Woodlands for Wildlife

Planting wilder woodlands in Norfolk

Planting a new woodland is a wonderful legacy for the future. Woods store carbon, helping to combat climate change, but they are also places that people and wildlife will enjoy for many years to come.

A few simple steps are needed to make sure new woodlands really do help wildlife. This leaflet will help you design a new wood and prepare for long term care as trees mature.

Choosing a site

If you have more than one possible site in mind for tree planting, the following will help you select the best place to plant a wilder wood:

- **Site your wood next to existing conservation features:** placing the new wood next to existing conservation features such as ponds, meadows, woodland or scrub will make it easier for wildlife to spread into the wood.
- **Incorporate old trees and hedgerows:** if possible plant your woodland next to old trees and established hedgerows. Many woodland birds, including woodpeckers, nuthatches and tits, require old trees to provide food and nest-sites.
- **Think about the 'Living Landscape':** wildlife needs a network of interconnected habitats across a landscape. The Wildlife Trusts call this a 'Living Landscape'. Siting new woods where they act as corridors or 'stepping stones' between exiting habitats, or where they buffer or extend existing woods, will bring greater benefits for wildlife. Norfolk Wildlife Trust may be able to help you choose a good location in the Living Landscape of Norfolk.
- **Size:** one thing to consider is that larger woods contain more types of birds and other species. Birds such as woodpeckers and nuthatches tend not to breed in small, isolated woods. However, a series of small woods of equivalent area may, if they are varied in their character, be as useful for wildlife.

Where to start?

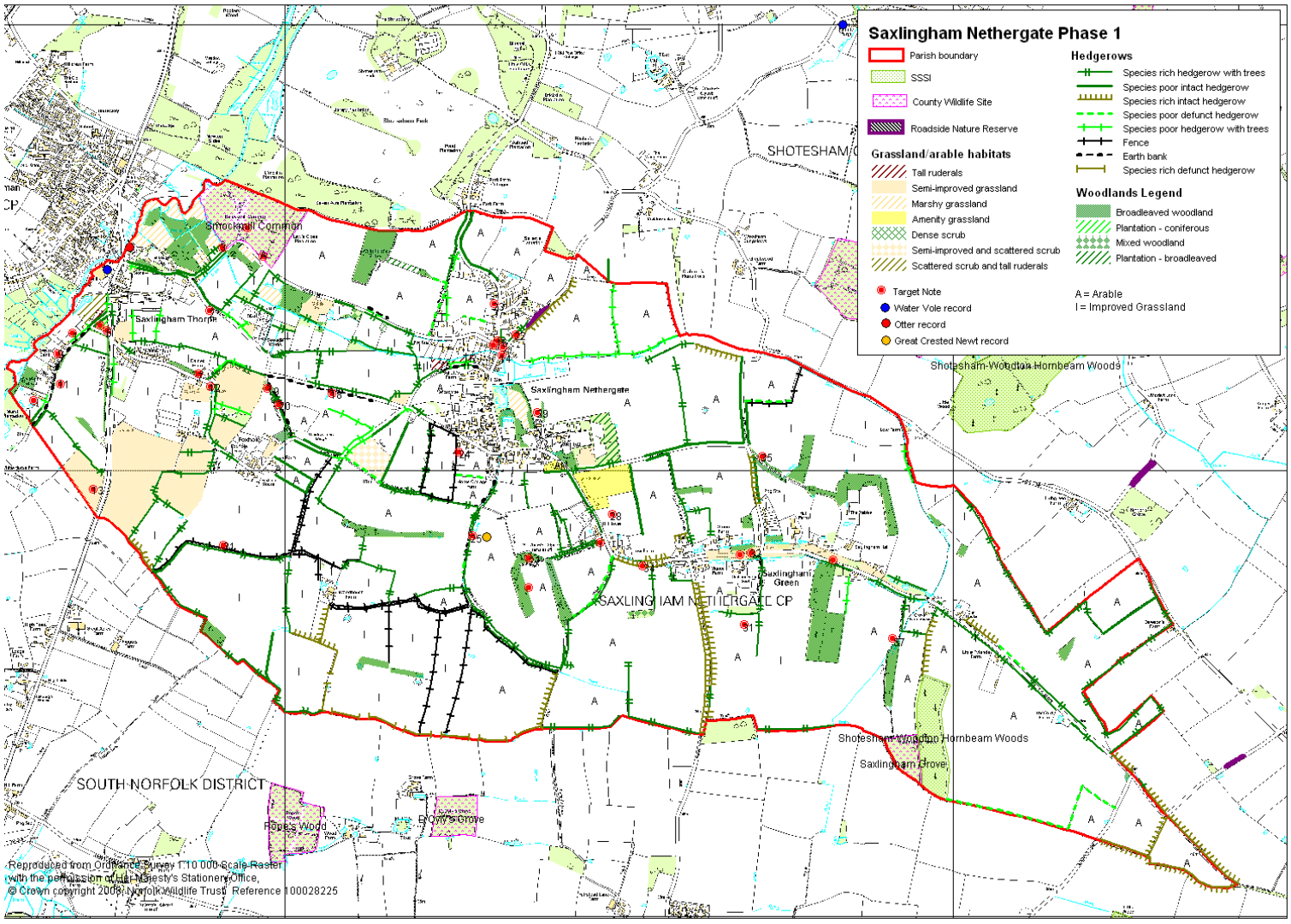
Almost all advice on caring for land for wildlife begins with the question 'what is there already?'

