



# Managing Woodlands for Biodiversity and Woodland Products

An advisory note produced by the Mercian Woodland Biodiversity Project, a partnership between **Small Woods Association** and **Severn Trent Water**

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# Introduction

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Delivering good biodiversity and harvesting good wood and timber products can work in parallel in your small woodland management. Delivering both together will typically help make small woodlands more resilient, sustainable and viable.



# First things first

## Get to properly know the wood first, then make a plan

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Drafting a simple plan will make you think objectively about the woodland resource and carry out a basic inventory – the woods main characteristics, its composition – tree species, stage of growth, condition – and help to define the challenges and opportunities that you see ahead.

Think about biodiversity, woodland structure, access, landscape and historic environment if it's a long-established wood. Use the SWA, Woodland Assessment for Biodiversity guide and SWA Advisory Notes series on managing woodland for biodiversity to help inform the process:

**[smallwoods.org.uk/mercian](https://smallwoods.org.uk/mercian)**

Use other core information and resources to build up a complete picture of the existing biodiversity value of the wood and identify ways by which it might be conserved and improved in future:

**[woodlandwildlifetoolkit.sylva.org.uk](https://woodlandwildlifetoolkit.sylva.org.uk)**

Making a plan will help to set a direction of travel for your woodland management. It will also help you get a better understanding of the trees and shrubs that make up the wood and how you are planning to

manage them, for biodiversity and other objectives. This in turn leads to an informed picture of what woodland work will take place and hence what timber and wood products will likely be generated.

The government forestry agencies in each devolved nation offer grant systems to support woodland owners in producing woodland management plans, though they usually require a minimum total woodland size of 3 ha. to access funding. The myForest system from Sylva provides free online mapping, digital tools and other resources to enable sustainable woodland management planning for all sizes of woodland with a more comprehensive paid option available for professional use.

**[myforest.sylva.org.uk](https://myforest.sylva.org.uk)**

Whatever the key values of a wood, a well-developed woodland assessment and plan can also create a baseline for monitoring biodiversity values and woodland management progress against a work plan. An enterprise or woodland economy strand in management is also important and realistic for most small woodland owners.

In simple terms, working towards

a woodland that has structural complexity – for example different tree and shrub canopy layers, a field layer, internal and external edge habitats, deadwood, clearings and

glades – will usually increase the biodiversity of a wood by maximising habitat types and presenting more ecological niches for diverse species.

## Markets and outlets for your wood and timber

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Begin to develop your ideas for markets for woodland products. Try to develop a network of contacts and outlets. Keep the markets as local as possible to reduce transport, handling costs and environmental impacts. Think carefully about how much time and effort you personally want to put into potential products – work with woodland product streams that suit you, your skills, the amount of time you can commit to your woodland work and your equipment.

Some markets may be for simple, round, unprocessed wood products – cut poles, sawlogs in the round (un-sawn), piles of cordwood cut to even lengths and stacked to season (for firewood) or for collection by others.

Other potential markets require some product processing or conversion, either in the wood or

close to it in a yard or workspace. These could include:

- firewood processing – crosscutting, splitting and drying/seasoning
- charcoal making in kilns or retorts – for barbecue or artists charcoal or biochar for soil improvement and horticultural uses
- cleaving oak and chestnut – usually for fencing materials
- making woven, cleft or turned (on a pole-lathe) products from hazel, ash, willow etc.

These ‘value-added’ products will generate more return from the wood or timber, but they all need skill, time, effort and effective marketing to realise these higher sale values.



# Management methods and woodland products

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Coppicing will typically create small-diameter poles and depending on species, rotation (harvesting cycle) and quality these can be used for different functional purposes. The relationship between sustainable coppicing and high ground flora and invertebrate and songbird values is fundamental. The regular opening of the coppice canopy at cutting stage promotes flowering and nectaring opportunities that support diverse invertebrate and songbird populations and key species such as dormouse depend on a mosaic of different-aged coppice to function.

High-quality straight hazel may be split for hurdles or thatching spars. Thicker poles and rods may be cut for

hedging stakes and longer, moderate quality rods for hedgelaying binders/etherings (heatherings). Hazel rotations are typically 7-12 years.

Finer coppice material and tops may have outlets as brushwood fascines or faggots for watercourse bank protection.

