

SOCIETY NEWS

Society of Irish Foresters weekend meeting in Connemara

Introduction

Environmental issues featured strongly during the Society's two-day study tour of Connemara on 24-25 September 1993. Locations included Cloosh Valley and Ballinahinch forests and Inchagoill Island, Lough Corrib.

STOP 1

Cloosh Valley Forest Finnaun property

Location: Situated on the western seaboard approximately 20 kms. N/W of Galway Bay comprising a large contiguous forest block

Geology: Porphorite granite

Elevation: 60m-240m

Soil Type: Peat soils of the blanket peat type dominate the area. These vary considerably in depth from 1 to 6m. Rock outcrops are a frequent occurrence.

Subject:

Under discussion was a site designed for monitoring of a forest ecosystem under the EU programme on the protection of the community's forests against atmospheric pollution.

The monitoring project that is currently being run in University College Dublin is examining the impact of atmospheric deposition on forests and

the effect of forestry on the environment. The project director is Dr. Ted Farrell. The site in Cloosh Co. Galway is a 36 year Sitka spruce stand, planted on blanket peat, Yield Class 18.

The monitoring at this site consists of collection of water samples throughout the various strata of the forest: throughfall, stemfall, water percolating through the forest floor and water extracted from the peat at depths of 25 and 75 cm. Rainwater is also collected from an unplanted area close to the monitoring plot. These water samples are collected weekly and sent to the UCD laboratory for complete nutrient analysis. There are three other forest plots of similar design, also being monitored under this project, which has been running since 1991, in Mayo, Cork and Wicklow.

In general there is very little evidence of atmospheric pollution in Ireland. Of the four sites, the Wicklow site shows most evidence of atmospheric pollution, as it is located on an easterly slope overlooking the Irish Sea. There is an enrichment of ions between the rainfall and throughfall, evidencing dry deposition of elements on the forest canopy. In Cloosh there is a very high input of marine cations, notably sodium and chloride. In the two western sites, nitrogen is being absorbed as ammonium from the atmosphere by the forest canopy.

Gillian M. Boyle

The impact of coniferous afforestation on the physical and chemical properties of blanket peat

Reforestation on blanket peat is already underway. This is often ahead of schedule due to wind throw. Establishing second rotation crops is presenting new challenges to foresters. The problems associated with reforestation were discussed throughout the study tour in particular during Stop 2 at Derryclare. The following brief paper explores the impact of afforestation in these areas.

The technological advances of the early 1950s brought about the successful afforestation of peatlands in Ireland. Developments in specialised ploughing equipment and a recognition of the need for phosphorous fertilisation paved the way for large coniferous afforestation programmes, particularly on blanket peatland along the western seaboard. This study was undertaken to determine the impact of this afforestation on the physical and chemical properties of blanket peat.

Two plots were selected for this purpose, one forested and one unplanted. Samples were collected from both plots in 10cm depth intervals, to a depth of 70cm in the open plot and to 40cm in the forest plot. To make allowance for variation in conditions within the forest plot, peat samples were collected from between the plough ribbons, the ribbons and the furrows. Samples of the litter layer were also collected.

A marked reduction in the moisture content and volume of the forested peat was observed. This drying and associated shrinkage resulted in higher bulk density values and subsidence of the bog surface. The fibre content, pyrophosphate index and volume weight were all altered by the presence of the trees reflecting the higher degree of decomposition in the forest peat. Significantly higher levels of phosphorous, iron and exchangeable ammonium were found in the peat beneath the trees. Calcium and magnesium contents, on the other hand, were significantly lower in the forest peat. The pH of the planted peat was lower than that of the unplanted peat.

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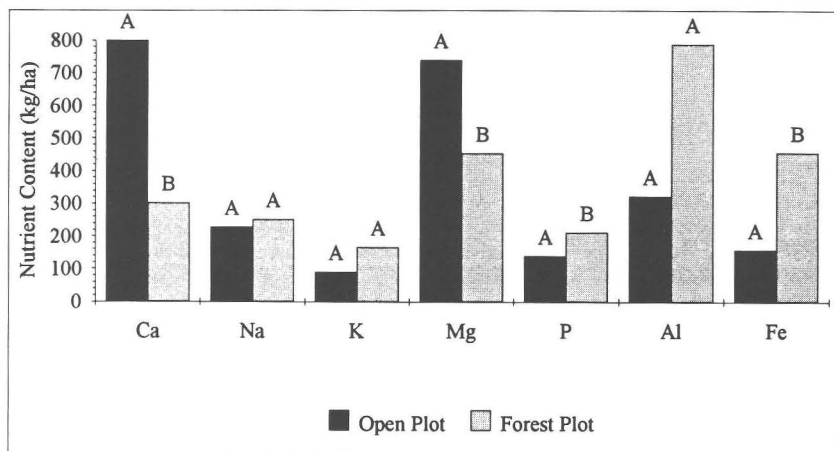


Fig. 1. Mean total Ca, Na, K, Mg, P, Al and Fe contents of the forest plot (litter and forest peat to 40cm) and of the open plot to an equivalent depth (kg ha^{-1}), (same letters indicate no significant difference between forest and open plots).