There are three important factors to consider:

- **Soil type:** different types of trees and woodland grow on the different soils of Norfolk: alder and willows dominate wet woods along rivers; oak and ash grow on the clays of South Norfolk, whilst birches are typical of sandy or acidic soil. Knowing your soil type and how wet or dry it is will help you determine what species to choose.
- **What grows there already?** Unless the land has recently been growing crops, it is a good idea to carry out a survey of existing plants in spring and summer. A plant survey might reveal some surprises – such as areas with meadow flowers, including orchids, which would be lost in the shade created by trees. It is a good idea to draw a map of features such as ponds, hedges, old trees and meadow areas, as this will help you develop a wildlife-friendly design for the wood.
- **Is it on the map?** Some areas of Norfolk have already been surveyed and identified as being good for wildlife. These include Sites of Special Scientific Interest (SSSI) and County Wildlife Sites (CWS).

Before you start, find out if the land has been surveyed and is notified as an SSSI or listed as a CWS. This information can be obtained from the Norfolk Biodiversity Information Service (NBIS) or from Norfolk Wildlife Trust. If the land is within or in close proximity to an SSSI, it is important to consult Natural England. If it is in a CWS or close to one, NWT can provide advice.

Some existing woods are listed as 'ancient woodlands', where evidence shows they have been in existence at least 400 years. These are extremely important sites for nature conservation. Part of this importance is the community of trees and shrubs they contain. If you choose a new woodland site next to an ancient one, ensure that you plant only local stock of native species in order not to damage the scientific value of the site.



The Wildlife Trusts

Saving **Norfolk's Wildlife** for the Future

Re-wilding

Re-wilding means allowing land to regenerate using natural processes. On large sites, herbivores from deer and pigs to hardy breeds of pony and cattle roam and create a variety of habitats from grazed grasslands to woodland edges.

Even on small sites, allowing areas to revert to woodland with minimum human intervention is a great idea, although, as the wood grows, some work to create a varied age structure will be needed. Each stage of the process, as the land is slowly colonised by trees, offers food and shelter to wildlife. Often the results, as deer browse and trees seed in different years, are more varied and interesting for wildlife than planted woodland.

If there is a good source of seed nearby (existing trees, woods or hedges), consider re-wilding some or even all of your plot – you will be amazed by the results.

The Miyawaki method

The Miyawaki method for planting new woodlands is a new idea that has gained support around the world. The method involves planting young trees at a high density (as many as 30,000 per hectare) to rapidly create a woodland with a varied structure.

The method is very useful on former arable land, or where construction work has degraded the soil. The soil is improved with soil improver and the seedlings are collected or grown from locally gathered seed and planted at a high density with stakes where necessary. A thick layer of mulch is used to simulate the rich leaf litter of woodlands and seedlings are weeded and watered as needed for the first year or so.

Choosing trees and shrubs

Once you have found out about your plot, you can start to select trees and shrubs that are suited to it and that will benefit wildlife.

- **Choose species suitable for the conditions** (soil, drainage, etc). of your site, and which fit in with your overall aims for the wood (see below), though remember that most species survive on a range of soils. For an easy guide to appropriate species, consider what is growing well in woods and hedgerows near your site.