Species like sweet chestnut and oak are often grown on a longer rotation (15-20 years), producing larger poles that can be cleft – split lengthways along the grain with handtools – into half-round posts, stakes and rails. Cleft chestnut and oak heartwoods are typically strong and durable (rot resistant) without chemical preservative treatment.

Thinning of young broadleaves will



**Coppicing** | Sarah Niemann

typically generate mixed quality poles and branchwood that are often used for firewood or charcoal production. Thinning of dense young birch stands can generate brushwood for horse jumps and racecourse use.

Conifer thinnings may have value for mainstream fencing markets if they are

available in large volumes (50 tonnes+) and can be stacked for removal by timber trucks. Small volumes of conifer are typically mixed into firewood supplies, with some selected species like larch, Douglas fir and Western red cedar in local demand for pole buildings or structures.

**Table 1. Management systems and biodiversity**

<b>Silviculture</b>	<b>Characteristics identified as positive for biodiversity</b>	<b>Characteristics identified as detrimental to biodiversity</b>
<b>Clear cut</b>	<ul style="list-style-type: none"> <li>• Large open spaces</li> <li>• Refuge for grassland species in intensively managed arable landscapes</li> <li>• Provision of edge habitat</li> <li>• Provide horizontal diversity on a landscape scale</li> </ul>	<ul style="list-style-type: none"> <li>• Even-aged structure</li> <li>• Lack of horizontal and vertical stand complexity</li> <li>• Structure favours generalists and excludes woodland specialists</li> <li>• Management technique precludes many species</li> <li>• Lack of natural regeneration</li> <li>• Lack of tree species diversity</li> </ul>
<b>Coppice</b>	<ul style="list-style-type: none"> <li>• Permanent and temporary open space</li> <li>• Standard trees</li> <li>• Varied ground flora</li> <li>• Structural diversity</li> <li>• Deadwood in abandoned coppice</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of deadwood in active coppice</li> <li>• Lack of tree species diversity</li> <li>• Lack of structural diversity associated with abandoned or over-mature coppice</li> </ul>
<b>Selection felling</b>	<ul style="list-style-type: none"> <li>• Stand continuity</li> <li>• Structural complexity</li> <li>• Standing biomass</li> <li>• Tree age distribution</li> <li>• Gap release and open areas</li> <li>• Horizontal diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Few refuges for species susceptible to disturbance</li> <li>• Open areas can be too small to benefit a full suite of open habitat species</li> <li>• Absence of large veteran trees</li> </ul>
<b>Shelterwood</b>	<ul style="list-style-type: none"> <li>• Structural diversity in mid-storey</li> <li>• Canopy trees</li> <li>• Seedling regeneration</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of open space, ground flora and microhabitats</li> <li>• Lack of horizontal diversity</li> <li>• Even-aged structure and lack of mature forest</li> </ul>

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Felling and selective felling (and subsequent restocking with resilient species) is often necessary to alter the structure of a woodland as part of a wider plan for future management. Examples include conifer removal from an ancient woodland site to enable replanting with native species, or dealing with large-scale tree health issues such as ash dieback or larch disease.

Such management works usually produce sawlog sized material – tree stems that are big enough to put through a sawmill and create sawn, dimensioned timber. These logs are typically greater than 450 mm. mid-diameter to get the most effective recovery of sawn wood from round logs. Most mainstream commercial timber merchants and sawmillers are not interested in small parcels of timber

– less than 50 tonnes – unless it is of the very highest value or an uncommon species such as yew or walnut.

Processing sawlogs in the wood or close to where they have been felled using mobile milling equipment can be an effective way of adding real value to small parcels of logs. The value of sawn timber is many times higher than round wood and sawn local timber is often in demand for green building work, self-build projects and for farm and estate buildings.

Woodland operations have both positive and detrimental effects on biodiversity (please refer Table 1). Consideration of the impact of your chosen approach on the structure of your woodland and resultant composition of biodiversity habitats will contribute to enhancing the sustainability of the woodland.



Selective felling of conifers  
Shutterstock.com/Robert Avgustin



# Species characteristics in wood and timber

The main tree species generate wood and timber with different physical and aesthetic qualities and characteristics that influence their uses and applications. Examples include:

## Broadleaves

**Oak** – slow growing, strong, durable (rot resistant) heartwood, easily worked when green (freshly felled). Sawn oak uses – building and framing, cladding, furniture (indoor and outdoor). Round oak – cleaving into fencing materials – stakes, strainers, struts and fence pales. Smaller wood for firewood and charcoal.

