

IRISH FORESTS – A BRIEF HISTORY

ANCIENT FORESTS

The last Ice Age ended approximately 15,000 years ago (13,000 BC). It was another 4,000 years before conditions in Ireland were suitable for colonisation by plants and animals. These pioneering plants and animals spread into Ireland mainly from southern and central Europe, probably through the United Kingdom, by way of land bridges (sea levels were lower than at present). The first land plants were mainly herbs and low lying shrubs such as grasses, sedges, various dock species, juniper, dwarf birch and dwarf willow. Many of these species have a restricted distribution in Ireland today and some, such as dwarf birch, no longer occur. As the weather improved, warmth demanding species became established. The birches, accompanied by willows, with hazel following shortly afterwards, were probably the first true trees to arrive in Ireland about 10,500 years ago. Birch does not cast a heavy shade so it is most likely that it was in these woodlands that primroses and anemones first appeared. The birch forests were soon replaced by oak and elm forests, while hazel reverted to a shrub growing under the forest tree canopy.

The first humans arrived around 9,000 years ago (7,000 BC). By this time the island was predominantly covered in a blanket of woodland. Oak and Elm were well established, with Scots Pine growing on the lower slopes of some uplands. There were two major woodland types namely, mature deciduous Oak Woods in the lowlands and valleys with an abundance of ferns, mosses and liverworts, and the Pine Forests on poorer soils with ling heather, grasses and bracken occurring in the ground layer. Some birch woodlands would have also existed on poorer soils. Other species such as Rowan would have flourished in natural openings in the forest canopy, along with whitebeam, holly, ivy and honeysuckle. These forests were home to animals, some of which are extinct in Ireland today, such as brown bear, wolf and boar, while others, such as fox, pine marten and stoat, still occur. The forests covered most of Ireland apart from exposed coastal areas, lake edges and the more exposed mountain tops. Alder and ash were still uncommon in Ireland 8,500 years ago but they expanded to become common around 500 years and 2,000 years later respectively.

These early inhabitants were Mesolithic hunters, fishers and gatherers, and they had little discernible impact on the forests. However, around 6,000 years ago the forests started to slowly disappear from parts of the country, particularly in the west and the south midlands. It is not fully understood why these early forests started to decline but scientists believe that two main factors may have been the cause - the growth of blanket bogs and the development of farming. The growth of the blanket bogs began approximately 6,000 years ago (4,000BC) and coincided with forest clearance by early Neolithic farmers, to accommodate tillage and pasture. As farming techniques developed through prehistory, and with the advent of iron tools in the later prehistoric period, the process of clearing Ireland's forests continued. However, the picture is not simply one of land-clearance – pollen profiles for the prehistoric period show cycles of land clearance coupled in many cases with recovery of forests and by the start of the first millennium AD much of Ireland was still covered with forest.

For reasons that are still unclear, it appears that some tree species declined drastically in the early centuries of the first millennium AD. Elm had been in decline since 3,000 BC, probably due to a disease that only affected Elm, and had virtually

disappeared by the 7th century AD. By this stage too, the early law tracts indicate that the great woods were now confined to marginal land and upland areas. The general picture from these texts is of woods and copses, very often privately owned, whose resources were limited and needed careful protection by the law. Scots Pine also suffered a serious decline towards the end of the first millennium and may have been extinct by the 12th century.

As the population increased over the following centuries, the demand for timber also increased and the exploitation of the timber resources intensified under the Anglo-Norman and later English settlements. Nevertheless, there were extensive forests in Ireland before 1600. However, these forests were largely gone by 1800.

There is no single reason for the ultimate decline of Ireland's forests but it is generally agreed that there were several contributory factors, beginning around the mid 16th century:-

Industrialisation

Shipbuilding, along with iron, glass and barrel (cooperage) production intensified during the 16th century. The invention of the blast furnace in the mid 16th century led to a revolution in the production of iron and glass, which could now be produced on an industrial scale. This placed great demands on forests across Europe, including Ireland. The smelting of the iron ores, in particular, required large volumes of charcoal, which was produced by the controlled burning of coppiced wood. By the mid 17th century ironworks were recorded at over 150 locations around Ireland. Although glass production was less dependent than ironworks on timber, ash trees were especially important for its production (as an alkali) and several major glass works were recorded in Ireland at that time. Cooperage also required significant volumes of timber staves to manufacture wine casks and other barrels. Shipbuilding also contributed to the decline. It is known that timber for ships was exported to England in the early 17th century and the East India Company established a shipyard at Dundaniel in Cork some time before 1613.

