An Taisce West Cork

WOODLANDS FOR WEST CORK!

Guidelines for their Conservation and Management

by Rob Hopkins

This publication is supported by FÁS Community Employment and supported by funding from the European Union.
This publication has received support from the Heritage Council under the 1998 Publication Grant Scheme.

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for An Taisce West Cork
with editorial assistance from Anthony Cohu.

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Foreword

The distinctiveness and character of West Cork's landscape is due in no small part to the presence of its woodland and hedgerow system. There is no doubt however, that this element faces an increasing struggle for survival against modern development pressures. This booklet has been prepared to give landowners who have woodlands and hedgerows in their care, the best advice currently available on how to manage them for their long-term prosperity.

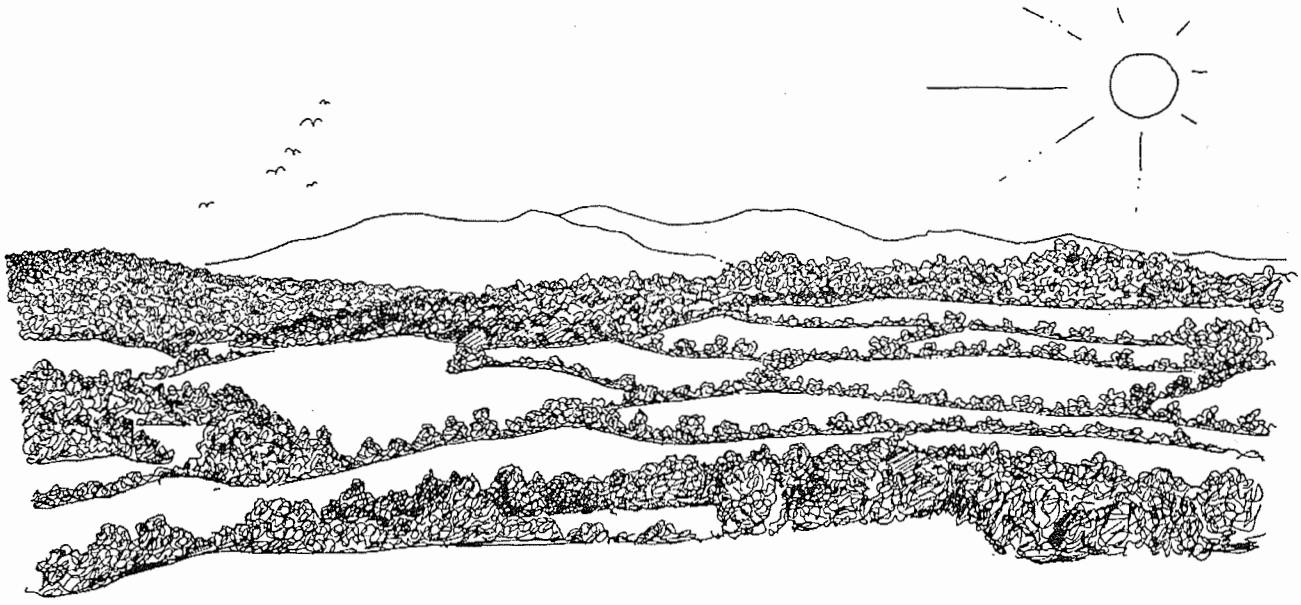
Proper management can achieve several objectives in larger woodlands: *Timber, Nature Conservation, Recreation, Educational Amenity.*

Some of these uses may be in conflict in smaller woodlands, where only limited purposes can be achieved. Nevertheless, the appropriate strategy for each woodland can be found depending on the owner's requirements and the specific nature of the woodland. These guidelines show a range of possibilities, but should the landowner require specific advice and a management plan for a particular woodland, professional expertise should be sought.

The West Cork Woodland Report is a companion publication to these guidelines for those interested in the larger picture, and recommends new policies and incentives for woodland conservation. This booklet recommends the practices necessary to conserve, enhance and increase West Cork's stock of woodlands.

Our deepest thanks to Rob Hopkins for inspired illustration of the issues involved.

Anthony Cohu, Chairman, An Taisce West Cork.



In the Lee valley the woods began at the Kerry-Cork border at Lake Gouganebarra and reached almost to Cork, which supports a tradition that a squirrel could have hopped from bough to bough from Killarney to Cork. The Gouganebarra depression was completely denuded of its timber by the early nineteenth century, though a great deal of oak, birch, alder, holly and other timber survived in the surrounding valleys. An Irish peasant declared of Gouganebarra woods, when a traveller remarked that it was a pity that the hills round the lake were not planted, "Planted Sir, why it wanted no man's trees- it was all wood once. A squirrel could have hopped without touching the ground from oak to oak, and from birch to birch, from Inchigeela all along here and up into the pass of Camineagh and so across the hills into Kerry and until you came into Glen Fisk...A greedy man here called those trees his own, though the saint, even Saint Finn Barry himself, had surely the best right, he cut them all down". The despoiler lost his money and his character, "little better could happen to the chap that would turn to filthy lucre the holy wood of Gouganebarra".

