

Introduction to woodland management in Wales.

Wales' Woodlands

The Wales chapter of the UK National Ecosystem Assessment notes that 'the post-glacial, 'natural' vegetation of Wales comprised mainly broadleaved deciduous forests in the lowlands and valley sides, with tundra-like heathlands in the uplands. Now, mainly due to human management, the vegetation consists principally of a mosaic of improved grassland, woodland and some cropland in the lowlands, with 'semi natural' grazing land and some heathland in the uplands'. There are over 128,000 hectares of broadleaf woodland in Wales and most of this is found on farms as part of this 'mosaic' landscape. Woodland contributes significantly to other land uses and society as a whole and provides important benefits in its own right. Coed Cymru has helped to manage over a third of this woodland resource since 1985, but there is still a long way to go to protect, use and enhance our native resource.

Most broadleaf woodland in Wales contains one or more of the following species: oak, ash, beech, sycamore, birch, cherry, hazel, alder, rowan, hawthorn, holly. Their ability to grow alone or in mixtures, usually in small areas on steep sided valleys, creates the woodland we associate with the Welsh countryside.

Left to nature, cleared areas are first populated by light seeded pioneer species such as birch and goat willow, which are relatively short-lived and are soon overtaken by other light demanding climax species such as oak and ash. Below the canopy, shade bearing species such as beech and hawthorn await their niche when a mature neighbouring tree dies. The balance of this perpetual cycle of succession is disturbed when woodland is clear cut or grazed, resulting in stands that consist of climax vegetation only and limit new growth of understory species and saplings.

How can we improve the condition of Welsh woodlands?

Intervention is required to manipulate the woodland structure by selecting and removing trees (thinning) to let in light and stimulate regeneration of new saplings. Regeneration will take place if thinning is carried out by selective felling of individual trees or small groups, and if parent trees in the vicinity produce enough seed for saplings to germinate. Protecting the new saplings from grazing animals is usually required, at least for an initial number of years. Regular thinning to leave the best trees to grow will gradually increase the economic value of the woodland and thinnings can provide pulp, fuelwood and a range of other products. This type of management in using and adapting natural systems as tools to improve the condition of the woodland supports a wide range of benefits and provides the



landowner or manager with a low input, low risk option which is appropriate to integration with other land uses.

Silviculture describes these systems and the science of growing trees, the practice of controlling and manipulating all the stages in the life of a crop from germination to felling, including any systems that affect crop composition and development. The special features of growth and site requirements attributed to each species are termed its silvicultural characteristics. We can use silvicultural characteristics to actively manage and enhance aspects of woodland quality for a variety of aims (outlined below).

Why is woodland management in decline in Wales?

Our early ancestors began to clear Wales' extensive broadleaved forest, first to harbour game then to create farmland. The area of broadleaf woodland continued to decline steadily so that by the medieval period woodland cover was little higher than now. But woodlands remained a vital source of timber and many other products. In the 19th century, cheap imports swamped the traditional markets for home-grown timber bringing to an end, systems of woodland management which had stood the test of centuries. In addition, many Welsh woodlands were clear felled during the first and second world wars. Consequently, woodlands in Wales are often even-aged, containing only climax species with little or no understory or regeneration and little history of continuous management.

Benefits of woodland management

a. Timber and fuelwood

All woods, no matter how small will provide timber and wood fuel. The quality and quantity of timber produced will strongly depend on the level of management. It is possible to grow up to **100 high quality trees per hectare**. This is achieved by growing the young trees close together to encourage straight growth and then gradual thinning and selection to leave the desired canopy trees. The thinnings provide non-timber benefits such as firewood and wood chip. By aiming to produce higher quality timber as part of overall woodland management, the economic value is maximised. This allows 'little and often harvesting' of the woodland crop benefitting gradual regeneration, maintenance of game and wildlife populations, landscape continuity and visual appeal. This process does, however take time, and incentives in the early stages of management towards the cost of infrastructure and fencing are often required.

b. Shelter

Woodlands located in strategic places may significantly improve the local microclimate for crops and livestock, maximising production and reducing farm costs through an array of



different mechanisms e.g. providing **biosecurity**, reducing incidence of **liver fluke and lameness**, **increasing grass production** in early spring, reducing wind speed and chill factor, **increasing crop and livestock productivity**, **reducing lamb mortality**, **increasing crop yields**, reducing **soil erosion** by water and wind, **aiding management** e.g. control stock movement and provides **shelter for handling areas**. When managing for this type of woodland, the type of shelter required has a predominant influence over how to manage the woodland (see our shelterbelt document).

c. Nature

Woodlands provide vital habitats for both flora and fauna. Practices such as retaining dead wood are important for maintaining and enhancing woodland diversity. Gradual felling and regeneration as opposed to clear felling will also enhance the diversity and richness of plants and animals within the woodland. Diverse mixtures of tree species and ages will maximise the range of species the woodland can support as different species are adapted to different environmental conditions. Retaining a diverse range of environments within the woodland is key to supporting a diverse range of species e.g. butterflies enjoy sunlit areas such as the woodland edges/ sunlit disturbance patches. Promoting woodland diversity through management in a greater number of woodlands will promote biodiversity across the landscape as well as within the individual woodland patch. This will strengthen the woodland ecosystems resilience to any threats such as climate change and disease.

d. Sport and recreation

Woodlands support a number of game species. If sporting value is a priority for woodland management then woodlands should include a range of low cover for nesting, open areas for feeding and dense taller trees for roosting. You may wish to plan the woodland layout in order to encourage the use of specific routes flushing birds out of the woodland. Woodlands across Wales also provide important benefits for recreation and permissive access, are highly regarded by communities and can be used to provide training skills and wellbeing.

Contact Coed Cymru for further advice and information
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