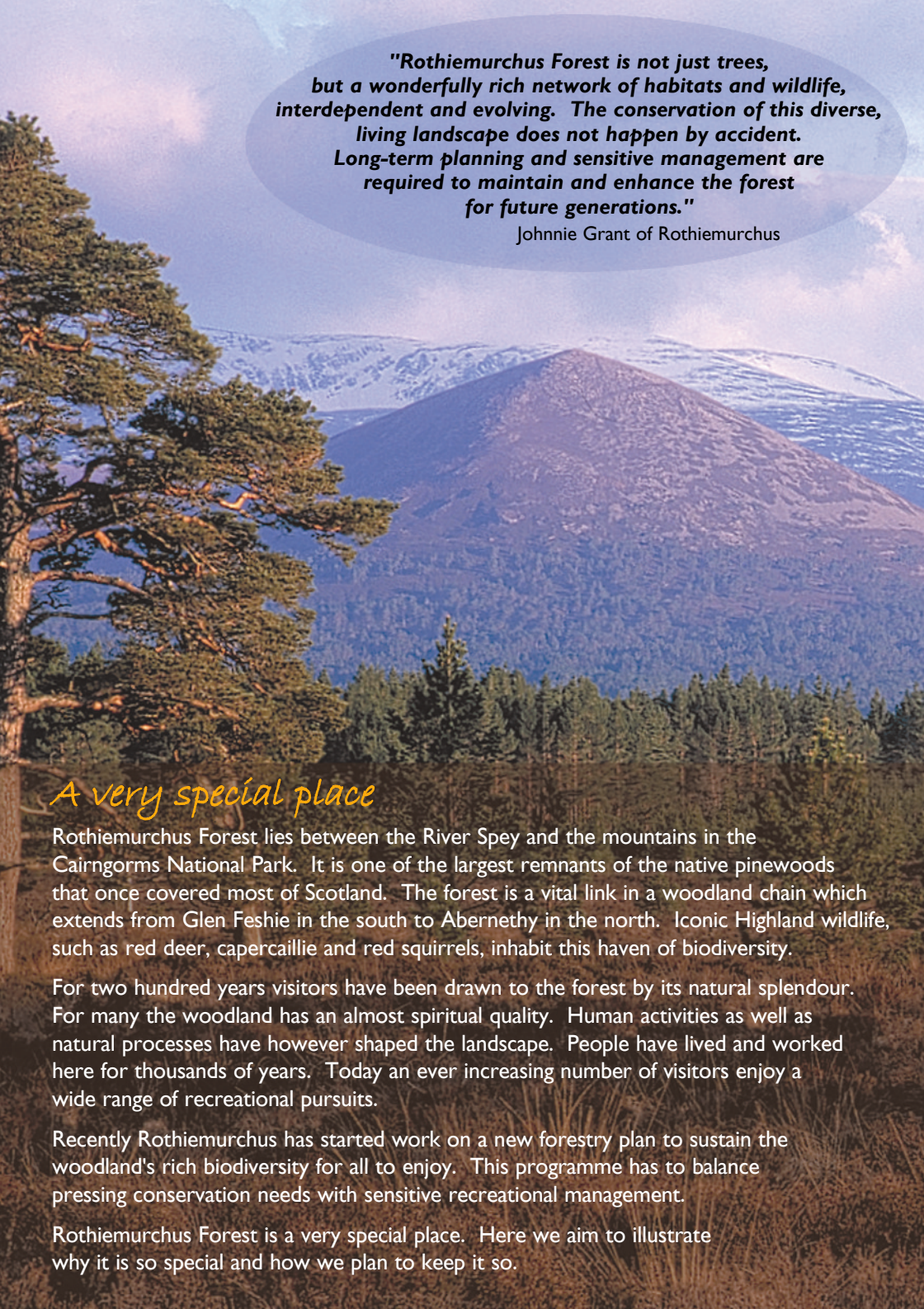
The Living Forest

Woodland and wildlife in the Cairngorms

ROTHIEMURCHUS







"Rothiemurchus Forest is not just trees, but a wonderfully rich network of habitats and wildlife, interdependent and evolving. The conservation of this diverse, living landscape does not happen by accident. Long-term planning and sensitive management are required to maintain and enhance the forest for future generations."