From "The Irish Woods Since Tudor Times-
the Distribution and Exploitation"
by Eileen McCracken.
David & Charles, Newton Abbott. 1971

Setting the picture in West Cork

Despite having one of the most favourable climates for tree growth, Ireland has had, since the 16th century, the lowest level of tree cover in Europe. At that time 17% of the country was wooded, a figure which by the 1930's had fallen to just 0.5%. Since 1949 successive Governments have attempted to reverse this trend, resulting in the current situation where between 6 and 7% of the country is wooded. This figure is deceptive however, as 89% of this consists of coniferous plantations. Although coniferous woods are good for producing fast-growing timber, they offer very little of the wildlife interest or recreational potential of broadleaf woodland.

The recent survey of the woodlands of West Cork undertaken by An Taisce West Cork and detailed in"The West Cork Woodland Report", the companion publication to this booklet, came up with some startling data. It was found that 5,8% of West Cork was wooded, of which just 7.9% (1% of the total area) was broadleaf. It also revealed the fragmented nature of much of the broadleaf woods. Only 13 broadleaf woods larger than 50 acres were found, unlike the coniferous forests which were almost entirely found in large blocks. 59 broadleaf woods with an area of less than 5 acres were identified, highlighting the fragility of West Cork's woodlands, since a small wood which is isolated is also a wood in danger; new species are unable to reach it to colonise it. Many of these smaller woods are in fact dying woods.

The survey has starkly identified the need for action to reverse the decline in such woodlands. This booklet sets out clearly ways of managing woods which will contribute to this. Well managed mixed woodlands bring many benefits to the local community. They can create employment, a wide range of spin-off products, a recreational amenity, an educational resource, as well as contributing to the stabilisation of global warming.

How to use this booklet

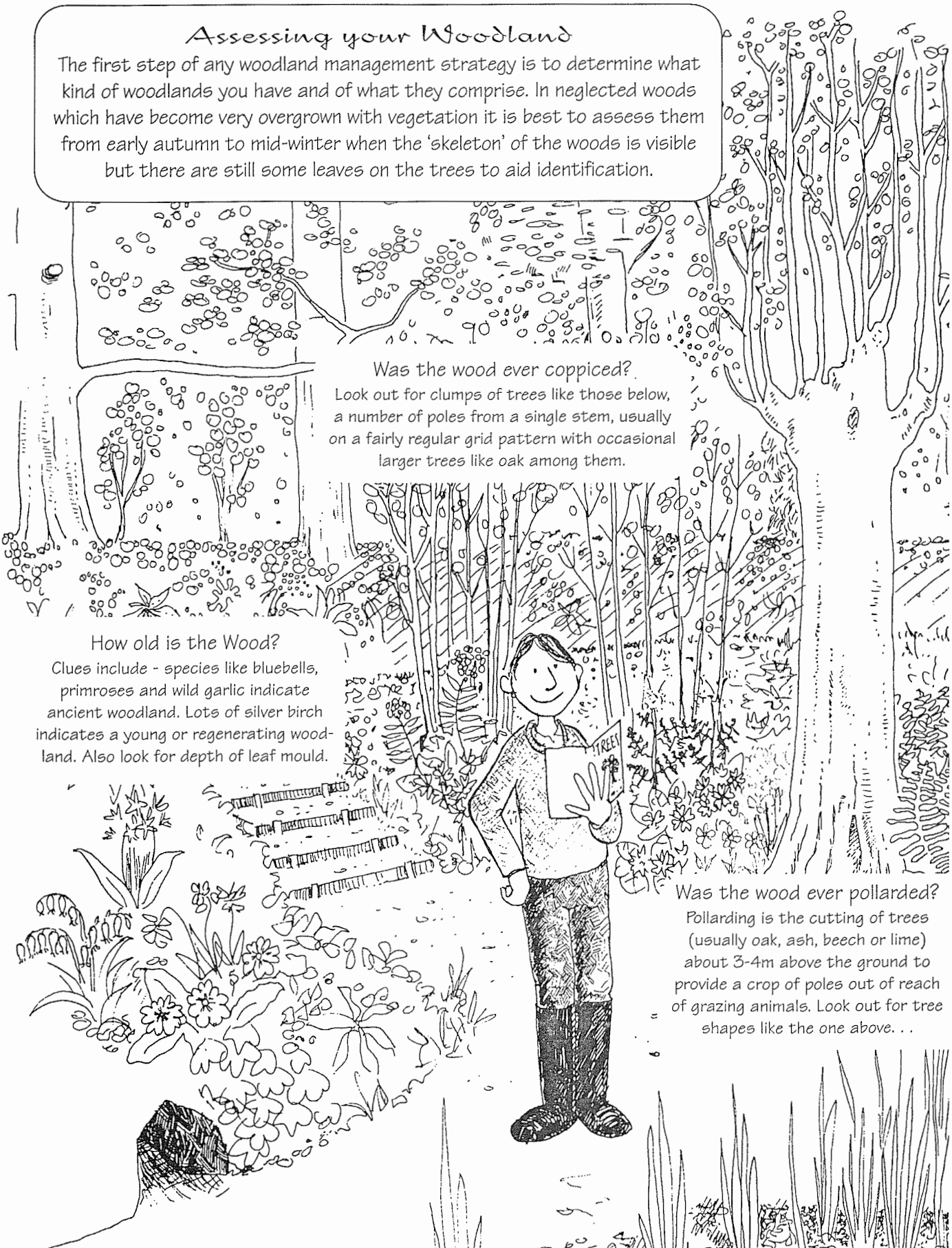
This booklet is designed so as to take the reader through the decision making process required for the successful management of a woodland. It begins by detailing the process of analysing the woodland, what it consists of, what condition it is in and so on. This is then followed by the reasons for managing it, is it primarily for timber, for recreation or for wildlife? Once this is decided on, the owner can proceed with preparing a management plan to detail the work needed to achieve his or her objectives.

