

Eyes on Ecology



Pulp Fiction

When We Cannot See the Wood for the Trees

It would be fair to say that a wide degree of disconnect has developed between the general public and Ireland's commercial coniferous forests. Whisper the word "Plantation" within polite conversation and you are guaranteed a prickly reception. Instilling the forgotten virtues of spruce and pines seems an almost unforgivable ecological faux pas these days.

But is it more the case that plantations have become the victims of bad press - ironically, on the backs of the very paper they were, in part at least, grown and harvested to produce? Could it really be that we have lost sight of the wood within the trees?

"...it is fact not fiction, that healthy instances of succession can also be found flourishing in well-managed conifer plantation woodlands."

Beauty is in the eye of the beholder, but if we remember how to really look at nature in all its forms, and not just marvel at those charismatic species whose aesthetics evoke more positively-emotive responses in us, we can re-discover that the reputation of conifer plantations as dark and silent monoliths could not be further from the truth.

While it would be unenlightened to deny that the deep shade, windblow, and thick needle litter generated by older, denser, idled plantations have proved unfavourable to the establishment of some of the ecosystems more readily found and expected within broadleaf forests, it is fact not fiction, that healthy instances of succession can also be found flourishing in well-managed conifer plantation woodlands.

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What is Connectivity?

Landscape connectivity in ecology is broadly, "the degree to which the landscape facilitates movement among resource patches".

Alternatively, "the extent to which regional landscapes, encompassing a variety of natural, semi-natural, and developed land cover types, are conducive to wildlife movement and to sustain ecological processes".

Although there are many varying definitions of landscape connectivity, the key concept is the provision of interconnecting corridors that enable the movement of flora and fauna between different habitats.

Professionally managed woodlands provide important habitats in and of themselves whilst also providing interconnectivity between surrounding environments.

Adequate Forest Planning

Ireland's climate allows for the growth of a wide range of tree species, not only to maximise site productivity for the production of specific wood products, but also to enhance the amenity, landscape and biodiversity values of the forests.

As well as Spruce, commercial conifer plantations in Ireland can include species such as Cedar, Fir, Hemlock, Larch, and Pine, among others, and current conifer afforestation and reforestation plantation models include at least 15% broadleaf species together with a further 15% biodiversity in the form of open spaces.

The biodiversity value of a coniferous plantation can be enhanced through the creation of these edge habitats, ensuring there is a mosaic of clearfell, young plantation and old stands and by incorporating diverse habitats within the forest by retaining specific habitat types, such as hedgerows or wetlands.

The provision of semi-natural corridors along water courses creates opportunities to enhance and diversify not only the habitats along the edges of a plantation, but by enabling succession, will bolster all the habitats present in

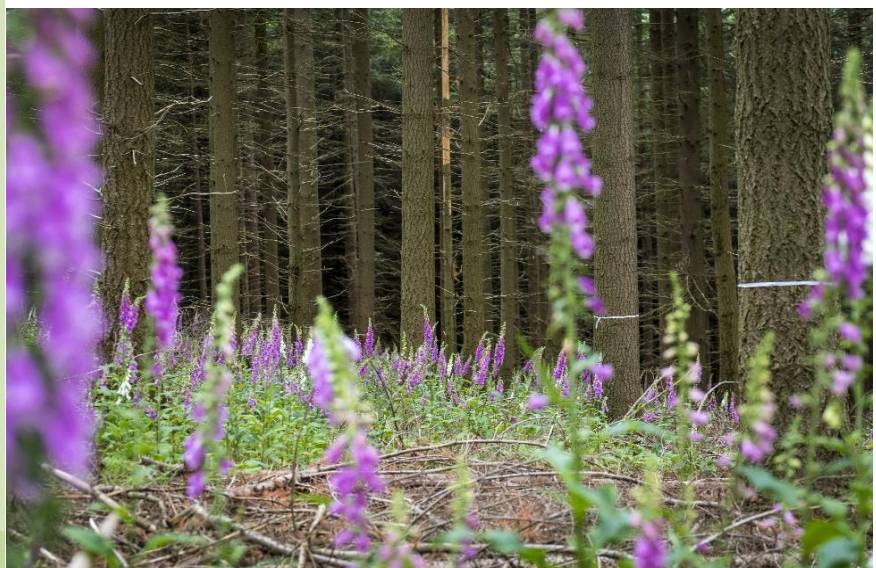
"The biodiversity value of a coniferous plantation can be enhanced through the creation of these edge habitats, ensuring there is a mosaic of clearfell, young plantation and old stands..."