Plantations of Ireland

The mid 16th century also saw the beginning of the Plantations of Ireland (c.1556 - c.1690), with large areas of land allocated to English, Welsh and Scottish settlers. These new settlers cleared large areas of forest to create pasture for livestock and tillage for crops.

Population

The Plantations were closely followed by a four-fold increase in the population of the island between 1700 and 1840. The massive population increase, in such a relatively short period of time, placed enormous demands on the agricultural resources of the island, requiring vast areas of forest to be cleared to meet the increasing demand for food and shelter.

These events all contributed to the ultimate decline of Ireland's forests to such an extent that the large areas of forest still remaining in Ireland in 1600 were all but gone by 1800.

The disappearance of the forests also led to the extinction in Ireland of many native woodland mammals, such as wild boar, wolf and red squirrel (*the existing red squirrel population was reintroduced from Britain during the 19th century*).

A Modest Comeback

Nevertheless, an interest in the science of forestry and forest management began to develop across Europe during the 1700s and this interest and knowledge quickly spread to Britain and Ireland. This, and the relative political stability at that time, encouraged some owners of the great estates to improve their land and plant trees, which had the added potential benefit of a long term economic return. From 1740 the Dublin Society (est. 1731), now the Royal Dublin Society, awarded prizes and medals for planting trees, and this also encouraged landowners to plant. Furthermore, changes in aesthetic tastes among wealthy landowners, from manicured gardens to 'landscape parks', also saw many small woods and copses planted. By 1801 there were 132,000 acres (c. 53,420 hectares) of plantations, largely as a result of encouragement of the Royal Dublin Society¹.

Land Act 1881

The passing of the Land Act in 1881, and the resultant transfer of vast areas of land from landlords to tenant farmers, saw the forests decline once again as many landlords, about to lose their estates, cashed in their timber crops and the new tenant farmers, in urgent need of money, started clearing much of the remaining forests in order to make way for tillage and grazing.

20TH CENTURY STATE FORESTRY

State forestry began in 1903, when the Department of Agriculture and Technical Instruction (DATI) for Ireland acquired Avondale House in Co. Wicklow, along with woodland areas of some estates, and established a training centre for forestry there.

In 1908, the Departmental Committee on Irish Forestry estimated the area under forest in Ireland to be in the region of 1.5% of the total land area of the island² (i.e. c. 310,000 acres / 125,200 hectares), much of it being forest planted by estate landlords during the late 1700s and early 1800s. However, demands due to fuel and timber shortages during the First World War (1914-1918) resulted in a further reduction to the forest estate.

Following independence, and the creation of the Irish Free State in 1922, a modest afforestation programme was established by the new Free State government. From the outset, government policy confined the afforestation programme to poor quality marginal land. Land that was "*fit for agricultural purposes*"³ was excluded from the afforestation programme. The reason for this policy was to ensure that the emerging State could produce sufficient food to feed its population.

In 1928 a new Forestry Act was introduced "*to make further and better provision for promoting afforestation and for that purpose, to amend the Forestry Act 1919, to restrict the felling of trees, and to make other provisions connected therewith*". This was the first time the State took measures to control the felling of trees by empowering the Minister to compel the replanting of felled areas. The Act also empowered the Minister to provide non-refundable grants to private landowners and the first planting grants were made available in 1931, the main beneficiaries being the large estates. By this time (1928) there were "*only 220,000 acres (89,000*

¹ A History of Irish Forestry (Eoin Neeson, 1991, p. 97)

² A History of Irish Forestry (Eoin Neeson, 1991, p. 134)

³ Annual Report of the Department of Agriculture 1925/26

hectares) of woods in the country⁴ and any new forest planting that occurred was undertaken almost exclusively by the State.

