

## Woodland in the Kent Downs landscape

Chalk grassland springs to mind when most people think of the Kent Downs AONB, yet woodlands make just as important a contribution to the landscape. Woodlands are in fact one of the most dominant landscape features covering around 20% of the AONB. Almost 70% of the woods in the AONB are ancient, the second highest concentration in the AONBs in England and Wales, with indicative species such as the wood anemone and dog's mercury present.

Woodlands are an important part of the landscape and cultural heritage of the AONB. They form an important habitat for wildlife such as mammals (bats and dormice), birds (nightingales and woodpeckers) and butterflies to name a few.

The continuing existence and management of woodlands in the AONB is dependent on how they are used and valued. Whether it is for nature conservation, timber production or recreational pursuits such as shooting or walking, woodlands have a great importance in the Downs. Positive management ensures that woodlands thrive and delivers wide benefits to the local landscape and people.

Managed woodlands may support a greater variety of wildlife than unmanaged woodlands. Old-growth woodland, however, supports species found in managed woodlands, and is a valuable habitat in its own right. Not all woodlands require a diverse range of habitats to be of conservation value, as some may have a very specific biodiversity interest.

Woodlands are constantly changing, shaped by both their own management, and that of neighbouring land. In addition soil type, aspect and local climate variations have a distinct effect on the appearance of these woodlands. Consequently, how you care and maintain for your woodland will also differ. This guide will help you understand your woodland and how best to manage it.



Woodland on the Downs

## Types of woodland found in the Kent Downs

### Coppice



Trees which are cut close to ground level on a rotation that can be anything from seven to twenty years. This encourages trees to grow with multiple stems from what is known as the 'stool'. Historically, the cut stems were used to make products for fencing, hurdle making and hedging. Typical species used include hazel and sweet chestnut though ash is also often used. Coppicing prolongs the life of a tree and provides an excellent habitat for wildlife.

### Coppice-with-standards



A variation on the standard coppice woodland. Scattered single-stemmed trees (or 'standards') such as oak and ash are allowed to grow to maturity. These are managed on a much longer rotation (fifty years or more) and create woodlands with a greater feeling of age and structure.

### High Forest – mature woodland



Often described as a closed-canopy woodland. Generally, many single-stemmed trees have grown tall, intercepting much of the light and preventing it from reaching the woodland floor. This creates a shady woodland with fewer smaller 'understorey' shrubs creating a more open woodland at ground level. Most are a result of a lack of management, but some are managed to provide a crop of timber trees. Not as common as in other parts of the country, although many formerly coppice woodlands are reverting to high forest through lack of management.

### Wood pasture



A legacy of medieval times and formally used for the purposes of grazing cattle as well as retaining deer. Often surrounded by substantial earth embankments and possessing very old trees and pollards (broad leaved trees cut 1m to 3m above the ground and allowed to resprout like coppice). nb large embankments are not always a sign of wood pasture. These trees are spaced widely, and the widespread grazing results in little understorey (low-level shrubs) establishing itself. The result is a very open and light woodland environment.

### Shaws

Effectively narrow woodland strips of mature trees planted along some field margins. They contribute to a feeling of a big landscape of open fields and long shaws, often substituting for hedgerows.

### Plantation



An artificially forested area established by planting or direct seeding. These are normally planted to produce a crop and often consist of non-native or exotic species (normally evergreen).

Trees are normally planted in rows, are of one species with little or no undergrowth.

Veteran trees and deadwood are very valuable in a woodland and should be retained where feasible.

For more advice contact your local Countryside Management Project.

## Caring for and maintaining your woodland

### Why manage woodlands?

Woods have a big impact on the landscape of the Downs. Woodlands are equally important for the people that live and work in and around them and to wildlife they support. Managed woodlands are capable of supporting a much greater variety of wildlife than those left unmanaged, particularly where management such as coppicing has suddenly stopped. The Kent Downs has a high percentage of ancient woodland which is an irreplaceable resource, once lost, can never be recovered.

### Making management decisions about your woodland

What factors should I consider when deciding management?