Johnnie Grant of Rothiemurchus


A very special place

Rothiemurchus Forest lies between the River Spey and the mountains in the Cairngorms National Park. It is one of the largest remnants of the native pinewoods that once covered most of Scotland. The forest is a vital link in a woodland chain which extends from Glen Feshie in the south to Abernethy in the north. Iconic Highland wildlife, such as red deer, capercaillie and red squirrels, inhabit this haven of biodiversity.

For two hundred years visitors have been drawn to the forest by its natural splendour. For many the woodland has an almost spiritual quality. Human activities as well as natural processes have however shaped the landscape. People have lived and worked here for thousands of years. Today an ever increasing number of visitors enjoy a wide range of recreational pursuits.

Recently Rothiemurchus has started work on a new forestry plan to sustain the woodland's rich biodiversity for all to enjoy. This programme has to balance pressing conservation needs with sensitive recreational management.

Rothiemurchus Forest is a very special place. Here we aim to illustrate why it is so special and how we plan to keep it so.




**Rothiemurchus Forest
covers an area of about
30 square kilometres and is believed
to comprise over 10 million trees.
The average age of Scots pine here
exceeds 100 years, with some
more than 300 years old.**

The ancient Caledonian pine forest

Trees first arrived at Rothiemurchus 10,000 years ago, after the ice had melted. Birch, willow and alder were followed by Scots pine 2,500 years later. They formed part of a Caledonian forest, stretching across Scotland, roamed by bears and wolves. Since then Britain's oldest woodlands have seen changes that leave just 1% of the original forest standing.

Rothiemurchus Forest is one of the largest surviving areas of this ancient woodland. Over millennia it has adapted to changes in climate and the influence of human activity. Today's forest is a complex and resilient mix of habitats.



Rothiemurchus includes one of the very few significant areas of muskeg (bog woodland) in Britain. This very unusual habitat has formed over a 5,000 year period on water-logged peat over bedrock. It is marked by the presence of decaying plants, sphagnum moss and small, stunted trees.

More than just trees

Scots pine forms the backbone of a spacious, atmospheric woodland. Light penetrating the pinewood canopy encourages life below and creates a magical, moody landscape.

Between the pines, birch trees and juniper bushes are typical of the native forest and are well represented here.

In lower, more fertile areas, oak and hazel are present.

On land close to streams, alder and willow are often seen.


Elsewhere aspen "whisper" in the breeze.

Trees are one element of a complex ecosystem.

Ground vegetation includes blaeberry and is accompanied by a woodland understorey of holly, hazel and juniper. Dead trees, still standing or fallen, provide a rich environment of rotting wood.

They are left in place to stimulate conditions ideal for insect life and the growth of fungi, such as the "cauliflower". Mosses and lichens thrive on the damp forest floor.





Fire is perhaps the greatest threat to the forest and its wildlife. A forest fire, once established on peat, can take months to put out. In 1960 a large area was destroyed by the worst fire in recent times, burning for four months until it was doused by heavy rainfall. Just the heat from a disposable barbecue can ignite the peat. The Rothiemurchus Ranger Service makes nightly patrols in the summer and regularly advises visitors of the risks.

Room to manoeuvre

Wildlife populations need a minimum habitat size to be viable. Linkages between habitats help to achieve this. They support the formation of Forest Habitat Networks which allow species to spread to suitable new areas. If the many scarce species of the pinewoods are to adapt to changing conditions, such as the warming of our climate, they must be able to move between Rothiemurchus and the neighbouring forests.

The forest is one of Europe's natural treasures, but today Rothiemurchus faces some management challenges. Conditions for regeneration have not always been ideal, consequently parts of the woodland have become fragmented. There are areas where the native forest would benefit from a wider spread of tree ages. Some parts are so dense that insufficient light reaches the forest floor, compromising the growth of ground vegetation. Addressing these challenges calls for a renewed emphasis on active forest management.

Woodland wildlife

173 bird species and 27 mammal species are known to live in Rothiemurchus, along with thousands of insect species. Enhancing this rich biodiversity is the main purpose of forest management here.