In order to successfully manage a woodland there are certain skills and techniques that need to be understood and the next section "Your Woodland Management Toolkit" works through these. The final chapter looks at a range of possible management options and states which of the 'toolkit' skills you'll need for that particular choice. The appendices give information on further reading, sources of grant aid for woodlands and useful contacts.

It is hoped that this layout gives a clear and logical progression to the decision making needed for the successful management of woodlands.

Assessing your Woodland

The first step of any woodland management strategy is to determine what kind of woodlands you have and of what they comprise. In neglected woods which have become very overgrown with vegetation it is best to assess them from early autumn to mid-winter when the 'skeleton' of the woods is visible but there are still some leaves on the trees to aid identification.



Was the wood ever coppiced?

Look out for clumps of trees like those below, a number of poles from a single stem, usually on a fairly regular grid pattern with occasional larger trees like oak among them.

How old is the Wood?

Clues include - species like bluebells, primroses and wild garlic indicate ancient woodland. Lots of silver birch indicates a young or regenerating woodland. Also look for depth of leaf mould.

Was the wood ever pollarded?

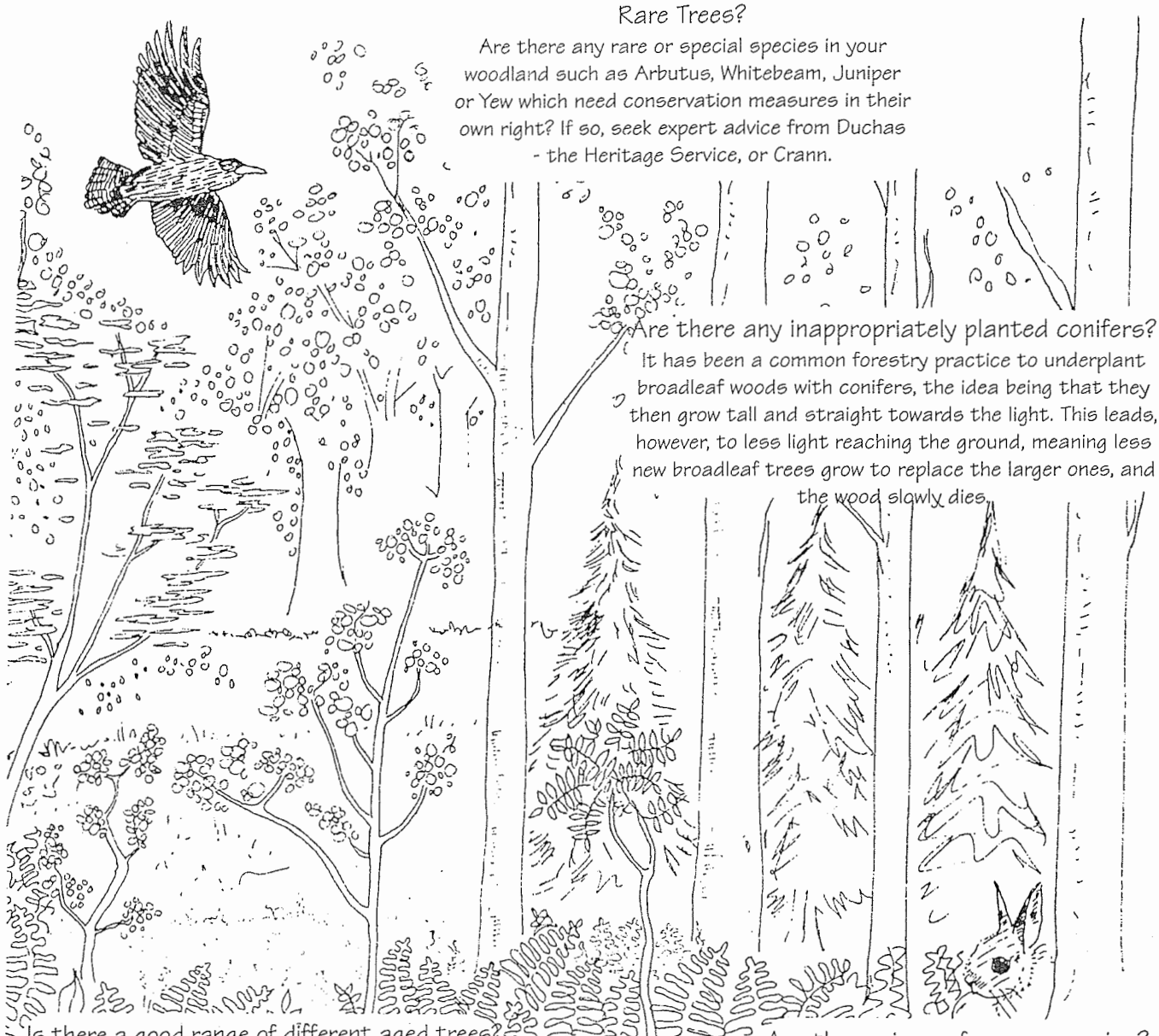
Pollarding is the cutting of trees (usually oak, ash, beech or lime) about 3-4m above the ground to provide a crop of poles out of reach of grazing animals. Look out for tree shapes like the one above. . .