Woodlands are valuable for many reasons; their timber source, opportunities for quiet recreation, bird watching, shooting and for wildlife.

Within the AONB, conserving the landscape value and special wildlife features of your woodland should always be a high priority and can usually be happily combined with other management objectives. There is great diversity of wildlife habitats found in woodlands (especially ancient) and particularly in larger woods. In view of this, woodlands need to be managed on an individual basis, even within the same wood the management can be different. For this reason, woods are often broken down into compartments based on their types, for example coppice, or composition, for example beech woodland.

Cost is often the overriding decision factor, grants are available to help with woodland management (see Contacts). If timber within your woodland has commercial value, this will often determine what sort of management is most appropriate.



### Planning and managing your woodland:

- Assess your area for its conservation and commercial value and consider as many options as possible.
- Draw up a management plan obtaining professional advice where needed.
- Monitor changes in the area, good and bad, and record them for future reference. You can get expert help to monitor the wildlife in your woodland (Kent Wildlife Trust, CMPs).
- Be prepared to change and adapt your plans as necessary.

For specific recommendations, particularly woods in sensitive areas, it is recommended that professional advice should be sought (see Contacts).



### Looking back in time for clues

How a woodland was managed in the past greatly influences its present landscape and wildlife value. Active coppicing and wood-pasture were previously much more common than they are today. Wildlife such as butterflies, wildflowers or beetles have become adapted to the specialist habitats associated with these ways. They can find it difficult to adapt and survive where these practises have been stopped.

A good starting point is to consider restoring the former management practices. Clues can be found quite easily, for instance with ageing multi-stemmed coppice stools, or old pollarded trees in former wood-pasture surrounded by young woodland. However, if in doubt, seek advice from your local CMP. In most cases, restoring previous management in some form is usually the most appropriate choice.

### An important note about Sites of Special Scientific Interest (SSSIs)

If your woodland forms part of a Site of Special Scientific Interest, you will have been notified by Natural England (formerly English Nature). Owners of SSSIs must give Natural England written notice before they begin any operations listed in the notification as likely to damage the special interest. If in doubt contact Natural England (see Contacts).



Coppice



## Managing your woodland for conservation

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The most basic principle behind good woodland management is there should be a variety of habitats, with a patchwork effect of different heights and structure. This results in an increase in the variety of woodland wildlife as different habitats are made available. Some forms of management such as large-scale coppicing can result in great change within woodlands, and this needs careful planning to improve rather than detract from its appearance.

You should try to:

- Ensure the coppicing blends into the landscape with a mix of shape and scale with soft woodland edges.
- Phase the felling to minimise the adverse visual effects of a sudden loss of mature woodland.
- Retain groups of irregularly sized and shaped trees to keep a natural appearance avoiding creating long belts.
- Use felling to re-open views, show significant landscape features or to break up intrusive straight lines.



Coppice



## Woodland coppicing explained

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### What is coppicing?

Most native broad-leaved species of trees found in Britain are capable of being coppiced. The practice, used widely to manage woodlands and hedges in the past, uses the ability of these trees to readily resprout from cut stumps or stools. This allows a crop of timber to be harvested from the woodland on a regular rotation of around 12 to 15 years, although in some places this may extend to 25-30 years. Species most often coppiced in Kent include hazel, sweet chestnut and hornbeam. However, ancient mature stools of ash and beech are often found.

The initial appearance of a coppiced woodland can be quite severe, particularly where large tracts are cut. Care should therefore be taken where the wood is highly visible in the landscape.

Depending on the species, coppice stools will regenerate quickly but depend on good light conditions. Coppicing maybe undertaken if tall canopy trees are being left in place, but light reaching the woodland floor is essential for re-growth. The minimum area of coppice should be a approximately one acre.

### Do I need to get permission to fell trees?

There are several organisations that you may need to contact. A felling licence may be needed from the Forestry Commission. In any calendar quarter you can fell up to 5 cubic metres of timber on your property without a licence as long as no more than 2 cubic metres are sold. Contact the Forestry Commission for more details.