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- **Plant native trees and shrubs.** Much more wildlife is associated with our native trees than with non-native conifers or broadleaves. Plant mostly native species and preferably trees grown from local or at least UK seed. This ensures that local gene types survive, with as wide a variety as possible across the UK. In the face of pressures such as climate change and plant disease, a wider variety of gene types is a good survival strategy. If you are interested in collecting seed to grow yourself, NWT can provide some simple advice.

- **Plant a range of species.** Wildlife thrives on variety! Woods which contain a single kind of tree, whether conifer or broadleaf, are of limited conservation value, so plant a wide range of species, including blossom and berry-bearing trees and shrubs, to ensure that food is available year-round for birds.

- **Plant evergreens for winter shelter.** A few holly and yew trees will provide essential shelter for birds in winter. Plant clumps to make a worthwhile area of cover and a good windbreak.

- **Exotic species.** Although native species are best for wildlife, there is often place for some specimen trees, especially if you want to include commemorative plantings or mark special areas in the wood. Species like walnut and sweet chestnut are lovely trees to include and you might have the bonus of a few nuts too!

There is no hard and fast rule to the planting mix you choose, although drawing on the range of species in local old woods often helps. Planting mixes can be adapted to circumstances. For example:

- Add willows and alders on wetter ground.
- Increase the amount of hazel if you want to grow more coppice wood for small timber.
- Replace some of the oak with hornbeam, yew, small-leaved lime and sweet chestnut if soils are suitable.
- Increase clumps of thorny scrub to attract turtle dove, nightingale and other small birds.
- Dog rose and spindle are useful for berries and form attractive plantings along the edges of rides and glades.
- Crab apple and wild pear occur in Norfolk hedges, so will thrive on the edge of woods. Both are useful for berries and fruit.
- Consider including a black popular or wild service tree. These are rare trees that thrive in some areas.
- Bramble and wild rose are both extremely valuable species but should appear within the new wood by themselves. If they do not, wild roses can be added at a later date.

Designing the woods

Before you start drawing up your plans for planting, take an hour or two to walk in an old woodland (e.g. a woodland nature reserve). You will see that old and ancient woods have a varied structure. There may be rides and glades, ponds and ditches around the edge. There will be old trees and hopefully young trees and also dead trees, both standing and fallen. There are tall, mature trees and smaller bushes, tangles of bramble or thickets of blackthorn. Sometimes there are coppiced trees with multiple stems, where they been cut at ground level and allowed to re-grow, and occasionally old pollards, cut at head height. These features help provide a range of different habitats for wildlife. Thinking about how to include them in your wood will help your design.

Helaina Parkinson

It is also wise to think about the long-term future of the woodland and if there is any future use for timber. For example, you might want coppice (see below) for firewood, small timber, hurdles and greenwood working. If so, design the wood so areas to be coppiced are easy to access, perhaps mimicking the age-old pattern of oaks widely spaced with hazel coppice underneath some areas.

If you are considering the future use of the wood for timber or planting with a government grant scheme, advice from the Farming and Wildlife Advisory Group (FWAG) or the Forestry Commission is invaluable. There may be additional funding for planting woodlands over 10 hectares with permissive access.

If you are designing the wood with public access in mind, lay out rides and glades for circular walks and create some areas that are quiet for wildlife with minimal or no access.

Once you have mapped the site and decided what to plant, you can develop a simple design and include at least some of the following features:

- **Create a 'woodland edge'.** The edges of woods are extremely important for wildlife because their sunny conditions are ideal for bees, butterflies and other insects. Try to create as much edge habitat as possible and avoid straight lines – 'scalloped' edges are ideal as they have warm, sheltered areas. Area for area, squares and rectangles will have less edge than irregular shapes.

- **Concentrate shrub planting at the woodland edge.** The south and west edges receive most light. Shrubs planted here tend to grow well and attract a greater number of birds to nest in them, as well as providing warm feeding areas for invertebrates.

- **Leave open spaces and glades.** Areas where there are no trees or shrubs are vital in woodlands. Full sunlight reaches the ground here and the wildflowers and grasses that grow support a variety of butterflies and small mammals. Unplanted patches on the edge of a wood are potential hunting sites for barn owls.