Is there any evidence of wildlife activity?

Any badger setts? Any evidence of otters? What birdlife and different kinds of butterflies and other invertebrates such as caterpillars can you see? The kinds of wildlife present will have a big effect on how you manage the wood.

Rare Trees?

Are there any rare or special species in your woodland such as Arbutus, Whitebeam, Juniper or Yew which need conservation measures in their own right? If so, seek expert advice from Duchas - the Heritage Service, or Crann.



Are there any inappropriately planted conifers?

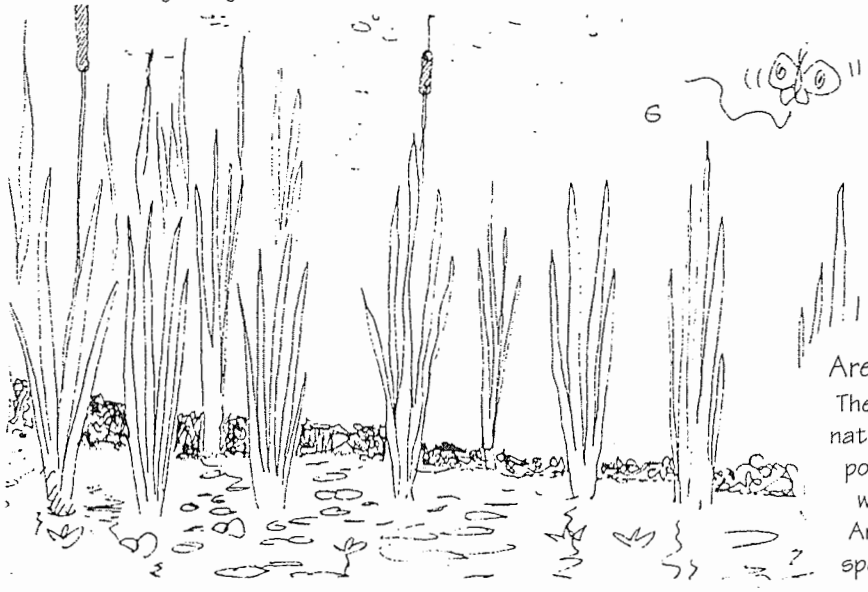
It has been a common forestry practice to underplant broadleaf woods with conifers, the idea being that they then grow tall and straight towards the light. This leads, however, to less light reaching the ground, meaning less new broadleaf trees grow to replace the larger ones, and the wood slowly dies.

Is there a good range of different aged trees?

A woodland without young trees is dying woodland. If there isn't a good age range of trees, look to see why, it could be due to not enough light, excess grazing or some other factor.

Are there signs of excess grazing?

The presence of feral goats, hares, deer, rabbits and other animals can have a damaging effect on young trees and thereby on the wood's ability to regenerate itself. Is the ground badly 'poached' by animal hooves?