- If your woodland is a SSSI, you should contact Natural England for more information.
- Some woodlands may also be subject to a Tree Preservation Order (TPO), check with your local authority.
- Yew woodlands should be managed specially in a non-interventionist way. Check with your local CMP for more information.



Recently coppiced woodland



Young coppice

## Assessing your woodland

Firstly look at your woodland to see how it has been managed and how it fits into the landscape. Consider what will be lost and gained by altering the management.

The table below should help you assess your wood and provide you with a range of management options

| Factor                | Is the woodland...?                    | What effect does it have on the landscape?  | Management considerations  |
|-----------------------|--|---|--|
| <b>Size and shape</b> | Small<br>(less than 10ha)              | Small woodlands in an open landscape have a reduced effect on the landscape. However, remaining small woodlands play an important part in preventing an open plain appearance.<br><br>Care should be taken that small woodlands do not become isolated and fragmented.  | Due to the size the management can be an easily decided as generally only one type is required (with lower costs).<br><br>Consider treating groups of small woods together to achieve economies of scale, or link sites by woodland creation where small woods are inappropriate to the LCA. |
|                       | Medium to large                        | Large woodlands can be dominant and important landscape features. Introduction of management such as large-scale coppicing, can have a significant effect on the landscape.<br><br>Long straight edges of large woodlands that disregard slopes can look unnatural and can be softened by sympathetic management. | Management options are more complicated and it may be wise to gain professional advice (see Contacts).<br><br>Different management types are likely to be needed in different areas of the wood.   |
| <b>Soil type</b>      | Acid                                   | Acid soils tend to be dominated by fewer species (often sweet chestnut coppice), but can suffer from dominant invasive and unwanted species such as rhododendron.   | May often be simply a case of reinstating a coppice cycle. In addition, control of invasive species often requires professional advice to be effective.  |
|                       | Neutral or alkaline on the chalk soils | Alkaline soils have a greater diversity of species associated with them.  | Coppicing is often the dominant management type, and encourages a strong ground flora and distinctive impenetrable woodland.   |
|                       | Wet, well-drained or dry               | Wet sites may have more plant species than dry ones.  | Wet soils more easily damaged by heavy machinery. Vegetation may be damaged by drainage.<br><br>Dry soils may be prone to erosion.   |
| <b>Connections</b>    | Connected to other woodlands           | Maintains an enclosed landscape feel.   | Management should concentrate on maintaining the current range of woodland habitats, and ensuring connections are not eroded.  |

| Factor                                      | Is the woodland...?                         | What effect does it have on the landscape?   | Management considerations  |
|---|---|--|--|
| <b>Connections</b>                          | Isolated from other woodlands.              | Creates a characteristic open landscape where woods are large.<br>Where woods are small can look lost, and may also result in a loss of biodiversity over time.  | Provide a range of habitats within the wood, if large enough. Expand wood where possible to increase landscape value and where appropriate, consider hedge planting to connect to other nearby woodlands.  |
| <b>Access for recreation</b>                | Accessible and heavily used for recreation. | Consideration has to be given to safety for users, often resulting in widening of paths. Some very well-used woods may become suburbanised.<br>Woodland wildlife can suffer from damage (eg trampling of ground flora, disturbance of breeding birds, vandalism to old trees etc). | Make use of information boards to explain management activities if access or landscape is affected.<br>Re-routing footpaths or zoning access may be necessary to protect sensitive wildlife areas and landscape erosion. If this is being considered, PROW legislation must be followed. |
| <b>Access for recreation and management</b> | Difficult to access                         | If habitat management cannot be carried out due to poor access, wildlife and landscape features may be lost. There may be an initial greater effect on the landscape, as more likely that a lot of management will need to be undertaken at one time to compensate.                | May be difficult and expensive if topography restricts access.   |
| <b>Grazing and browsing</b>                 | Heavily grazed                              | Woodland less able to regenerate naturally until grazing pressure (deer, rabbits, sheep or cattle) removed.  | New tree planting, natural regeneration will need to be protected by tree shelters or pasture sites.<br>Reduce grazing pressure to alleviate pressure on ground flora and fauna.   |
|   | Lightly grazed                              | Grazing can be beneficial to certain wildlife groups e.g. lichens and mosses, and is vital to maintain wood-pasture sites.   |  |
| <b>Structure and habitat diversity</b>      | Structurally diverse                        | Varied structure is often most beneficial for wildlife, including a tree canopy with a mixed age structure, shrub layer, ground flora, dead wood of various types and sizes with a mixture of other habitats e.g. rocky outcrops, grassy rides, pools, streams and marshy areas.   | Past management will have influenced the woodland structure to a large degree.<br>Maintain current diverse structure in particular preserving special features such as veteran trees and damp flushes.   |
|   | Structurally impoverished                   | Woods with trees of a similar age, with little shrub layer, and a lack of dead wood etc. may be important for individual species but, generally, species diversity will be low.  | Improving the variety of structural elements can help landscape and wildlife e.g. encouraging a variety of different tree ages, allowing a shrub layer to develop, leaving dead wood, and creating or managing permanent open space.   |