Over the next decade the rate of State afforestation gradually increased, rising to 7,603 acres (c. 3,077 hectares) in the 1938/39 season⁵. However, the Second World War (1939–1945) curtailed the State afforestation programme substantially, with planting rates falling to 4,230 acres (c.1,711 hectares) in 1944/45⁶. Furthermore, much of the forest planting undertaken during the late 1940s and early 1950s was reforestation carried out to replace mature forests that had been felled during the war, when fuel and timber became scarce.

The Government policy during this period, outlined in the Report of the Department of Lands for the five years ending March 31st, 1943 was “to create a home supply of raw timber sufficient to meet home requirements”. However, this was not the sole purpose for the Government’s forestry programme. Forestry also played an important socio-economic role in many rural areas, employing thousands of people in areas where other employment opportunities were limited.

The Department had estimated that the total national objective of both State and private woodlands should be 700,000 acres (c. 283,286 hectares) of afforested land, including 100,000 acres (c. 40,470 hectares) of protected forest and 600,000 acres (c. 242,816 hectares) of fully productive forest. However, the lack of finance and suitable land, allied to opposition to forestry in many areas of the country, hindered progress.

The Forestry Act 1946 (still the principal legislative framework for forestry in Ireland) repealed the earlier Acts of 1919 and 1928, and introduced a more comprehensive legal framework for forestry. This was accompanied by a Government policy to increase the rate of afforestation to 10,000 acres (c. 4,000 hectares) per annum.

In 1948, the Government adopted the first long-term afforestation plan and the financial and administrative support required to fulfil the strategy was put in place. The plan envisaged a State afforestation programme of 1,000,000 acres (c.400,000 hectares) to be achieved over the following 40 years at the rate of 25,000 acres (c.10,000 hectares) per annum. This new programme was rapidly put into action and, while the annual planting target was not reached for some years, due mainly to the unavailability of suitable land, the annual rate of afforestation gradually increased over the following 10 years, finally achieving, and surpassing, its annual target in 1960 when 25,110 acres (c. 10,162 hectares) were planted.

By 1970, the total planted area of State forests amounted to 530,901 acres (c. 214,853 hectares) and 4,395 people were employed in the State forest sector⁷. During the 1970s the afforestation programme continued, achieving an average annual planting rate of 8,800 hectares between 1970 and 1979 (*the Department started using the metric system from 1972*). However, this rate of afforestation could not be maintained. Government policy to exclude agricultural land from the afforestation programme, underpinned by Government restrictions on the price the Department could pay for land, meant that it was becoming increasingly difficult to

⁴ Minister for Lands and Agriculture , Dáil Éireann, Volume 23, 3rd May, 1928

⁵ Parliamentary Debates (Dail Eireann, Volume 86, 15th April, 1942)

⁶ Parliamentary Debates (Dáil Éireann, Volume 99, 07 February, 1946)

⁷ Report of the Minister for Lands in Forestry for the period 1st April 1970 to 31st March 1971 (The Stationery Office)

acquire suitable land. Consequently, the rate of afforestation by the State started to gradually decrease, with the average annual rate of afforestation undertaken by the State between 1980 and 1989 falling to 5,700 hectares. By this time the total State forest area comprised 304,232 hectares and responsibility for the management of all State lands, including commercial forests, amenity and conservation woodlands, nature reserves and wildlife sanctuaries, rested with the Forest and Wildlife Service of the Department of Energy.

The late 1980s also saw great changes in the way the State managed its property portfolio. The Forest and Wildlife Service was divided into three distinct entities. In 1987 the wildlife functions of the Forest and Wildlife Service, along with the approximately 21,000 hectares of State lands and forests which had hitherto been managed primarily for amenity and wildlife conservation purposes (such as Glengarrif Wood, Co. Cork), were transferred to the Office of Public Works (*it is now called the National Parks and Wildlife Service and is part of the Department of Environment, Heritage and Local Government*). In January 1989 the Government established a new State body, Coillte Teoranta, to manage the State's commercial forests and ownership of those forest lands was transferred to the new company. The Forest Service, which remained within the Department of Energy, was now responsible for setting national forest policy, control of tree felling, protection of the national forest estate from pests and diseases, promotion of forest research and development, promotion of private forestry and administration of the State forestry grant schemes. The Forest Service is now part of the Department of Agriculture, Fisheries and Food.