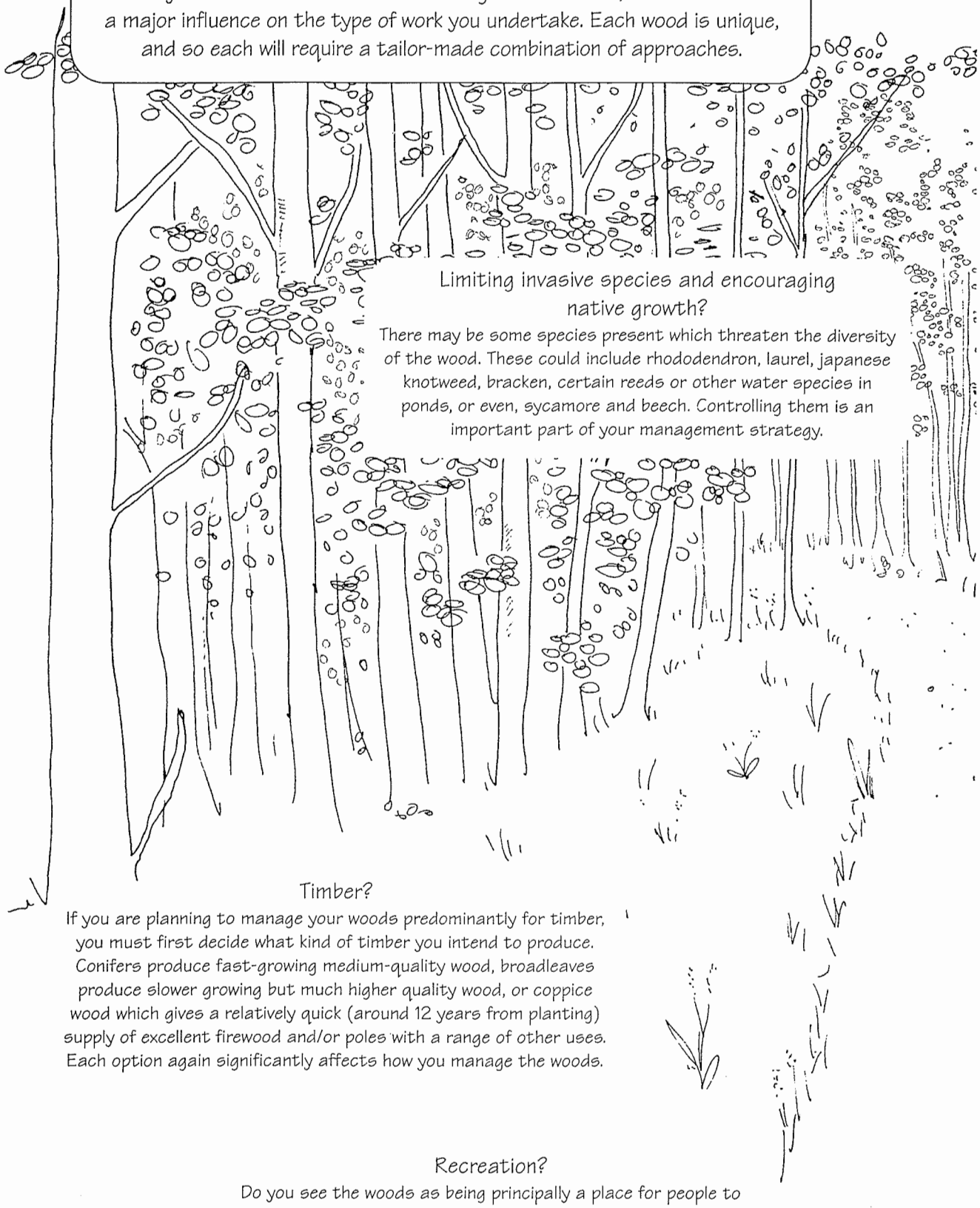


Are there any ponds or wetland areas?

The presence of water adds a lot to a wood's nature conservation value. Look at how big the ponds are, are they seasonal or permanent, what species grow in them or near them? Are they being encroached upon by invasive species, are they threatened by any sources of pollution or can they be enhanced?

Reasons for Management

Once you have determined what type of woods you have and what they comprise the next step is to decide why you are managing the woods. There are many different reasons for undertaking work in woods, each of which has a major influence on the type of work you undertake. Each wood is unique, and so each will require a tailor-made combination of approaches.



Limiting invasive species and encouraging native growth?