  Small glades (up to 20m diameter) linked to other open spaces will allow butterflies to travel freely through the wood. Create glades where rides intersect. Cut the glades every year or two to ensure that they stay open and grassy. Note: Clearings over 20m wide do not count as woodlands for grant purposes.

- **Create wide rides with shrubby edges.** Rides through woodlands are useful for management, or for just enjoying the wood. With careful planning and management, they can also be excellent for wildlife, with open sunny spaces for butterflies, bees and wildflowers.

  Design rides that provide warm, sheltered conditions by having several running in different directions, ensuring that at least some are not open to the prevailing wind.

  Make most rides at least 10m to 15m wide and plant shrubs at their edges. These shrubs will require occasional cutting to keep the ride open. Cut the centre of the ride (3m wide) regularly each year to produce a short grassy area, and encourage patches of taller plants to grow alongside it by cutting these every two or three years (preferably never all in any one year). This pattern (a wide V-shape) provides the right conditions for many different species of plants, insects and birds.

- **Water within the wood.** Given the right circumstances it is worth incorporating streams or ponds within your wood. However, it is important to ensure that they will not be heavily shaded when the trees grow. Leave a margin of at least 10m unplanted on one bank, preferably the south one. In areas where turtle doves occur, have some dense thorny scrub close to the pond, as this encourages nesting.

- **Plant a hedge around the wood.** Surround your wood with a good dense hedge to keep the woodland warmer in winter by serving as a windbreak; and to provide nest-sites for some woodland-edge birds such as a long-tailed tit and whitethroat. Hedges also act as a good buffer against roads, housing or arable land. Where possible, look at how the new woodland can connect to other local habitats. A new hedge or strip of rough grass to create a wildlife corridor will help make a better landscape for wildlife.

- **Nest boxes and dead wood.** Bats, some solitary bees and tits nest in tree cavities, which may not be available in a new wood. Nest boxes for birds and bees and bat boxes can encourage these species in a new woodland. A few log piles will also create a haven for invertebrates, reptiles and amphibians and add to the wildlife value of the woodland.

- **Vary the density at which trees are planted.** Wide spacings are better for nature conservation as they allow room for natural colonisation of other shrubs and wildflowers and encourage a more varied woodland. Some woodland planting grants specify the approximate density of trees per hectare. However, you might wish to vary the spacings between trees to allow room for more closely planted shrubs and bushes.

- **Try to avoid planting in straight lines.** This will create a more varied and natural woodland.

- **Plant individual species in clumps or blocks.** In the past, forestry advice was to plant each species in groups of 10 to 50 trees to simplify management and the felling of the crop as it matured. Where timber production is a not priority, a wilder, more natural wood can be created by mixing species a little more and following the advice above regarding planting the edges of rides and glades with shrubs.

Tree planting, tree guards, and growing your own trees from seed

Information on how to store young trees before planting and how to plant them is available from both the Woodland Trust and The Conservation Volunteers (TCV) – check out the guides on their websites: **How to Plant Trees - Plant Trees - Woodland Trust** or **How to plant your trees | TCV**.

The Woodland Trust also has excellent information on protecting and caring for young trees in the first few years – including how to make you own tree guards out of recycled materials. **How to Care for Your Trees - Plant Trees - Woodland Trust**.

If you want to grow trees from locally collected seed, a booklet full of good tips can be downloaded from **How To Grow Trees | A Complete Guide From TCV**.

Mycorrhizal inoculation

The roots of all trees have a symbiotic (mutually beneficial) relationship with fungi. There is evidence that where trees have access to their specific fungi, they survive planting better, grow stronger and are more resistant to stress and disease.

Mycorrrhiza are the long threads of the fungi that live in the soil and mycorrhizal inoculation involves deliberately introducing beneficial soil fungi directly to the roots and to the surrounding soil when planting native trees, woodlands or hedges.

A number of companies provide both the fungi and advice, but planting close to existing woodlands and hedges will allow the fungi to spread into the new woodland naturally and some ecologists are concerned about the spread of non-local fungi.

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Designing for future management

- **Design to avoid the need for clear-felling.** Clear-felling is where a woodland or a large portion of it is all cut in one year, which can be catastrophic for some wild species. If timber production is a major aim of your new wood, consider a design that will avoid the need to clear-fell in the future, by planting a range of species that will mature at different times. Adopt a continuous cover approach to woodland management.

