

SHORT HISTORY OF INCHNACARDOCH FOREST

From earliest times to late eighteenth century, there was no attempt to manage the natural woodland which existed over most of the forest as we know it today. Tree species growing then were mainly birch, oak, rowan and hazel, with probably a little Scots pine and juniper. These dense natural woods were gradually cleared to make way for dwellings, cattle grazing and arable ground. About the end of the eighteenth century, sheep started to replace cattle and this process has continued since then. To improve the grazings for sheep, muir-burning was introduced on a large scale. This too has continued to the present day and together with heavy grazing, has been responsible for the complete lack of natural regeneration and spread of trees.

It was not until 1908 that any real attempt was made to grow trees on the land of the present day forest and then only 1 hectare of Scots pine was planted. Later, in 1914, 24 hectares of larch, pine, fir and spruce were planted and some of these trees can be seen today, behind Inchnacardoch Hotel.

In 1919 the Forestry Commission was formed and most of the present forest area was made over by feu charter to the Forestry Commission by the then Lord Lovat, who became the first chairman of the Forestry Commission. Eight years earlier, he and his brother-in-law Captain (later General) Stirling of Keir made a survey of the Great Glen to demonstrate what great possibilities there were for forestry in the Highlands and to give force to the view strongly held by Lord Lovat and others at that time that a forest authority should be set up to extend on a large scale the forest area of the country.

Inchnacardoch became the first of the new State Forests in Scotland. Since then it has grown steadily to its present area of over 5 800 hectares (22 square miles) of plantations. Each year, the forest grows another 30 000 tonnes of timber. As most of the growth takes place in the months of May and June, the forest can be said to be growing at the rate of 25 lorry loads every day at this time, and this figure is increasing each year. A small forest village was built at Jenkins Park to house the many workers and supervisors needed to run the Forest.

In 1940, the first flow of thinnings left the forest and since then the volume of timber being cut has increased steadily to the present figure of 20 000 tonnes annually. Some of this goes to the pulp and paper mill at

Fort William but, as Inchnacardoch is one of the oldest Commission forests, most is sold as logs to be sawn into constructional timber and fencing material.

High on the hill, on a flat bog, lies the Lon Mor, a name now well known in forestry circles as an experimental area for studying tree growth on deep peat. Over the years, much work has been done and many problems, especially those concerned with the preparation of the site for planting and the choice of species, have been solved on this hillside.

It was at a special ceremony in June 1965 in this forest that the first tree was felled for the new pulp mill and in April of that year, Princess Margaret paid a visit to the forest. The tree she planted to commemorate her visit can be seen near the forest office.

INCHNACARDOCH FOREST WALK

The forest walk has been designed to allow you to enjoy a pleasant and instructive walk in the woods, and to find out a little about what the Forestry Commission is doing. The walk begins at the signed car park near the forest office, is almost 4 miles in length, and may take about two and a half hours, although there is a short cut to reduce the length to $2\frac{1}{2}$ miles. Stout footwear is advisable. Please keep dogs under control and take care to start no fires.

You may also join the walk from the Auchterawe picnic site. By crossing the gate into the forest and following the arrows along the forest road, you will join the walk shortly before Halt Nine.

STARTING POINT:

Leaving your car at the car park near the forest office, follow the signposted path through the old nursery which is now being used to grow Norway spruce (Picea abies) for Christmas trees. Young Douglas fir (Pseudotsuga taxifolia) and Scots pine (Pinus sylvestris) which have grown naturally from seed are also present. The walk continues through a group of Alder (Alnus glutinosa) and crosses the fence by a stile. Across the burn is:

HALT ONE:

The area in front of you has recently been clearfelled and yielded a valuable crop of high quality sawlogs. Trees grow more slowly as they get older and there

comes a time when it is better to cut them down and replace them by vigorous young trees. So, while the life of a single tree is limited, the forest itself lives indefinitely. Much of the cleared area in front of you has already been replanted with Douglas fir and Sitka spruce (Picea sitchensis). Join the road which recently carried timber lorries and walk on to

HALT TWO:

Here the ground previously carried a crop of Scots pine which was making poor growth due to a concrete-like layer in the subsoil known as an iron pan which prevented the roots from developing properly. New knowledge and new techniques have allowed the use of a deep plough to break up the iron pan and let roots penetrate to a greater depth. This allowed Sitka spruce and Douglas fir, each a more productive species than Scots pine, to be planted and, as you can see, they are now growing vigorously. Along the road a little further is

HALT THREE

where a small juniper (Juniperus communis) can be seen. This tree is one of Britain's three indigenous conifers and can be seen in some quantity in Glen Moriston or in association with the ancient pine forests of Glen Affric. Juniper provides very useful fodder for deer during hard weather and the purple, berry-like cones, which can be used to flavour gin, are a favourite with birds. It is also believed that juniper replaces whin and broom in frosty localities or in areas with very low winter temperatures.