By this time the entire national forest estate (State owned and private forests) amounted to an estimated 465,000 hectares, with approximately 322,000 hectares of this having been planted during the 40 years from the 1949 to 1988.

PRIVATE AFFORESTATION

A State grant scheme aimed at encouraging private landowners to plant forests had existed since 1930. However, by 1980 only 10,192 hectares had been planted over the 50 years the scheme had operated.

The first substantial move to increase the level of afforestation undertaken by private landowners occurred in 1981, following the introduction of a special grant scheme under the forestry element of the EEC Western Package. The Western Package Scheme was aimed at stimulating agricultural development and improving farm incomes in 13 western counties. It offered grants for the planting of forests on "*lands marginal for agriculture but suitable for forestry*" in Counties Cavan, Clare, Donegal, Galway, Kerry, Leitrim, Longford, Mayo, Monaghan, Roscommon, Sligo and the western areas of Cork and Limerick. The scheme was initially slow to take off and only 1,249 hectares were planted during its first 5 years. However 1986 saw a dramatic increase in the level of uptake with 2,280 hectares planted in that year. This increase in private afforestation coincided with a decrease in the State afforestation programme.

The State, with the continued financial assistance of the European Union, introduced further forestry grant schemes over the succeeding years, on a nationwide basis, and the level of afforestation by private landowners increased significantly, peaking in 1995, when 17,353 hectares were planted. Combined with 6,367 hectares planted by Coillte Teoranta in that year, 1995 saw the highest level of afforestation (23,710 hectares) ever achieved in the country in a single year.

In 1996, the Government published '*Growing for the Future*', an ambitious strategy for the development of the forestry sector in Ireland to 2035. The overall aim of the strategy is "to develop forestry to a scale and in a manner which maximises its contribution to national economic and social well-being on a sustainable basis and which is compatible with the protection of the environment". The areas covered in the plan are wide ranging and include national planting policy, amenity and recreation, environment, forest protection and health, harvesting and transport, sawmilling, quality and standards, R&D, education and training and many other related areas. The strategic plan concluded that, in order to reach a scale of timber production large enough to support a range of processing industries, the national forest estate would need to increase to 1.2 million hectares (17% of total land area) by 2030. It aimed to achieve this by increasing afforestation levels to 25,000 hectares per annum to year 2000 and 20,000 hectares per annum thereafter from 2001 to 2030.

Sustainable Forest Management (SFM)

It is the objective of the Forest Service that all timber produced in Ireland should be derived from sustainably managed forests. With this in mind, since 1998, following the Third Ministerial Conference on the Protection of Forests in Europe, Ireland is committed to ensuring that all forest development complies with the principles of SFM. These principles are reflected in the Irish National Forest Standard published in 2000. The Standard outlines six internationally agreed criteria for SFM and outlines indicators and measurements that demonstrate trends towards or away from sustainable forest management.

The Code of Best Forest Practice, also published in 2000, provides direction for forest managers by describing how best to carry out forestry operations on the ground. This is supplemented by a suite of mandatory environmental guidelines for forestry operations covering water quality, archaeology, the landscape, harvesting, biodiversity, aerial fertilisation, forest protection and forest recreation. These guidelines ensure that the principles of Sustainable Forest Management (SFM) are complied with at all times.

21st CENTURY

By the end of the 20th century, Ireland had accumulated approximately 650,000 hectares of forestry. This represents significant progress from the estimated 89,000 hectares of forest in the country in 1928. In 2006 the total national forest estate stood at approximately 700,000 hectares, equating to 10% of the land area of the country.

It is estimated that approximately 75% of the national forest estate is predominantly conifer, comprised mainly of commercial timber species but also including some native species such as Yew and Scots Pine. The remaining 25% of the forest estate is predominantly broadleaf and mixed forest, of which approximately half is comprised of native broadleaf species such as Oak, Ash, Birch, Hazel, Alder etc. Wherever new planting takes place, native seed is used as much as possible. Broadleaf planting is becoming increasingly important in recent years, with 30% of the area being planted each year accounted for by broadleaf species.