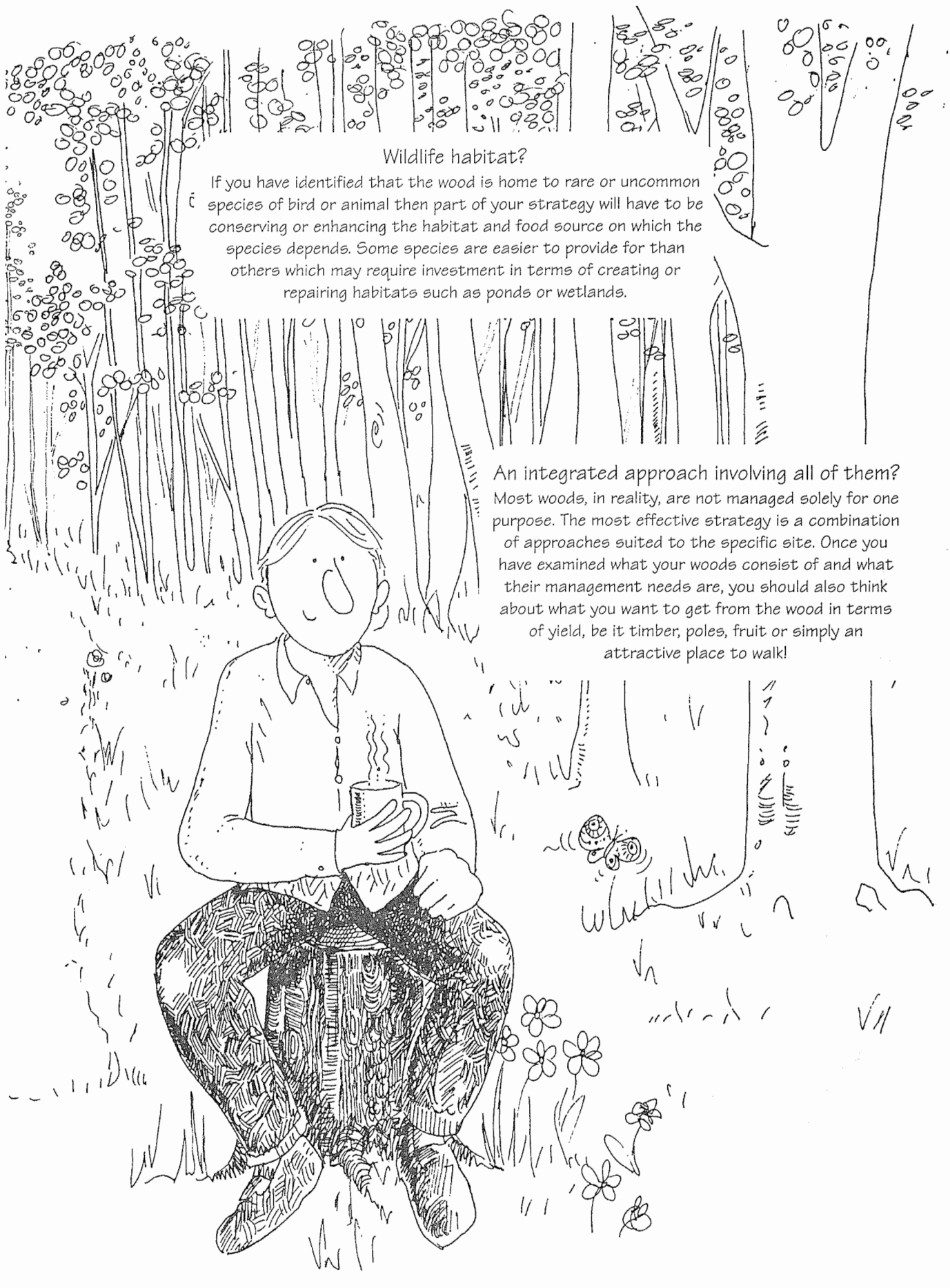
There may be some species present which threaten the diversity of the wood. These could include rhododendron, laurel, japanese knotweed, bracken, certain reeds or other water species in ponds, or even, sycamore and beech. Controlling them is an important part of your management strategy.

Timber?

If you are planning to manage your woods predominantly for timber, you must first decide what kind of timber you intend to produce. Conifers produce fast-growing medium-quality wood, broadleaves produce slower growing but much higher quality wood, or coppice wood which gives a relatively quick (around 12 years from planting) supply of excellent firewood and/or poles with a range of other uses. Each option again significantly affects how you manage the woods.

Recreation?

Do you see the woods as being principally a place for people to walk, study, play or relax? This would lead to your gearing your management strategy more towards creating good pedestrian access, clear sign-posting, foot bridges and a more attractive look, as well as perhaps including some educational element, such as boards indicating different species and 'nature trails'.



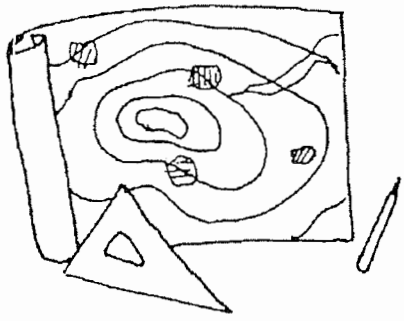
Wildlife habitat?

If you have identified that the wood is home to rare or uncommon species of bird or animal then part of your strategy will have to be conserving or enhancing the habitat and food source on which the species depends. Some species are easier to provide for than others which may require investment in terms of creating or repairing habitats such as ponds or wetlands.

An integrated approach involving all of them?

Most woods, in reality, are not managed solely for one purpose. The most effective strategy is a combination of approaches suited to the specific site. Once you have examined what your woods consist of and what their management needs are, you should also think about what you want to get from the wood in terms of yield, be it timber, poles, fruit or simply an attractive place to walk!