## Deciding on management for your woodland

### 1. Managed high-forest

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#### Recommended management

- Fell trees within the woodland to encourage new growth and a variety of different aged trees.
- Allow trees to regenerate naturally where possible rather than planting.
- Leave some trees (at least 4 per ha) to grow until they die naturally.
- Open up clearings by felling to increase variety and ground flora.
- Manage groups of small woods together.

#### Inappropriate management

- Do not undertake operations that may damage the existing natural character of the woodland. (e.g. disturbing breeding birds, inappropriate drainage, planting non-native species, excessive use of herbicide, clearing dead wood etc).

### 2. Coppice or coppice-with-standards

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#### Recommended in:

- Woods with a history of coppicing, and that were cut in at least the last 50 years.
- Woods with south facing slopes which are more likely to provide the warm microclimate needed by "coppice" species such as fritillary butterflies.
- Likely to produce a diverse ground flora with a wide variety of trees and shrubs.
- Diversity is likely to be best maintained by restoring coppice, rather than by allowing high forest to develop.

#### Not recommended in woods:

- With lichens and mosses that may not tolerate the sudden changes in light and humidity associated with coppicing. Seek specialist advice if you are unsure.
- Suffering long term neglect (ie for more than 50 years) and have developed a mature high forest structure with much dead wood and many veteran trees.
- Where grazing and browsing cannot be controlled to an appropriate level and where adequate fencing is not practical (deer will graze on new shoots from coppice stools).

### 3. Wood-pasture

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#### Recommended in:

- Sites with a history of wood-pasture that retain a scattering of veteran trees.
- Sites close to or adjoining existing wood pasture sites.
- Sites where use of grazing stock is practical.
- Sites with ground vegetation normally found in open ground (heath/grassland etc).

#### Not recommended in:

- Former wood-pasture sites that are now important for wildlife species that would not benefit from wood-pasture treatment.
- In such sites, veteran tree management (eg pollarding) may still be desirable.

## 4. Restoration of woodland on plantation sites

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### Recommended in woods:

- Replanted with conifers.
- That have only recently been replanted (in the last 30 – 50 years).
- Where some former broadleaved trees and/or ground flora survives within the plantation.
- Where open rides within the plantation are rich in plant species normally found in broad-leaved woodlands.
- Where professional advice is available.

### Not recommended in:

- Well-established plantations.
- Plantations that have become established as important landscape features in their own right.

## 5. Minimum intervention (absence of management)

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### Recommended in woods with:

- A large area – more than 100 ha. Shaws may be a prime candidate on a smaller scale and can link in with larger woodland blocks.
- A compact shape.
- Little treatment or unnatural disturbance in the last 50 years.
- Few introduced species and no highly invasive ones (plants and animals).
- No major external negative factors, eg nearby source of air or water pollution.
- No rare or unusual species that depend on management for their survival.
- Stable ownership.

### Not recommended in woods with:

- Few or none of the adjacent characteristics.