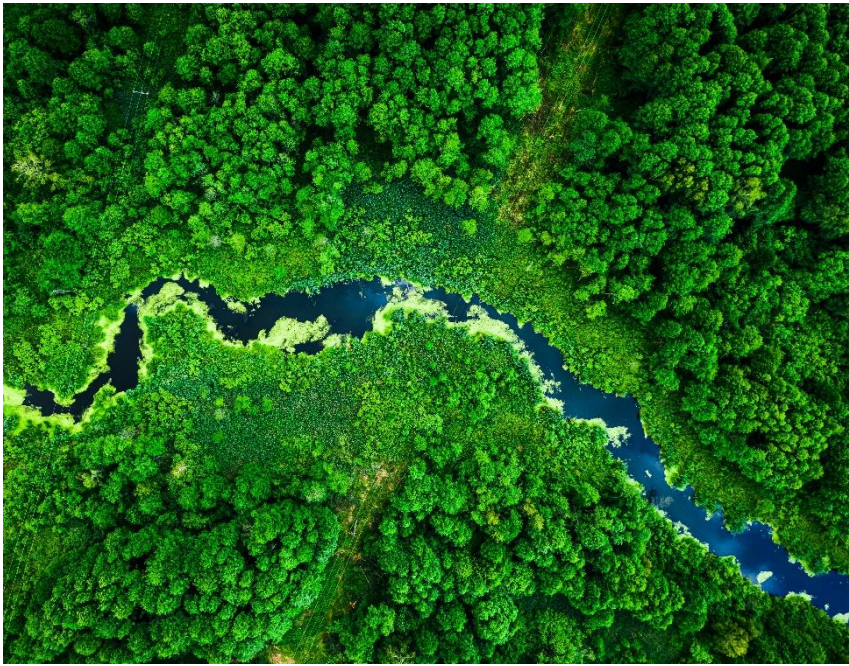
These areas of broadleaf exist as a result of the commercial forest being planted. To remove the commercial element is to also remove the broadleaf component being established.

These provisions for broadleaf planting go beyond the clinical requirement of buffer zones and setbacks. With adequate forest planning, the considerable size of many established coniferous plantations provides scope for creating networks of restored and open habitat to increase connectivity (see panel to the left) and overall area.

the plantation, stabilise soils, increase water quality, and provide shading, as scrub develops in these areas.

Open spaces also facilitate the passage of wildlife and provide good cover and shelter from the disturbance of human activities, augment new and existing ecosystems and create much-needed habitats for bats, birds and pollinators in the area. Open areas within rides and thinned clearings can give rise to plant species such as Burnet Rose, Furze, Cocksfoot, and Fox Glove.





Sympathetic Management

Conifer plantations can support flora and fauna species that would otherwise be absent from the landscape.

When managed sympathetically for wildlife, the banks of the streams, drains, and ditches flowing through plantations are well-vegetated. They host species of the surrounding habitats with incidences of wet woodland on the river margins and areas of undisturbed wet grasslands, with species such as bindweed, hedge vetch, cleavers, hairy willowherb, meadowsweet, silverweed, and creeping buttercup, to name but a few.