**Sweet chestnut** – as per oak, but faster growing.

**Sycamore** – fast growing, 'clean' white timber, excellent for worktops, counters and food preparation surfaces. Non-durable. Smaller wood for carving and turning, firewood and charcoal.

**Ash** – flexible and resilient. Pale, with attractive, bold grain. Non-durable. Smaller wood for turning, cleaving and excellent firewood.

**Beech** – 'clean' pale timber, fine flecked grain. Non-durable. Sawn wood for furniture, flooring. Smaller wood for carving and turning, firewood and charcoal.

**Wild cherry** – fast growing, beautiful heartwood colours, faint cherry fragrance. Non-durable. Smaller wood for carving and excellent firewood.

**Birch** – fast growing, pale blonde timber, excellent for interior cladding and flooring. Non-durable. Smaller wood for carving, firewood and charcoal.

**Alder** – fast growing, rust coloured heartwood, good for interior cladding and flooring. Non-durable (unless completely underwater). Smaller wood for firewood and excellent charcoal.

**Hazel** – Has a wide range of useful products when grown on an 8-14 year coppice cycle. Hedgelaying stakes and binders, hurdles, faggots, thatching spars, beanpoles and pea sticks.

## Conifers

**Scots pine** – strong tough wood, easily sawn. Good for interior building and cladding. Non-durable.

**Douglas fir** – strong high-performance timber, reddish heartwood, sought after for building and framing. Semi-durable heartwood.

**Spruce** – fast growing, versatile white timber, easily sawn. Good for interior building and cladding. Non-durable.

**Western red cedar** – heavily fluted lower stem is common. Aromatic and durable heartwood in high demand for cladding, building and garden projects.

**Larch** – strong high-performance timber, reddish heartwood, sought after for building and framing. Semi-durable heartwood.

# Woodland enterprise, economy and biodiversity

## Joining up the dots

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The ability of a wood to 'pay its way' will clearly depend on a multitude of factors including the size and quality of the existing wood and timber resource, its workability (access and terrain), the sensitivity of the site from ecological and landscape perspectives and the skills and time that an owner can bring or organise.

But woodlands that generate some financial return from effective harvesting, value-adding and marketing of wood and timber usually show a more consistent approach to management. They also often allow investment in woodland biodiversity to be a core part of management.

Whatever the size and type of woodland you own and manage, look for opportunities to realise returns from your woodland products. As well as creating an income stream it will add momentum to your work and help keep you and your co-workers motivated and interested. It will often generate further contacts and a developing network of interested people who want your charcoal, firewood, bean poles, carving blanks or cleft tent pegs, perhaps valuing the opportunity to meet the maker and see where the products originate. People tell people and the network builds...

Mobile milling is a different scale of



operation, but the rewards can be strong if you can organise contractors and market sawn timber effectively. Good planning and logistics are important – level ground for the mill to set-up, a telehandler or forklift to help load sawlogs and move sawn timber.

Milling the durable species timbers when green for building markets can be very efficient – the material goes straight from the saw to the end-user. You may alternatively choose to air-dry sawn timber to add further value. This again needs a good level site, fixed shelter from rain and sun

and careful attention to handling and stacking to maximise value.

Your woodland income can help subsidise the cost of managing your small woodland. It could fund investment in training for yourself or others, in PPE and equipment, in contractor time and labour or professional advice. You may also want to invest in infrastructure like deer fencing, track or ride improvements, a tool store, low-impact camping and WC facilities or wildlife and biodiversity improvements.

## Basic checks and reference points

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As a very simplistic guide and check, get into the habit of asking yourself these questions when you are working in your woodland or planning to do work;

- How does this work contribute to the management plan or work plan and is it a high priority relative to other objectives?
- Why is this wood being cut, what products will it create and what is the market for them?

Answering these questions will typically keep you;

- a) more focused on the plan you have developed – however simple it may be – and the improvements to biodiversity, landscape, access etc. that will no doubt be included within it, and
- b) more likely to produce saleable wood and timber that will generate income, small or large, and contribute to the current and future viability of your small woodland



Found this advisory note helpful? Find out more on our website.

 [smallwoods.org.uk/mercian](https://smallwoods.org.uk/mercian)

## Interested in involving your woodland in the Mercian Woodland Biodiversity Project?

If your woodland falls within the Severn Trent catchment and you would like to hear more about the project, please get in touch.

**Contact the project co-ordinator**

**David Reeve**

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