### **How do I manage rides and glades?**

Rides and other grassy areas, glades, and roadside verges give a mix of habitats, attractive to a wide range of wildlife; mammals, reptiles, invertebrates and birds. Take care not to unwittingly allow important areas of open habitat to be lost to encroaching trees or insensitive woodland operations. As a general principle the best rides are winding rather than straight, and have shrubby edges. This maximises their shelter value both within the ride, and inside the wood. Where existing rides are too straight, 'scalloping' of edges by selective tree cutting and coppicing can provide a much enhanced habitat. Diversity can also be enhanced by maintaining a narrow, preferably winding, short mown track in the centre, and allowing herbs and small shrubs to grow up at the edges.

Grass rides within your woodland are often best maintained by mowing portions, e.g. strips, in alternate years, preferably in late summer. Any shrubby strip between grass and forest should be coppiced at intervals of 3-5 years, aiming to cut only a proportion of the shrub strip each year. Generally rides should be at least 8 metre wide with a range of vegetation heights. East to west rides allows maximum sunlight which is very valuable for wildlife such as bats and butterflies. Many species of wildlife need a variety of habitats for their lifecycle which the dense woodland, scrub and grassy areas provide.

Glades can be created along rides or woodland edges. Generally the compartment should be at least 1.5 times as wide as the height of the adjacent trees canopy to allow enough light in (or a minimum of 22-25 metres from canopy edge to canopy edge). Glades can either be coppiced on rotation or allowed to naturally develop with new glades created elsewhere in the wood. Well sheltered woodland rides make a great contribution to pheasant holding capacity, as well as providing an extra habitat for a wide range of other wildlife (see below).



Woodland ride

## Planting new woodlands

While woodland planting is generally considered to be a positive undertaking, natural woodland regeneration is preferable. However, in the Kent Downs AONB some care has to be taken. You may have real and positive reasons for woodland planting, but you must be sure it is suitable for your Landscape Character Area. Always ask yourself first of all:

### **Is a woodland appropriate here?**

In some Landscape Character Areas open landscapes are important, and new woodland planting can look out of place and sit uncomfortably with the surrounding countryside. The woodland assessment chart shows where these open areas are important.

### **How do I select the species for my new woodland?**

Whether you are planting a new woodland or filling in gaps, ensuring you select the right species is vital. This not only maintains the landscape character but also increases hedge survival (saving money by not having to buy replacements) but also maximises opportunity for wildlife.

The guide below combined with the Landscape Design Handbook (available to download from [www.kentdowns.org.uk](http://www.kentdowns.org.uk)) will help you to choose the right species. In summary, woodland planting should have only 10-15% high forest trees such as oak/ash with the remainder made up of understorey shrubs (e.g. hazel and dogwood) or lower storey trees (e.g. hawthorn or hornbeam). Planting in a random mix based on a 1m to 3-metre grid with a range of species is recommended.

Contact your local CMP for further advice.





