

Woodland creation for carbon capture and biodiversity.

Tree planting is an important tool to help mitigate the impacts of climate change and where tree planting is undertaken sensitively it can also provide important wildlife habitat. Ecologically functional woodlands are complex ecosystems that have evolved over long periods of time and they are difficult, but not impossible, to replicate. Creating the conditions for wildlife to thrive requires careful planning and long-term habitat management. There are a number of important points to consider to ensure that woodland habitat creation is also beneficial to wildlife, these include:

- Professional advice¹ should always be sought when creating new habitat, particularly when designing the layout, position, planting density and composition of new woodland and how to use local woodlands as a 'reference'².
- A botanical survey should be carried out prior to any planting to avoid the loss of important habitats. It is vitally important that tree planting should not occur on priority habitats or habitats of existing high wildlife value.
- As a general rule avoid tree planting that would result in heavy shading of still water-courses including ditches and ponds. Heavy shading prevents marginal and aquatic vegetation flourishing with possible knock-on effects for species such as dragonflies, amphibians and water voles. Up to 25% shading is usually acceptable to help create a habitat mosaic, although professional advice should always be sought.
- Avoid creating woodland/plantations near areas used by breeding wading birds. Trees can provide perches or nest sites for predators which will deter ground-nesting birds from nesting nearby.
- Planting woodland corridors to connect areas of existing woodland helps to create important habitat links for the dispersal of species. Natural regeneration by colonisation is generally preferable than tree planting as it allows valuable scrubby habitats to develop into woodland over time.
- Planting woodland or allowing natural regeneration adjacent or proximal to existing woodland should be prioritised as this provides a buffer to sensitive habitats. Buffering helps protect existing woodland from external influences and sources of pollution (including light pollution and ground water pollution) as well as helping to reduce disturbance.
- New plantations that are isolated from existing woodland are unlikely to achieve a high biodiversity value due to slow colonisation by woodland species. Ancient woodland indicator species may never colonise isolated woodlands.
- It is recommended that trees and shrubs should be sourced from the Forestry Commission seed zone, from seed collected from local stands or from the local seed zone (collections

¹*Realising the wildlife potential of new native woodland*. Blakesley, D, Buckley, GP and Fitzgerald JD. 2013. East Malling Research, East Malling.

<https://www.gov.uk/guidance/create-woodland-overview>

<https://www.forestresearch.gov.uk/research/archive-creating-new-native-woodlands/>

²Use local, native woodlands growing on similar soils, and ground conditions, to that of the woodland creation site as a proxy for what might be a suitable woodland community.

should be made under the Voluntary Scheme for Certification of Native Trees and Shrubs, endorsed by the Forestry Commission).

- Well-designed woodland should contain up to 25% shrub species.
- Woodlands over 2 hectares in size should incorporate glades and rides, which can be up to 40% open space. It is not recommended that small woodlands (less than 2 hectares) incorporate large glades or rides.
- For maximum benefit to biodiversity rides should be east-west oriented (so that sunlight is maximised) and at least 30 metres wide to avoid over-shading when the canopy closes.
- Spacing of trees should be varied throughout with a maximum planting density of 1 tree every 2 metres. It is recommended that some areas are planted at very low density (1 tree every 6 metres) to encourage natural succession. In varying planting densities throughout the site, trees will grow at differing rates helping to introduce some structural diversity to the developing woodland.
- The edges of woodland are often the most valuable for wildlife. Take this into account when creating new woodlands by including shrub species, planted irregularly, along the boundary of the site so as to create a soft 'ecotone' between the woodland and the neighbouring field. Suitable species may include; crab apple, hazel, hawthorn and holly. Such species, only flower and fruit in areas that receive high levels of sunlight, which is often along woodland boundary.
- Ideally tree planting should be undertaken on undisturbed soils. Soil structure is vitally important for woodland development. Areas that have been disrupted (for example deep ploughed ex-arable soils) may never develop into ecologically functional woodlands.
- The nutrient status of the soil is critical to woodland development. Land which has had high inputs of fertilisers is unlikely to develop into ecologically functional woodland.
- New plantation woodland will require long-term on-going management such as thinning, weed control and invasive species control. Mechanisms should be in place to secure the necessary management.