STOP 2

Ballinahinch Forest Derryclare Property

Location: Situated in the Inagh Valley of the Twelve Pins. Fronted by Lough Inagh to the north and Lough Derryclare to the south. The Maumturk mountains lie to the east.

Elevation: 25-150m

Soil Type: Climate western blanket peat. Soil type of the oak woodland is lake marble.

Plantation: Conifers planted 1960-1967. Oak planted in 1850 and is now designated a nature reserve. 60-40 mixture of pine and SS with LP(L) being the dominant pine species. Approximately 30% of the stand is SS pure.

Cultivation: DMB ploughing

The Lough Inagh Valley is a very important tourist route and the lakes are part of the Ballinahinch/ Owenmore fishery system.

The area was clearfelled in 1993 due to windblow. Part of the clearfell was taken off the nature reserve and will not be reforested.

Long term felling and restocking plan (based on Simon Bell's guidelines) has been drawn up and incorporated into the 1994 thinning and rotation classification. Only 2 ha has been reforested to date.

John McLoughlin, Chief Environmental Officer, Coillte, gave an outline of the proposals for the phased clearfelling of Derryclare forest. He pointed out that the forest itself, although totally artificial, apart from a small

area of native oakwood, was a very important component of the existing landscape. The scale of the plantation in the landscape was acceptable and apart from a few alterations to the external margins, the plantation fitted in very well with the landscape.

The problem now was that much of the plantation was reaching the critical height where wind was becoming a major factor. The clearfelling proposals envisaged the removal of the trees in five phases at four to five yearly intervals. The felling coupes would be large in size reflecting the scale of the landscape and they would follow the landform.

The next topic for discussion was Environmental Impact Assessment (EIA) and John McLoughlin pointed out that while the threshold is now 200 hectares for afforestation projects there was every possibility that this threshold would be reduced in the future.

Environmental Impact Assessment (EIA) is an American concept which has been introduced to Europe and was adopted by the European Union (EU) in the form of Directive 337/85. It was introduced to Ireland by means of statutory instruments and became law on February 1st 1990. The Environmental Impact Statement (EIS) is prepared by the developer and then the process of assessment – (EIA) is carried out by the relevant local authority. It will become the function of the EPA, the newly set up Environmental Protection Agency to carry out the assessment in future. All projects requiring an EIS automatically require planning permission and the process is the same as for any planning application with the right of appeal to An Bord Pleanála. There are some minor modifications. For example, with EIAs the local authority has eight weeks for the

assessment phase. The format of the EIS is laid down in statutory instruments. The EIS must have a non-technical summary. It must give precise details of the projects. Base line studies of the existing environment must be carried out. For afforestation projects, the following areas must be studied: geology, soil, climate, flora, fauna and water. Some of these surveys must be carried out at specific times each year, for example, a summer and winter bird count, and this leads to a long time lag between the purchase of the property and commencement of the project. This phase is critical. The base line data must be relevant, sufficient and credible.

The next phase of the report is to detail the likely impact of the project on the environment following the base line study. The potential impacts on the following must be studied: humans, flora, fauna, soil, water, air, climate, landscape and archaeology.

The group then moved to a clearfell site at Ballinahinch Forest and was welcomed by the Forest Manager, J. J. Kelly. He said that the site was clear-felled as a result of windthrow. The clearfell was planned to ensure that the view from the tourist road was not affected.

Three hectares were mounded with silt traps installed to avoid siltation of the lake. An area beside the lake which is a nature reserve owned by the OPW will be left unplanted.

Trevor Champ, Senior Researcher, The Central Fisheries Board, Dublin, emphasised the fisheries value of Derryclare Lake and the fisheries catchment generally for salmon and sea trout.

He mentioned the importance of preserving a treeless margin on the

verge of the lake. At clearfelling stage it is important to keep the felling coupe small as it limits the extent of drainage required and possible adverse impacts on the aquatic system. Drains should be kept short. This is now possible using the mounding technique. Also, drains should fall short of the lake shore, in order to allow the water to dissipate and drop its silt load.

Stop 3 Inchagoill Island

On Saturday morning the group set off for Inchagoill Island on Lough Corrib to look at the archaeological remains on the island. The trip was lead by Edward Bourke, an archaeologist with the Office of Public Works.

The island, which is owned by Coillte also contains the ruins of an early Christian monastery in the ownership of the OPW. Nothing is known of the early history of the monastery, but two churches survive, one dedicated to Saint Patrick, the other known simply as the Saint's Church. Saint Patrick's was originally a simple rectangular church to which a nave was later added. The Saint's Church is a Romanesque style nave and chancel church, with a fine Romanesque doorway decorated with heads on the capitals.

There is one piece of evidence which proves the site is extremely early. A pillar stone with the inscription LIE LUGUEDON MACCI MENUUH – The stone of Luguedon son of Menueh. This inscription dating to the sixth century is written in the latin alphabet, but uses the format of the earlier ogham inscriptions. This makes it the earliest latin alphabet inscription in Ireland.