Management Plans



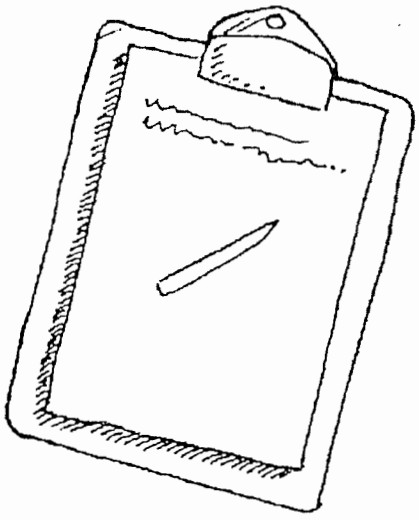
Once you have carried out an initial evaluation and decided the reason for managing your wood, a more detailed survey of the wood may be needed.

A woodland survey can be done on 2 levels. The first, more general survey, looks at the wood itself, the tree species present and how it is laid out. It looks at the condition of the wood, areas with good regeneration and with poor regeneration and produces a detailed map. This work is best undertaken by people with experience of woodland surveys although it can be done by you with a good tree identification book.

The second and more detailed level is a Flora and Fauna Survey, which looks at all the species the wood contains apart from the trees. This survey will provide information about any species which need special protection or need controlling (i.e. invasive species). Again, expertise on wildlife may be sought.

These surveys are the first stage of a Management Plan. A Management Plan should contain the following;

- what communities and species are present
- an analysis of the ecology of the site and the objectives of management
- the measures that will be needed to achieve the objectives (including detailed proposals and work programmes)
- the means of determining progress towards the objectives of the Plan.



Preparing a plan like this will enable you to make the most efficient use of your resources. This is particularly important if the wood is being managed by more than one person, as the absence of an agreed management plan can result in a waste of resources and no clear focus to the work being undertaken. It is important that the management plan is clear, unambiguous and easy to use with clear maps and timetables of when different work needs to be undertaken. Preparing a really detailed and good quality management plan really needs the involvement of someone with experience of woodland management.

Your Woodland Management Toolkit

Managing a wood requires a range of techniques and simple skills. This section of the booklet identifies those you'll need to be familiar with to be able to tackle the management of your own wood. Clearly this cannot take the place of expert advice or of taking a course in some of these skills (courses of this type are becoming increasingly available). There is no substitute for experience, however, where possible you should try to learn from local people who have had many years experience of tending trees in that particular micro-climate and on those particular soils. Local tree nurseries will also be able to give you much useful advice.

1. Fencing

The main role of fencing in a wood is to exclude grazing animals such as sheep and cows. Often these fences are put too far into the woods resulting in damage. The habitat created where two distinct habitats meet (i.e. woods and grassland) is very important and is often more diverse than either on their own as it includes species from both. If fencing therefore keeps animals at a greater distance from the woods (see below) then a shrub layer can regenerate between the wood and the livestock.

Fencing wire nailed to trees damages them and prevents a natural woodland margin developing, even though it allows for shelter.

Putting the fencing further away from the wood protects the trees and results in a diverse strip between open ground and wood, allowing a natural margin to develop which can still provide shelter.

2. Introducing Light

In a wood which has been neglected for a number of years, there may be insufficient light reaching the ground, resulting in very little herb layer and new tree growth. A healthy well managed wood needs light, so the introduction of light into the wood may have to be one of your priorities. This can be done by firstly clearing invasive species such as laurel, briars and rhododendron (try to get the roots out rather than just slashing them back), and then by selectively thinning undergrowth, leaving a good age range of young trees. You may also need to remove some larger 'standard' trees, particularly conifers which are especially shade-creating. It is worth remembering that some tree species like beech are more shade tolerant than others such as oak and so need less light introduced.

3. Natural Regeneration

Various techniques have been developed to help woodlands keep some of their characteristic shrubs and trees, and assist natural regeneration. Success can vary according to site and species, but the ground should not be too wet or weedy.

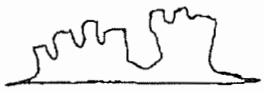
After fencing to exclude grazing animals, which can be a major aid, and the introduction of light by selective thinning to assist seedling growth of species such as Oak, Pine, Ash and Wild Cherry, some ground preparation to break up surface vegetation and leaf litter may be needed. This facilitates natural seeding and germination for smaller seeds such as Birch.

Where natural seeding is inadequate, you can collect and plant larger seeds such as Oak, Hazel and Beech directly, using tree shelters for protection if necessary (this may avoid the need for fencing in some situations). Smaller seeds such as Birch can be collected and sown mixed with leaf mould.

