

BLANKET BOG RESTORATION IN IRELAND

Pollagoona, Slieve Aughty, Co. Clare

Pollagoona bog is an area of high quality blanket bog located in the extensively afforested Slieve Aughty uplands of County Clare, some 20km southeast of the town of Gort (Co. Galway). Lough Atorick lies just to the northwest of the site. The bog is completely surrounded by conifer plantation, dominated by Sitka spruce, most of which is more than 15 years old. The bog is of particular interest as it displays vegetation and morphological features transitional between blanket and raised bog systems.

*In general, the bog is of high ecological value, being soft, wet and quaking over most of its surface. Sphagnum cover is high, with some well developed hummocks while wet lawn areas, dominated by white-beaked sedge (**Rhynchospora alba**), are also frequent. In the more central parts of the bog, plant species such as bog asphodel (**Narthecium ossifragum**) and cross-leaved heath (**Erica tetralix**) dominate, along with Cladonia portentosa and Sphagnum capillifolium. A feature of the bog vegetation is the presence of bog rosemary (**Andromeda polifolia**) and cranberry (**Vaccinium oxycoccos**), species that are more typical of raised bog habitats. Along the intact bog margins, where the peat depth is shallower, i.e. <1 metre, the vegetation is dominated by purple moor-grass (**Molinia caerulea**). Pool areas are generally not common however there is a small pool complex in the eastern half of the site which is colonised by bog-bean (**Menyanthes trifoliata**), mud sedge (**Carex limosa**), brown-beaked sedge (**Rhynchospora fusca**) and the aquatic mosses Sphagnum cuspidatum and S. auriculatum. As a result of the high ecological quality of the area it has been designated as a Special Area of Conservation.*

The main restoration measure at this site involves the felling of poorly-developed areas of conifer plantation around the margins of the intact unplanted bog and the subsequent blocking of drains. This will increase the area of bog habitat over time and will also prevent the drying out of adjoining intact areas. In these afforested areas a modified bog vegetation is often still present and there will be good regeneration of blanket bog following tree felling.

The peatlands of the West of Ireland are among the most important intact areas of active blanket bog found in Europe.

The term "active" here refers to blanket bog that is still peat-forming or still growing. Because its value as wildlife habitat is now internationally recognised, blanket bog is listed for protection on Annex I of the EU Habitats Directive, which means that EU member states must protect the best representative examples of blanket bog habitat in Special Areas of Conservation (SACs).

What is blanket bog?

Blanket bogs are wild areas that cover the lowlands and uplands of the west of Ireland. They are formed of peat soils which are the partially decomposed remains of plants which have built up slowly over thousands of years, in areas where the climate is cool and wet. In the past blanket bogs have been used for peat production, livestock grazing and, more recently, growing conifers, however their value as important wilderness areas is becoming increasingly recognized. Blanket bogs are complex wetland ecosystems which support many plants and animals that are specialised to live in the wet, nutrient-poor, conditions. Irish blanket bogs are among the richest in Europe in terms of their plant and animal life. On the bog, you can find a rich diversity of plant and animal species, including numerous species of moss, lichen, spider and insect as well as larger animal species such as the otter, red grouse and merlin.

Blanket bogs starting developing in Ireland around 7,000 years ago, however it is thought that they only became widespread around 4,000 years ago when the climate became much wetter and cooler. Prior to their widespread cutting and reclamation by people it was estimated that bogs covered 15% of the island of Ireland. Whilst peat has probably been cut for fuel for thousands of years it is only in the last century that vast areas have been lost to peat-cutting, afforestation and agricultural reclamation. Today, it is estimated that only 18% of the original area of blanket bog and 8% of the original area of raised bog remains of conservation interest.

Irish Bogs

Two main types of bog occur in Ireland namely blanket bog and raised bog. Although these two bog types have much in common there are important differences in their distribution, development, structure and vegetation. Blanket bogs are confined to the western half of the country and mountainous areas further east where the rainfall exceeds 1200mm per year while raised bogs are largely confined to the midlands where the rainfall amounts are generally below 1200mm per year. Most areas of raised bogs have grown from a lake basin and are typically surrounded by agricultural grassland while blanket bogs tend to be much more extensive and form carpets across flat or gently undulating landscapes. Another noteworthy difference between raised and blanket bogs is peat depth. Raised bogs generally contain deeper peat deposits (typically between 4 and 8 metres) while blanket bogs are generally shallower with a peat depth of between 2 and 5 metres typical. Although raised and blanket bogs support a similar range of plant species, certain species tend to be more frequent in either type. Raised bogs tend to be dominated by deer grass (*Trichophorum cespitosum*), white-beaked sedge (*Rhynchospora alba*) and cross-leaved heath (*Erica tetralix*) while lowland blanket bogs are generally dominated by grasses and sedges, especially purple moor-grass (*Molinia caerulea*) and black bog rush (*Schoenus nigricans*). Raised bogs also tend to contain a better-developed Sphagnum layer than blanket bogs.