No species is more evocative of the Highlands than the red deer, but these magnificent animals can contribute to the decline of the ancient pine forest by browsing on seedlings. At Rothiemurchus careful management of the deer population reduces this problem.



Rothiemurchus participates in the Capercaillie LIFE project, a European Union initiative to arrest the decline in these reclusive ground-nesting birds. Early results show success. The capercaillie breeding record at Rothiemurchus is one of the strongest, following work to improve their habitat and manage predators.



Ospreys once nested at the top of the ruined castle in Loch an Eilein. In 1893 John Peter Grant, 10th Laird of Rothiemurchus, was awarded a silver medal by the Zoological Society of London for protecting them. Extinct in the UK for the first half of the 20th century, ospreys were carefully monitored on their return to the Highlands at Loch Garten in the 1950s.

Another John Peter Grant, the 13th Laird, was again recognised with a silver medal, this time by the RSPB, for his part in watching over them. Today ospreys are often seen swooping for trout at the Rothiemurchus fishery loch in the early morning. Scottish cross-bills and crested tits are other important members of the forest's bird population.

From tree top to forest floor

Britain's native red squirrel has all but disappeared from the deciduous hardwood habitats of England and Wales, out-competed by its transatlantic grey cousin. But it maintains a strong presence in the softer pinewoods of the Highlands, such as Rothiemurchus, a habitat not yet colonised by the grey and where the red can compete more successfully.



The rarely seen pine marten is a member of the weasel family and was at one time nearly extinct. Along with badgers, these are the most popular nocturnal mammals at Rothiemurchus, much-loved by wildlife watchers.



Less spectacular but equally amazing are the members of the insect world that inhabit the undergrowth. No species is more productive than the wood ant in shaping the forest floor. They rake the soil into meticulously constructed mounds covered with a camouflage of pine needles, a secure base for their hunter-gatherer existence.





Dragonflies prosper in damp, open areas, such as bog woodland and give a spectacular display on a warm mid-summer's day. Rare hoverflies urgently need habitat improvement to encourage their development and ensure their survival.



Improving our knowledge

To conserve wildlife species it is vital to appreciate all aspects of their habitat. Soil, climate and inter-relationships between species are important factors. For example, deer may trample vegetation, compromising the habitat of ground nesting birds. On the other hand those same birds need to use trails and other open ground, often created by deer, to dry out after rain. The approach to managing the deer population must be carefully balanced.

Rothiemurchus actively supports research into habitat needs, working today with Scottish Natural Heritage, The Game Conservancy, the Royal Society for the Protection of Birds (RSPB) and several research institutes.

The effectiveness of tree regeneration is measured by monitoring seedling density, "browse" damage by wildlife and dung counts. These studies are critical to the forest planning process, so that the best results for biodiversity can be achieved.

Looking after our heritage

In 2006 the new Rothiemurchus Forest Plan was approved by Forestry Commission Scotland following public consultation. The plan defines what is required to sustain biodiversity in Rothiemurchus over the next one hundred years. It means that essential actions can be undertaken according to a widely agreed forest management programme.

The forest plan is the latest initiative under the stewardship of the Grants, Lairds of Rothiemurchus since the 16th century. Over those five hundred years commercial timber harvesting has regularly taken place. The Rothiemurchus remnant of the ancient Caledonian pine forest has survived not by being spared the woodman's axe, but because it has been encouraged to regenerate and provide sustainable yields of timber.

Timber from Rothiemurchus was used for the first water pipes in London, installed after the Great Fire in 1666. The logs were bored at the site of the white cottage named Boring Mill on the road towards Loch an Eilein. Some of these wooden pipes were still in place at the time of the Second World War, when they were exposed by damage sustained during the Blitz.

Four centuries of forestry


The first recorded timber operations in the forest were in the 1630s. Sawmills were set up alongside streams, trees were felled and timber was produced intermittently over the next 170 years.

The 19th century saw a more intensive approach, chronicled by Elizabeth Grant in her "Memoirs of a Highland Lady". Loch an Eilein was dammed and sluices were installed to increase the flow of the burns, so that logs could be floated more easily down to the Spey. In the 1840s the building of stone dykes, to protect the natural woodland from farm animals, improved forest regeneration.