## Types of woodland to establish in the Kent Downs

| National Vegetation Classification | Wet woodland. Alluvial soils pH 4-7 | Lowland mixed broadleaved with dog's mercury. pH 4-7 | Lowland mixed BL with blubell. Lime-poor superficial deposits like clay with flints. pH <7 | Beech-ash with dog's mercury. Valley sides only/shallow soils over chalk. pH >7 | Beech-oak with bramble. Lime-poor superficial deposits like clay with flints and plateau drift. pH 4-7 | Beech-oak with wavy hair-grass. Superficial deposits – sands and gravels. pH<4 |                   | Wet woodland. Alluvial soils pH 4-7 | Lowland mixed broadleaved with dog's mercury. pH 4-7 | Lowland mixed BL with blubell. Lime-poor superficial deposits like clay with flints. pH <7 | Beech-ash with dog's mercury. Valley sides only/shallow soils over chalk. pH >7 | Beech-oak with bramble. Lime-poor superficial deposits like clay with flints and plateau drift. pH 4-7 | Beech-oak with wavy hair-grass. Superficial deposits – sands and gravels. pH<4 |
|------------------------------------|-------------------------------------|--|--|---|--|--|-------------------|-------------------------------------|--|--|---|--|--|
| TREES                              | W6                                  | W8   | W10  | W12   | W14  | W15  | SHRUBS            | W6                                  | W8   | W10  | W12   | W14  | W15  |
| Alder                              | ●                                   |  |  |   |  |  | Blackthorn        | ●                                   | ●  | ●  |   |  |  |
| Ash                                | ●                                   | ●  | ●  | ●   | ●  |  | Alder buckthorn   | ●                                   |  |  |   |  | ●  |
| Aspen                              |                                     | ●  |  |   |  |  | Purging buckthorn | ●                                   | ●  |  |   |  |  |
| Beech                              |                                     |  | ●  | ●   | ●  | ●  | Dogwood           |                                     | ●  |  | ●   |  |  |
| Wild cherry                        |                                     | ●  |  |   | ●  |  | Guelder rose      |                                     | ●  |  |   |  |  |
| Crab apple                         |                                     | ●  |  |   |  |  | Hawthorn (common) | ●                                   | ●  | ●  | ●   | ●  |  |
| Field maple                        |                                     | ●  | ●  | ●   | ●  | ●  | Hazel             |                                     | ●  | ●  | ●   | ●  |  |
| Holly                              | ●                                   | ●  | ●  | ●   | ●  | ●  | Wild privet       |                                     | ●  |  | ●   | ●  |  |
| Hornbeam                           |                                     | ●  | ●  | ●   | ●  |  | Spindle           |                                     | ●  |  | ●   |  |  |
| Common oak                         | ●                                   | ●  | ●  | ●   | ●  | ●  | Sallow (grey)     | ●                                   | ●  |  | ●   |  |  |
| Sessile oak                        |                                     | ●  | ●  |   | ●  | ●  | Wayfaring tree    |                                     | ●  | ●  | ●   |  |  |
| Rowan                              |                                     | ●  | ●  |   | ●  | ●  | Juniper           |                                     |  |  | ●   |  |  |
| Whitebeam (common)*                |                                     | ●  |  | ●   |  |  | Osier willow      | ●                                   |  |  |   |  |  |
| Crack willow                       | ●                                   |  |  |   |  |  |                   |                                     |  |  |   |  |  |
| Goat willow                        | ●                                   | ●  |  | ●   | ●  |  |                   |                                     |  |  |   |  |  |
| Yew                                |                                     |  |  | ●   | ●  |  |                   |                                     |  |  |   |  |  |

● Major species   ● Minor species

When choosing which tree species to plant, a woodland will typically be made up of 50% of its area growing the major tree species, 20% of the area growing the minor tree species, 10% woody shrubs and up to 20% open ground or wide spaced trees. As an example a beech-ash woodland with dog's mercury (W12) may have the following species composition:

**Major tree species** – 20% beech, 30% ash.

**Minor tree species** – 4% common oak, 4% field maple, 4% yew, 4% hornbeam, 2% whitebeam, 2% holly.

\* Use only local provenance stock.

**Shrub species** – 10% consisting of hawthorn, hazel, dogwood, guelder rose, spindle, wayfaring tree, and spindle.

**Open ground** – 20%

Silver birch, downy birch, elder, broom, and gorse have not been included in the planting list, even though they form a component of some of the woodland types, as they are likely to establish themselves easily in the woodlands without planting.

The above table is based on Forestry Commission South East England Design Brief Guidance.

## Considerations when planting for landscape and nature conservation

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- A range of habitats within or near the wood, such as open glades, rides and forest edges; streams and ponds; wet places and ponds. An ideal size for isolated woodland is at least 5ha allowing for rides and glades.
- Any valuable existing habitats, for example chalk grassland, which should not be used for woodland creation.
- Linking or extending existing woodlands and take into account any species or features, eg rare plants that may be in neighbouring woodland.
- In the future having an age range of trees and shrubs with different height layers including a stock of old trees and some dead wood for a variety of wildlife. The planting mix will affect the future structure of the wood.

### **Seek professional advice on the siting of new woodlands.**

Planting should be carried out any time during the winter (October to early March), but not during frosty or icy conditions. Providing you match tree species to location and type of soil native broadleaved varieties should not need any form of soil improver. Use of improvers can be detrimental in the long run as they also encourage the establishment of weeds during the critical first few years that can out compete your trees.