The sites in this restoration project are blanket bogs, most of which occur at a low elevation, i.e. less than 150 metres, and thus are termed lowland blanket bog. The sites in the Slieve Blooms however, occur at a higher elevation and are referred to as mountain blanket bogs. The main difference in terms of vegetation cover between these two types of blanket bog is that lowland blanket bogs tend to be dominated by

purple moor-grass (*Molinia caerulea*) and black bog rush (*Schoenus nigricans*) while the drier mountain blanket bogs are generally dominated by ling (*Calluna vulgaris*) and hares tail bog cotton (*Eriophorum vaginatum*).

Since 1997 approximately 135,140 ha of active blanket bog have been proposed as candidate Special Areas of Conservation [SAC] in Ireland. These proposed SAC Blanket Bog sites are located mainly along the Atlantic Seaboard counties of Ireland, especially Counties Mayo and Galway.

In the past, efforts have been made to make more use of blanket bogs. Forestry was seen as a possible landuse that would boost the local economy in remote areas where blanket bog cover is extensive. Conifer species such as Sitka spruce and lodgepole pine were planted onto bog that had been drained and fertilised in order to promote tree growth. In some instances, particularly on very wet bogs, these efforts to establish commercial forestry failed as the trees did not grow well. Nowadays, with environmental issues becoming increasingly important, Coillte takes the view that some of these bog plantations should be converted back to wild, open bog for the benefit of biodiversity. This project aims to achieve the restoration of blanket bog at selected sites owned by Coillte. Since the best examples of Ireland's bogs are proposed for nature conservation in Special Areas of Conservation by The National Parks and Wildlife Service, Coillte has undertaken this project to restore the afforested blanket bog in the SAC land in its ownership. In this project there are 14 sites covering 1212.3 ha within or adjoining candidate SACs on the Coillte estate.

The sites consist of unplanted, or partially/wholly afforested blanket bog/heath habitat.

Most of the project sites are located in north Mayo, where the full range of blanket bog types occur from lowland to mountain blanket bog. Most of the bog here also lies within sensitive river catchments, i.e. where water quality is very high, and so protection of watercourses is an important consideration. Elsewhere, the sites are representative of afforested peatlands around the country. Five of these sites, namely Emlaghdauroe, Eskeragh, Slieve Blooms, Croaghonagh and Dromalohurt, have been selected as project demonstration sites. These will be the focus of a public awareness programme over a four-year period and beyond.

For the last 40 years or so the blanket boglands of Ireland have been extensively altered by human landuse. Afforestation, grazing and other landuses have resulted in degradation and drying out of the habitat. The main focus of this project is to reverse the degradation of blanket bog.

The problems to be addressed, are:

- ***Uncontrolled access on open bog areas by sheep, which has led to overgrazing***
- ***Forest drains on the open bogs have lowered the natural water levels***
- ***Forestry-related activities, including drainage, has reduced the area of active blanket bog habitat.***
- ***Conifer species are regenerating onto the open bog SACs from adjoining conifer plantations***

This project will reverse these processes and over time will create a high quality area of active blanket bog by:

- *Fencing to protect 718.6 hectares of open blanket bog from overgrazing in the future*
- *Drain-blocking in order to restore the high watertable which is necessary for blanket bog growth*
- *The felling/removal of some 494 hectares of conifer plantation in order to increase the blanket bog area*
- *The felling of naturally regenerated conifers from the open bogs.*

Bog restoration techniques on afforested peatland pioneered in the LIFE funded "The Border Mires Active Blanket Bog Rehabilitation Project" (UK) will be developed on in this project. Links with other LIFE funded projects, with an emphasis on tree clearance, have also been made. This LIFE funded restoration project will build on conservation management plans for the sites, the development of which by The National Parks and Wildlife was previously supported by EU LIFE funding.

At the end of this project, it is expected that Coillte will have achieved a significant amount of blanket bog restoration. Funding from LIFE-Nature will demonstrate that the restoration of suitable blanket bog sites is one of the management options on afforested peatlands.

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