- **Pruning, thinning and ring-barking.** Pruning means removing branches from a tree, usually lower ones and is often used in forestry management to improve timber quality. If you need to prune trees – to let in more light, reduce competition between trees growing next to each other, or to allow access – do so in winter.

  Thinning involves removing trees in the woodland and is usually carried out to give stronger trees more room to grow. If you want to harvest some of the timber in the wood without clear felling, then selective thinning is a good way to do it. Again, it is best to carry out the work in winter and certainly outside the bird nesting season. Thinning can also help create some structural variety in the wood and allow light to the ground.

  Ring-barking trees means cutting them all the way around so that they die but remain standing. It can be a good alternative to thinning where the tree canopy has become very tall and dark. It also creates wonderful habitat for wildlife, encouraging invertebrates, bats and woodpeckers.

- **Coppicing and pollarding.** In the days when woods were a vital source of timber or even fodder for livestock, coppicing was a way of ensuring a ready supply, especially of hazel and sweet chestnut. Coppicing involves cutting trees to ground level and allowing them to re-grow. Frequently this requires that the cut stump, known as the 'stool', is protected from browsing by deer.

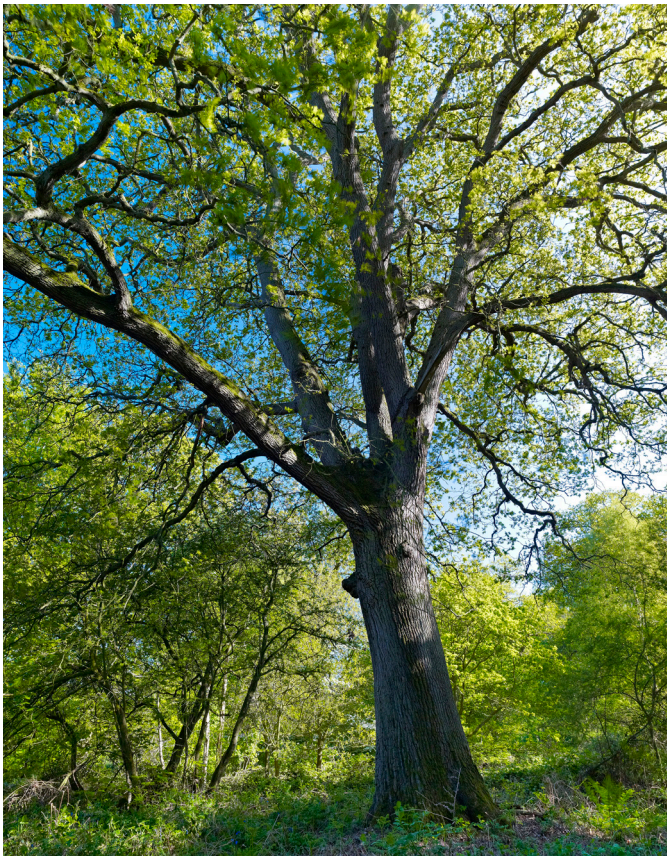
  Coppicing areas within a woodland in rotation can create sunny conditions for a few years, encouraging wildflowers such as bluebells and yellow archangel. In new woods, these flowers can be hard to establish, but coppicing trees after 10-12 years will help provide variety in the structure of the wood and a habitat for birds such as nightingale.

  Information on how to coppice, its history and ways of protecting the stumps from deer browsing is available from **Coppicing - TCV Practical Conservation Handbooks**.

Pollarding is coppicing above head height (usually around 2m) to produce small timber well out of the reach of grazing cattle or deer. Old pollards have a distinctive look, with thick trunks and smaller branches above. On the edge of old woods these were sometimes created as boundary markers. The trees are also wonderful for wildlife, as they are full of flaking bark and crevices. Re-pollarding old trees is a skilled job, but creating new pollards on the edge of young woodlands will mean that we have gnarled and wildlife-rich veteran trees in the future.

Further advice and contacts:

- Forestry Commission
- Farming and Wildlife Advisory Group (FWAG)
- Norfolk County Council (NCC)
- Norfolk Biodiversity Information Service (NBIS)
- Norfolk Wildlife Trust (NWT)
- The Woodland Trust



Green Recovery Challenge Fund

Department for Environment Food & Rural Affairs

The National Lottery Heritage Fund

Environment Agency

NATURAL ENGLAND