

## Forestry

# The challenges in creating a multipurpose forest



European-native species mix and bio-diverse areas achieve economic and ecological objectives in Co Kildare afforestation site. Donal Magnier reports

Planning an afforestation programme is a process that can take up to two years before planting actually takes place and decades before the forest owner receives a return on investment.

When Donal Whelan, acting consultant forester and Niall O'Neill, region manager for Green Belt, discussed the afforestation of a 35ha site in Barnacrow, Co Kildare last year, they decided on a tree species mixture that would fulfil the owner's commercial and biodiversity objectives.

Seven months after submitting Form 1 (forest grant application), an afforestation licence was issued by the Forest Service. Some alterations were made to the original plan by the Forest Service and the National Parks and Wildlife Service (NPWS), such as leaving an increased unplanted area. Foresters Whelan and O'Neill proceeded with the revised programme, which comprises 24.3ha commercial forest, 6ha native broad-leaves and 1ha grant-aided biodiversity unplanted land, while a 2.7ha field was precluded.

"The site is a basin peat, which transitions to a limestone-based mineral soil on the margins," explains O'Neill. "The basin peat area, which is very wet and uneconomic for agricultural use, has been historically used for grazing for a short period during the summer."

## Species selection

Species selection in forestry, as in other land uses, takes into account site location and soil characteristics. The foresters also based their species menu from observing the performance of trees in the adjacent forest.

"This was established in 1989 with Sitka spruce and ash," says O'Neill. "The ash, which is at a commercial hurley production phase, is suffering from ash dieback, while much of the Sitka spruce suffered from frost damage in the early years. It has progressed well, but required filling in with Norway spruce, which is more frost resistant."

"The species selection is based on the principle of planting the right trees in the right places," he says.

Mindful of the owner's main objective, Norway spruce was selected as the central crop. "We chose improved Danish seed orchard Norway spruce from None-so-Hardy in Shillelagh, Co Wicklow, and Danish provenance unimproved material from Coillte nurseries," O'Neill explains.

"The genetically improved planting



**SOCIAL DISTANCING IN BARNACROW FOREST:** Cousins Michael Rossiter and Martin Rossiter, Green Belt carry out the planting operation on a mounded Co Kildare site. \Donal Magnier



**Gerard Jordan of GP Jordan Plant Hire, mounding Barnacrow against the backdrop of the Hill of Allen.** \Donal Magnier

stock is only new to the Irish market and was derived from plus – superior – trees in Denmark, which were selected for vigour and for timber quality.

"We will assess the performance of both provenances in the coming years, as we plan to establish a research project in Barnacrow, comparing the planting stock."

O'Neill and Whelan were also "mindful of the sensitive nature of the site" and decided to create a 6ha native woodland, which acts as a wildlife and biodiversity corridor between the existing spruce-ash forest and the watercourses in the area.

The Grand Canal is close to the eastern boundary, while a feeder stream to the canal flows alongside the western border. A 10m wide stretch between the fence and stream is left unplanted, to allow for the vegetation to provide a natural silt trap, while the 2.6ha field between the planting site and

the canal was precluded on the advice of the NPWS.

The native plantation comprises pedunculate oak, Scots pine, wild cherry and improved downy birch, which is also part of None-so-Hardy's tree improvement programme. The native shrub species, guelder rose and spindle, are also planted.

A management road also marked out during the planning stage is left unplanted and will be converted to a harvesting road, with minimal disturbance to the crop, when the forest reaches the production stage.

## Conclusion

The project illustrates how different stakeholders can come together to deliver planting approval in a relatively short time.

These include the landowner and foresters – Green Belt and the Forest Service inspectorate – at the planning stage, while the success at the operational phase depends on teamwork between Green Belt management, nursery plant suppliers and the forest establishment team.

The site was mounded by Gerard Jordan of GP Jordan Plant Hire contracting company, while fencing was

erected by Patrick Murphy, PG Murphy Fencing Services. When I visited the site, planting was being carried out by Co Wexford cousins, Martin Rossiter and Michael Rossiter. They are employed by Green Belt, rather than working as independent contractors.

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This provides them with security and a career in forestry, which is an approach that could – and should – be replicated to a greater degree by other forestry companies, including Coillte, if they wish to entice more workers into the sector.

The overall impression of the Barnacrow plantation is how, with careful planning, both wood and non-wood objectives can be achieved to deliver a viable afforestation programme.

"The plantation will go on to produce timber, which will create jobs within the forestry supply chain and also help to increase our native woodland reserve," maintains O'Neill.

"This is very important for biodiversity and also helps to achieve our carbon sequestration targets."



Niall O'Neill.

## Frost causes damage to young plantations

The drop in nightly temperatures to -2.5°C (as low as -6°C in Northern Ireland) during mid-May has caused serious frost damage to young plantations, especially in low-lying areas in the midlands, east and north.

Late spring/early summer frosts are a feature of Ireland's maritime climate at this time of year. From May onwards, young plantations are vulnerable, as newly flushed shoots can be killed by freezing temperatures.

This results in trees losing a year's growth, as well as devel-



oping forked leading shoots. Repeated frost can kill off young trees entirely. However, once tree height is above the "frost line", they will generally grow on normally.

**Five-year-old Sitka spruce in Co Wicklow damaged by mid-May frost.** \Donal Magnier