Despite the ambitious targets laid down in the '*Growing for the Future*', and the availability of generous grants and annual premiums to private landowners, the rate

of afforestation has declined in recent years, falling to 6,947 hectares in 2007, the bulk of this being undertaken by private landowners, mainly farmers.

The reasons for the decline are complex and wide-ranging. In the past, many farmers planted forest on marginal land that was unlikely to produce an income from other agricultural activities. This type of land often has high biodiversity value and is now often not eligible for State afforestation grants. The increasing value of agricultural land and the long-term nature of forestry has also adversely impacted on achieving the planting targets outlined in '*Growing for the Future*'. Landowners are accustomed to the regular income generated by traditional farming activities, whereas income from forestry is more long term. In addition, protecting the environment from inappropriate forestry development has become increasingly important and has made the process of obtaining approval to afforest land much more complex and time consuming for landowners. These factors have all contributed to the fall in the rate of afforestation.

Nevertheless, some landowners, mainly farmers, continue to plant forests. Significantly, however, those landowners who do plant are planting smaller forest areas. For example, 29% of the new forest areas planted in 2001 were less than 10 hectares, whereas 45% of new forest areas planted in 2007 were less than 10 hectares. This corresponds with an increase in the level of broadleaf and native species being planted indicating, perhaps, that many landowners are increasingly planting small forest areas for aesthetic, environmental and amenity reasons as well as for commercial reasons. In 2007, over 31% of all new forests planted were comprised of mainly broadleaf species.

Two important projects will help in managing this important resource. The National Forest Inventory (NFI), which was completed by the Forest Service in 2007, involved a detailed field survey of Ireland's forests to assess the extent, composition and condition of the national forest estate, both public and private. The results of the NFI will, among other things, enable Ireland to fulfill national and international reporting obligations and to monitor the sustainable development of the forest resource. The National Survey of Native Woodlands, which is being jointly funded by the National Parks and Wildlife Service and the Forest Service, is mapping all stands of Ireland's native woodlands greater than 1 hectare. The survey commenced in 2003 and the final report is due to be published later this year (2008). Both of these projects will provide important additional information about the extent and condition of Ireland's entire forest estate.

FOREST BENEFITS

The benefits of forestry to the social, environmental and economic well being of the country are becoming increasingly clear to the public and landowners alike. Forests provide the timber we use to build, furnish and heat our homes. Wood is increasingly seen as an important source of renewable energy which can be produced locally thereby replacing imported fossil fuels. But forests are much more important than just a source of timber. Forests contribute to the production of the oxygen that we breathe. They are among our most important wildlife habitats and harbour vast numbers of plant and animal species. They prevent air pollution by absorbing carbon dioxide (CO₂) from the atmosphere, and significantly contribute to the achievement of Ireland's Kyoto greenhouse gas abatement strategy. They enhance the landscape and help to reduce landslides and floods by stabilising soils and absorbing excess ground water. They are an important amenity and recreation

resource where people can enjoy outdoor pursuits. Forests, probably more than any other land use, improve our lives.

GRANTS

The Government is committed to the continued development of Ireland's forests by providing grants and annual compensation payments (premiums) to landowners to plant forests, whether for commercial timber production or for amenity and conservation purposes.

The **Afforestation Grant Scheme** is predominantly aimed at, but not confined to, those wishing to plant forests to produce commercial timber. The grant is available to any landowner who afforests "*land which has been used for agricultural purposes in recent years*" and eligible areas can be as little as 0.1 hectare (for broadleaf species) and 0.25 hectares (for conifer species).

The **Forest Environment Protection Scheme** (FEPS) aims to encourage farmers participating in the Rural Environment Protection Scheme (REPS) to establish high nature value woodland in their farms.

The **Native Woodland Scheme** provides financial support for landowners to establish new native woodlands on greenfield sites.

Details of these, and other forestry support schemes, are available from: Forest Service, Department of Agriculture, Fisheries and Food, Johnstown Castle Estate, Co. Wexford, Tel: 053-9160200; Web: www.agriculture.gov.ie/forests-service.

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Department of Agriculture, Fisheries and Food
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