HALT FOUR:

looking back you will see the high fence and the gate through which you passed (and which we are sure you remembered to close securely). The fence keeps deer out of the young part of the forest where trees could easily be destroyed by browsing. On this side of the fence, where trees are past the most vulnerable stage, there are resident populations of both red and roe deer. Without any control, the deer populations would quickly exceed the available food supply and many animals would die of starvation in winter, but with careful and selective shooting by Forest Rangers, red and roe add interest to the forest and venison to the list of forest products.

As you follow the stream, you can see common alder growing from the banks

and two types of birch, both common in Scotland: silver or warty birch (Betula pendula) and white or hairy birch (Betula pubescens). Can you spot the difference? The scientific names will help. Betula pendula has pendulous or hanging branches and warty twigs while Betula pubescens has more rigid branches with pubescent or hairy twigs. The first is more common on well drained lowland soils while the second is widespread on the poorly drained, less fertile soils of the higher ground.

On your right is a stand of Scots pine planted in 1931. Had deep ploughs been available at that time, the trees would be much larger now.

As you follow the signs along the bank of the River Oich, you are passing hardwoods of oak, birch, beech, ash, alder, birdcherry, rowan and willow.

HALT FIVE:

Here the river bank is lined with alder and ash, while on the other side of the path is a fringe of lodgepole pine (Pinus contorta). This species was brought from Western North America in 1853 and is now widely used in British forestry, mainly on ground too poor or too exposed for other tree species. It is called lodgepole pine because the American Indians chose its straight stems to support their lodges or wigwams. Beyond the lodgepole pine is Scots pine. Can you see the difference in the colour of the bark and foliage? The tree to the left of the marker is a rowan (Sorbus aucuparia), a tree which, in Scotland, was once credited with magic powers, and was planted around every Highland croft to guard against witchcraft.

HALT SIX:

The Caledonian Canal runs unseen behind the bank across the River Oich and the red and white markers show where the electricity cable crosses under it.

The distant hills across the Canal are the westernmost end of the Monadhliath range. The prominent steel tower on the distant skyline is a TV booster mast which feeds the TV signal to the west end of the Great Glen.

Further along the path you will come to a strip cleared through the forest for two electricity transmission cables. Note the height of the transmission tower on your right. It is 50 metres high and soars above the forest. Note also the mighty span of the cables crossing the river and canal, a distance of 480 metres

and almost double the normal span.

If you now prefer to cut short the walk, you should follow the transmission lines to the SECOND road, where you rejoin the forest walk at Halt 11. If you wish to continue this walk, carry on up the riverside path until you come to

HALT SEVEN:

where large heaps of river debris, brought down by floods, can be seen in the forest. The river level is dependent on the operation of Hydro-Electric Board dams on the River Garry. Across the river, big European larch and oak are growing.

Carry on along the path. From the bend in the river, you get a good view of the site of Tor Dhuin, a vitrified fort on top of the rocky knoll in the forest.

HALT EIGHT:

Here the path turns right and leaves the river bank. Before moving on, take a last look at the pleasant view of distant hills and river scenery. On now, through the Scots pine area, following the arrows to the cross-roads. Cross the road and keep straight on through Scots pine on both sides to

HALT NINE:

On the right the effects of soil moisture on tree growth are well demonstrated. On the raised edges of the saucer-shaped depression Scots pine grows quite well. There the soil is freely drained and roots can live and breathe. At the bottom of the hollow, the ground is much wetter and Scots pine cannot grow here. On a drier clump, a small birch tree has seeded and is growing happily. To the right of the birch some Scots pine have seeded naturally but are making slow progress. The vegetation here is heather, with bog cotton and bog myrtle. A few yards past the marker, a well defined deer track crosses the road and further on, round the corner, more examples of impeded drainage can be seen. Again the Scots pine is growing only on the knolls where the drainage is free.