Planting density (how far away each tree is from its nearest neighbour) varies not only according to size of tree, but also the type, purpose and structure of the woodland you are trying to create. Traditional planting densities normally involve planting trees around 1.8m (6ft) apart. Trees are often planted closer together than strictly necessary when lower survival rates are anticipated. If you are planting to produce a commercial crop, then specifications may be different and you should seek expert advice.





Whips (60-90cm in height) are the most commonly selected tree type used for planting purposes as they take much more readily than standard trees (275-300cm in height) and are considerably cheaper. Various methods of planting are available, though the easiest and cheapest is usually to slit plant, but does bring with it an increased failure rate compared to the more costly pit planting.

Trees for planting should be of native origin (i.e. grow naturally in this country) and of local provenance (from seed collected in the UK, and ideally from within Kent). This has several advantages including improved growth and a greater chance of survival. Consider the need for tree protection against deer and rabbits (see below).

There are many contractors that can undertake woodland planting. For further information contact your local CMP.

## Woodland maintenance and aftercare

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It is important to look after your wood after planting. In the first few years, this consists of weeding, mowing and spraying to control the growth of weeds until the trees have become firmly established. After this, replacing any trees that have died, thinning out where trees are competing with each other, ride and glade management all become part of your annual management. If tree shelters have been used, it is advisable to remove them from the tree after they have become established.

### Can I use herbicides?

Caring for your new woodland in its early years does need some protection of young trees from competing vegetation. Herbicides are effective and relatively cheap. However where the ground flora is itself of conservation value professional advice should be sought. Dense bracken, bramble or rhododendron may require more extensive herbicide treatment. The use of herbicides on SSSIs may need the approval of Natural England.





Other means of controlling the vegetation around the new trees is the use of plastic, woven polypropylene mats or mulch.

### **Should I use fertilisers?**

Generally, ancient woodlands and sites on which broadleaves might be established do not require the addition of fertiliser to obtain satisfactory tree growth.

### **Should I protect the trees?**

It is likely that you will need to protect your new woodland from the attentions of grazing animals such as mice, voles, rabbits, and deer if you want your trees to survive. The most common methods used include the use of tree shelters (plastic tubes placed over the tree) and fencing to protect against attack by rabbit or deer. Choice is usually dependent on cost, though for large areas under deer or rabbit attack, it is often cheaper to fence these animals out.

### **What about woodlands for game rearing?**

Historically, pheasant shooting has been an important motivation for the planting of new woods and the retention and management of existing ones. It increasingly provides the incentive for some private owners to do habitat management. Much of this management can, if sensitively carried out, benefit both pheasants, other wildlife and the landscape.

The small size of many broadleaved woodlands, and the presence of glades and openings, increase the woodland edge which provides habitat for many animals.

It therefore follows that many of the guidelines for management for wildlife conservation apply to management for game. Neglected woods or outgrown coppice are usually of lesser value, being draughty and inhospitable, for example, pheasants require a tree canopy which is not so dense that ground vegetation is suppressed and sunlight does not warm the ground. They need shelter and warmth, by means of ground cover and perhaps a perimeter hedge. Further advice can be found in



the practical guide 'Woodland and Pheasants' produced by The Game Conservancy Trust in association with the Kent Downs AONB Unit.

The guide highlights conservation and landscape issues in relation to pheasant releasing and the economic benefits, It also encourages the integration of nature conservation, landscape and pheasant management in woodlands in the Kent Downs AONB.

## Pests and diseases in woodland

### Chalara dieback of ash

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Chalara dieback of ash is a serious disease of ash trees caused by a fungus called *Chalara fraxinea* (*C. fraxinea*). The disease causes leaf loss and crown dieback in affected trees, and usually leads to tree death. Several outbreaks of Chalara have been found in Kent.