Beneath the canopy of well-managed conifer plantations, under-storeys of honeysuckle, holly, sally are regular features. Thriving field and herbaceous layers give rise to plants such as bramble and Herb Robert; ferns, including hard fern and hart's tongue; lush carpets of bryophytes, such as Tamarisk-moss, Feather leafed Moss, Great Golden Maidenhair, Springy turf-moss, Glittering woodmoss; and liverworts such as Bifid Crestwort.

Dawn choruses fill conifer plantations with bird song from resident passerines such as Coal Tits, Blue Tits, Long-tailed Tits, Crossbills, Bullfinch, Blackbirds, Linnets, Robins, Wrens, Dunnocks, and Skylarks. Throughout the day they are joined by Corvids such as Jays, Hooded Crows, Magpies, Rooks, and Ravens. All of which invariably attract the attention of raptors such as Buzzard, Kestrel, and Red Kite.

As evening rolls around, the hunting cries of Long-eared owls and Barn Owls can be heard, while mammals such as Red Squirrels, Badgers, Otters, Pine Martens, Foxes, Hedgehogs, Mice and Stoats forage among the fungi, seeds, and berries on the forest floor. Summer and Winter avian migrants only serve to add to the rich variety of wildlife that can be found in plantations.

Existing plantations support a range of ecosystems, particularly where there is a diversity of age structure and patches of open habitat, allowing light to reach the forest floor.

So, while it remains true that Conifer plantations are a crop, when we recognise

What is meant by "Mosaic"?

A mosaic area or site is comprised of multiple habitat types or 'patches' within a landscape, meaning that an environment is composed of different communities or a cluster of different ecosystems.

Mosaics are the patterns within landscapes that are composed of smaller elements, such as individual forest stands, shrubland patches, highways, farms, or towns. A habitat mosaic is ecologically important in creating or maintaining biodiversity.

'Patch dynamics' is an ecological perspective that the structure, function, and dynamics of ecological systems can be understood through studying their interactive patches.

Successful conservation includes understanding how a patch/mosaic changes and predicting how they will be affected by influences such as land use, disturbance, restoration, and succession.

Succession is the process by which the structure of a biological community evolves over time, for example, from bare ground to mature forest.

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the importance of maintaining a balanced ecosystem which supports both human development and enhances the biodiverse environment in which we all live, the value of biodiversity and the benefits gained from conifer plantation ecosystem services reach far beyond that which can be measured in financial terms.

Veon Ecology

Decision makers in commercial organisations and governments increasingly recognise the need to incorporate environmental concerns into their operations and understand the impact that their activities are making on the natural world.

These organisations need to balance development plans with the protection of our natural environment, our flora and fauna, and our habitat resources.

External pressures on natural resources, including climate change, population growth and land use changes, impact on developmental decisions that must be resolved within a strict legislative framework.

Veon recognises the importance of maintaining a balanced ecosystem which supports both human development and enhances the biodiversity of our environment. The value of biodiversity and the benefits gained from ecosystem services reach far beyond that which can be measured in financial terms.

Veon ecologists are committed to identifying and creating solutions for our clients to protect, enhance and monitor biodiversity values, and avoid or mitigate any potentially negative impacts predicted to arise from proposed activities.

Our ecology team are members of the Chartered Institute of Ecology and Environmental Management (CIEEM). Contact us today to find out how our team might be able to help you or your clients.



A Note on the Author

Daniel Connell is Senior Ecologist with Veon Ecology, the ecology and environmental services division of Veon Ltd.

Prior to joining Veon Ecology, Daniel worked for many years as a Freelance Ecologist and Environmental Correspondent. He has experience working on large infrastructural projects including flood relief schemes, forestry, road projects and oil & gas exploration. He has overseen various projects as Ecological Clerk of Works and has carried out extensive terrestrial, freshwater, and marine ecology fieldwork. Daniel has a comprehensive understanding of environmental law and an in-depth knowledge of coastal, wetlands, freshwater, and woodland ecosystems and the respective botanical, avian, invertebrate, and mammal species which inhabit them.