HALT TEN:

As you face the marker, the trees in front of you are lodgepole pine, with Scots pine to your right. Note how the yellow green of the lodgepole pine compares with the blue green of the Scots pine.

From this point, you have a good view of the extent of Inchnacardoch Forest. The earliest planting was on the lower slopes where the soil is best for tree growth.

Continuing technical advances have allowed the forest to be extended to higher and more difficult ground. The most recent planting continues over the saddle where the transmission towers cross the skyline, $2\frac{1}{2}$ miles from where you stand. The highest ground you can see has not been planted. This ground is very exposed and the soil very shallow: trees would grow only as stunted bushes. If your eyesight is good, you may see the tree-line or plantable limit which more or less follows the 380 metre (1250 feet) contour.

As you walk on to the next point, you will pass several small pines which have been stripped of their bark by roe deer. Each spring a mature roe buck will take possession of an area of forest which he defends from all other roe buck. He marks this territory by rubbing the bark from small trees, known as fraying stock, with his antlers and by making scrapes on the ground with his forefeet, in which he leaves his scent, a smell not unlike that of baked apples. Territories are held until the end of the rut, or breeding season, usually about mid-summer.

If you have not yet seen any roe deer on the walk proceed quietly along the next section and you may be lucky. Early morning and evening are the best times for seeing deer although often all that is seen is the white target or rump patch disappearing into the trees.

HALT ELEVEN:

Again you pass under the Hydro-Electric Board's transmission line and can see the switching station across the fields. The 132kV line carries electricity from the switching station across the Corrieysairack Pass, one line serving north east Scotland and the other, the south. All around you, the trees are Scots pine. Continue along the road to

HALT TWELVE:

On the right, a plot of lodgepole pine mixed with Scots pine allows comparison of height and diameter of the two species grown on the same site. On the other side of the road is an old experiment where trees were planted in groups of 7 or 8 in an attempt to get a single middle tree free from branches and knots. You can judge the results for yourselves.

Now on to

HALT THIRTEEN:

HALT THIRTEEN

where on the right you can see similar groups of lodgepole pine, underplanted with the soft green western hemlock (Tsuga heterophylla). Note the feathery foliage and drooping top shoot. Western hemlock is one tree which can grow where there is little light such as below the canopies of other trees. It is said to be shade-tolerant. Lodgepole pine requires strong light for growth (it is shade-intolerant) and in the natural forests of America, it is the pioneer tree; that is, the first tree to colonise bare ground. Shade-tolerant trees such as western hemlock and Douglas fir can then grow up below the pine canopy, and take over as the main forest trees when the lodgepole pine reaches the end of its life.

The road leads on to

HALT FOURTEEN:

where the road crosses a stream by a series of culverts. The quarry from which the road material came can be seen. Note the round, river-worn stones in the face of the quarry. Note, also, the natural regeneration of Scots pine, lodgepole pine and larch on the gravelly soil of the quarry floor. Along the burnside, the big trees are Norway spruce. Compare these with the Scots pine across the burn for girth. Downstream from the bridge, a rugged, spreading oak tree guards the river bend. Further along the road on the right hand side, beech and Norway spruce struggle up through Scots pine, adding a welcome fresh green to the sombre darkness of Scots pine in Springtime.

HALT FIFTEEN:

Now you are in a stand of Sitka spruce (Picea sitchensis), a tree widely used throughout British forestry. This species was brought to Britain from Western North America in 1831 and it grows well and quickly on peat and most types of soil (except in those/drier parts of the east coast) and it withstands exposure well. Note the impressive size, height, girth and volume of timber. The stand is dense and thick. There is no vegetation on the forest floor. Of all the plots you have seen today, this is the most vigorous and financially rewarding. It is now almost at felling age. Already some of the stems have been blown down by wind. Remember, all the trees in the Moor block, round which you have just walked, were planted between 1931 and 1940; so you are comparing plots of almost the same age (the Sitka spruce plot was planted

in 1931).

By continuing along the track, you arrive at the tarred county road. Turn right, and after a short walk, during which you can see several named trees, you arrive back at the Forest Office near the car park where you left your car.

If you have any comments on the walk, or this pamphlet, or if you have any questions to which you would like an answer, please call at the Forest Office.