**For symptoms see:**

[www.forestry.gov.uk/pdf/FCPH-ADD.pdf/\\$FILE/FCPH-ADD.pdf](http://www.forestry.gov.uk/pdf/FCPH-ADD.pdf/$FILE/FCPH-ADD.pdf)

### Ramorum disease

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*Phytophthora ramorum* (*P. ramorum*) has also been recently confirmed in larch trees in Sussex and Surrey. *P. ramorum* can infect more than 150 species of plants and trees. It is particularly serious in Japanese larch trees. Infected larch trees die quickly – *P. ramorum* appears to be able to kill Japanese larch within a single growing season after its presence is first detectable. The generic term ‘ramorum disease’ is used in the UK instead of ‘sudden oak death’.

In terms of management impact the Forestry Commission has usually issues statutory “plant health notices” that require the owners to fell the infected larch trees and others nearby.

**For symptoms see:**

[www.forestry.gov.uk/pdf/PramorumsymptomsguideApril2012.pdf/\\$FILE/PramorumsymptomsguideApril2012.pdf](http://www.forestry.gov.uk/pdf/PramorumsymptomsguideApril2012.pdf/$FILE/PramorumsymptomsguideApril2012.pdf)

### Acute Oak Decline (AOD)

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Acute Oak Decline is a relatively new condition of oak trees in Britain which appears to be on the increase. It affects mature trees (>50 years old) of both native oak species (*Quercus robur*, known as pedunculate or

English oak, and *Quercus petraea*, sessile oak) are affected. AOD has not yet been reported in Kent.

**For symptoms see:**

[www.forestry.gov.uk/FR/INFD-7ULA6W](http://www.forestry.gov.uk/FR/INFD-7ULA6W)

### Sweet Chestnut Blight

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Chestnut blight is a plant disease caused by the ascomycete fungus *Cryphonectria parasitica*. *C. parasitica* was identified in November 2011 as the cause of dieback in European sweet chestnut in Warwickshire, central England. A second outbreak was later found on a smaller site containing about 30 trees on a site in East Sussex. Due to the prevalence of sweet chestnut in the study area the impact of a future outbreak could be significant.

**For symptoms see:**

[www.forestry.gov.uk/pdf/Chestnut\\_blight\\_symptoms\\_2012.pdf/\\$FILE/Chestnut\\_blight\\_symptoms\\_2012.pdf](http://www.forestry.gov.uk/pdf/Chestnut_blight_symptoms_2012.pdf/$FILE/Chestnut_blight_symptoms_2012.pdf)

### Other

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There are a range of other tree pests and diseases that could become important:

- Kent experienced an outbreak of Asian Longhorn Beetle in 2012.
- Red Band Needle blight is a threat to commercial pine woodland.
- *Splanchnonema platani* (Massaria) has been found in London Plane in London.
- Oak Processionary Moth has been found in Bromley.
- There is also bleeding canker in horse chestnut as well as horse chestnut leaf miner.
- There are concerns about emerald ash borer which has yet to be found in England.



## **What does climate change mean for woodland?**

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Our changing climate means increased uncertainty for the future, and hence increased risk. We must plan ahead to help our woods adapt.

### **Species suitability**

Our changing climate is likely to result in some tree species becoming less suited to the areas in which they currently live, and some becoming more suitable. Woodland flora is also likely to suffer. Some non native species may benefit from climate change and could become invasive in the future by out-competing native species. Monitoring and record keeping are essential to follow the impacts of climate change and decide what actions to take.

### **Species diversity**

Planting a variety of species, either in mixtures or in pure stands, can enhance the resilience of forests and woodlands to projected climate change. For productive forests, a broader range of timber species than have typically been planted in the past may therefore warrant consideration. For native woodlands, augmenting the current range of species with others associated with the woodland type will often help meet biodiversity objectives in addition to increasing the resilience of woods.

### **Genetic diversity**

Genetic diversity, in addition to species diversity, is important in the context of climate change. Evidence suggests that most populations of trees in semi-natural woodlands contain high levels of genetic diversity. Linking and expanding native woods using natural regeneration as part of a habitat network, or planting with well-adapted stock, will increase gene flows and strengthen the capacity of tree populations to adapt.