

Silviculture

Until recently Irish silviculture was developed for the commercial production of large volumes of fast growing conifer timber, grown on a plantation system and predominantly managed by clearcutting and reforestation. Today, however, forest managers are required to deliver a greater diversity of products and services from forests and, as a consequence, a wider range of silvicultural techniques and systems are required to enable them to manage their forests in a multifunctional way.

Three silviculture projects are addressing key issues facing foresters today namely:

- the establishment and management of a broadleaf resource that is economically sustainable;
- the necessity to maintain continuous forest cover in sensitive areas with high biodiversity, landscape and recreation values;
- options to redesign western peatland forests with emphasis on enhancing greater environmental and social benefits.

Since the start of the afforestation programme in the early 1920s, emphasis has largely been placed on growing of conifers. This was in response to the poor quality land that was available for forestry and the superior productivity of conifers over the native broadleaved species. Conifer silviculture is therefore well developed but with broadleaves today forming approximately 30% of the annual planting programme there is a need to provide management guidance based on sound scientific silvicultural practice. The BROADFORM project aims to address particular problems regarding the early growth and form of broadleaf plantations, so that they are managed in a way that will ensure that they are productive and will provide quality timber, thus making them more economically viable.

In Ireland, commercial forestry practice is based on a clearfelling and reforestation silvicultural system as the principal means of managing plantations for efficient timber production. This system has proven to be very successful. Today, however, with increasing emphasis on environmental and social aspects of forests, an expanded range of tools is required to deliver multifunctional outputs from forests. Less intensive, alternative silvicultural systems – called ‘low-impact’ or ‘continuous cover’ systems – practised in many European countries, have the potential to deliver these outputs, particularly for sensitive sites. The CONTINUCOVER project is evaluating the potential of these systems in Ireland.

Large areas of conifer plantations were established in the west of Ireland from the late 1950s to the end of the 1980s. Some of these plantations have proven to be uneconomic due to low productivity, and environmental concerns have been raised regarding impacts of forest operations on peat soils and water courses. However, as these plantations mature and are harvested there is now an opportunity to redesign them in a way that will enhance their environmental and social benefits for the future. The REDAREAS project is a multi-disciplinary approach to examine environmental and economic aspects of peatland forestry with the view to providing guidance on future alternative management options.

The projects included in this thematic area are:

- **BROADFORM:** Silviculture of new broadleaved plantations: shaping and thinning.
- **CONTINUCOVER:** An evaluation of continuous cover forestry in Ireland.
- **GBREVIEW** – Updating the COFORD publication *Growing Broadleaves* originally published in 1998.
- **REDAREAS:** Management options for forests on western peatlands.