Alternative sources of timber and long distances to market hindered the competitiveness of Scottish timber production over the years. By the mid 19th century Rothiemurchus Forest was more highly valued as a Highland sporting estate. During the two World Wars the forest, one of the few remaining sources of much-needed timber, was substantially cleared. Now, 60 years on, it has recovered to the extent that sustainable timber production is possible once more.



Until the early 1900s the floating of logs from the forest to the timber yards was a major Rothiemurchus spectacle. The men who undertook this hard work were called floaters. They accompanied the logs down the burns to the River Spey, freeing them as they snagged on rocks and vegetation. The logs were then joined to make rafts and guided by Spey floaters to the yards at the mouth of the river.



The native pinewood at Rothiemurchus is designated under European law as a Natura 2000 Priority Habitat, requiring a biodiversity action plan to ensure its survival and manage its enhancement.

Conservation today

In recent times attention has turned more directly towards conservation. The intensive tree planting and drainage programmes of the 1950s in Britain were not embraced at Rothiemurchus. This helped to maintain the biodiversity of the native pinewoods. The last 50 years have seen a policy of natural regeneration, allowing the forest to recover during a time when the Highlands have welcomed a major increase in visitor numbers and a wide range of recreational uses.

Today's forest plan represents teamwork between Rothiemurchus Estate, Forestry Commission Scotland, Scottish Natural Heritage and The Highland Council. The agreed programme aims to enhance habitats and protect key wildlife species. Rothiemurchus Forester, Stuart Blackhall, is the driving force behind making this a reality. Dr Philip Ratcliffe, a widely respected independent ecologist, built the forest management strategy on sound ecological principles.

Forestry in action

Forest thinning is the most urgent need. This removes a proportion of trees to allow more light to pass through the forest canopy, stimulating the growth of ground flora. It enhances cover and food sources for wildlife.

Selective felling is also required. This mimics natural processes such as fire and storms, creating space for regeneration and helping establish a better mix of tree ages. Seed trees are left standing and help maintain continuous cover.

The forest plan also aims to double the area of aspen trees, increase the amount of deadwood, extend broadleaved tree “corridors” alongside streams and encourage the development of habitats up to the natural tree line.

Thinning and felling are conducted in the autumn and winter, to minimise the impact on sensitive ground nesting birds. The harvested timber is sold for building, joinery, fencing, pallets and firewood. The income generated contributes towards the cost of forestry work but leaves a substantial funding shortfall. Conservation grants help to fill this gap.

The forest plan is a commitment by Rothiemurchus to play its part in securing the biodiversity of our forest heritage not just today but for the centuries ahead.





Enjoying the forest

Rothiemurchus Forest is easy to visit via a well maintained trail network, which includes provision for access by wheelchair.

Guided tours on foot and by Land Rover are an excellent means of learning more about the forest from members of the Rothiemurchus Ranger Service.

Nocturnal wildlife can be watched by booking an evening visit to the viewing hide.

Details of all forest activities can be obtained at the Rothiemurchus Centre at Inverdrue.

See the **Rothiemurchus Explorer** walks leaflet for a forest access map.

In order that the forest habitat and native wildlife remain undisturbed, we encourage visitors to follow the Scottish Outdoor Access Code.



How you can help

Help us care for this very special place by becoming a **Rothiemurchus Friend** . This enables you to make a tangible contribution to the task of enhancing forest biodiversity. You will also gain discounts at Rothiemurchus shops, free parking at Loch an Eilein and receive information via our newsletter and emails.

We welcome your views

You might like to tell us what makes Rothiemurchus Forest special for you. Perhaps you have comments or questions regarding forest management at Rothiemurchus. If so please let us know. Contact details are given on the back cover.





Acknowledgements

Reference sources:

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Pine in Winter light, cover: Pine sapling, p3; Birch sapling, p4;

Lichen covered trunk, p11; Pine buds, p14.

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Capercaillie, p6; Red Squirrel, p7.

Alph McGregor Cauliflower fungus, p4; Forest view, p5; Anthill, p7; Ground survey, p8.

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Ivor Coleman Rothiemurchus and the Lairig Ghru, p9.

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Rothiemurchus and the Cairngorms, p1 and p2; Red Deer, p6.

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