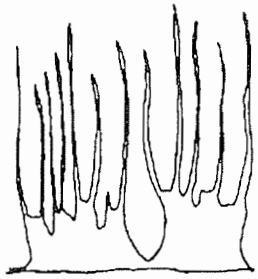
Finally, species with berries such as Rowan, Hawthorn, Guelder Rose and Wild Cherry, can be propagated in a small, rabbit-fenced nursery bed on the edge of a woodland, preferably using seed from the site, particularly where rarer species are concerned.

4. Coppicing

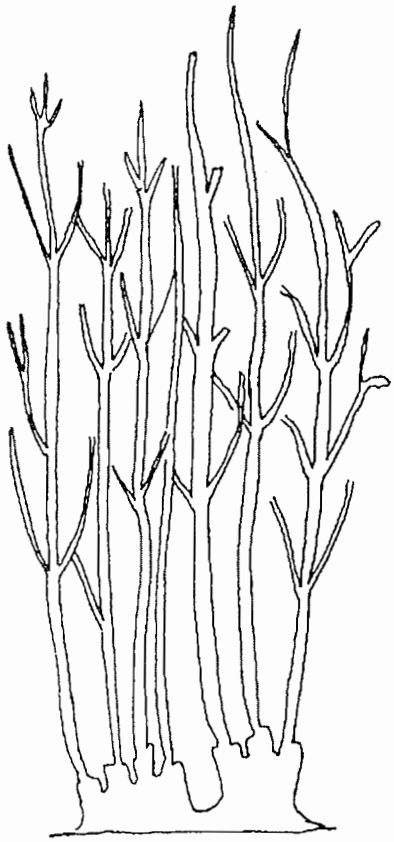
Coppicing is an excellent way to develop woods which combine wildlife habitat and timber production. Coppicing is a very old tradition, its most common form being 'coppice with standards'. Some species of trees re-grow as suckers from cut stumps, producing a number of long straight poles. These can then be used for charcoal making, for green woodworking, fencing, or, more commonly, firewood.



Year 1. Just after cutting



Year 3. After 3 years



Year 7. Ready for cutting

Coppice can be established on new sites, although it is best done on poorer soils or on slopes, thus leaving your best land for other uses. In existing woodlands, it is not a good idea to plant coppice into existing ancient woods unless it is part of a program of regenerating a wood that was previously coppiced and has fallen into abandon.

Coppice is planted and maintained in much the same way as ordinary woodlands, only at much higher density, usually on a 4 feet spacing grid pattern. Ideally coppice woods are planted in 'coupes' of at least one-third of an acre in size, and ideally a coppice wood will contain at least 7 coupes in order to generate a continuous yield. Coupes of this size also allow sufficient light in to allow full growth. The success of coppice depends heavily on the exclusion of grazing animals.

There are a number of species which can be coppiced, but in the interests of nature conservation it is best to focus on the native species like ash, hazel, alder, oak and willow. In terms of firewood production ash is the best choice as it can be burnt without being seasoned. The different species have different rotation times, i.e willow can be cut every 1-3 years while hazel is cut every 7 years.

5. Clearing Ivy

Contrary to popular opinion, ivy isn't always harmful to most trees and needn't always be cleared. Ivy has a symbiotic relationship with trees, that is they can live together without causing each other any harm. The only situations where ivy should be considered a problem are those where it is growing on conifers, particularly Scots Pine and when it grows so large and heavy that it threatens the structural stability of a tree. Ivy is a problem for softwoods because it can trap moisture and thereby cause the wood to rot. This may not be a problem on broadleaves unless they are already diseased. If ivy has grown so large that the tree is starting to lean it should be removed. Check first, however, that it is not home to owls for example.

Ivy is best removed by hand, first cutting its stems at ground level and then again at about a foot above, the resultant 'ring' being removed and discarded (this is best done in autumn/winter). Then leave it to die off over the winter and pull it down from the tree the following winter.

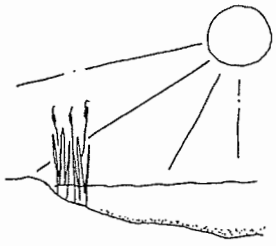
6. Fertilising

Although some people recommend fertilising soils prior to planting trees, it is not an approach we would recommend. The use of fertilisers such as rock phosphate are more suited for large scale forestry tree plantings on very poor soils. On smaller scale woodland management and woodland creation projects, there is no real need to fertilise. The best approach is to adjust your choice of tree to suit the site, rather than adjusting the site to suit your choice of tree, as modern forestry does. So, for example, if you have poor soil which is dry and sheltered, you can plant birch, oak or whitebeam instead of going to the expense of fertilising the soil. On wet soils, alder, willow, birch and oak could be planted instead of draining the site. The only real beneficiary of fertilising in such situations is the fertiliser industry! Once a wood is established it is very good at generating its own fertiliser, bringing up minerals from deep in the ground, and recycling them through the annual shedding of leaves.' If in doubt about your soil, TEAGASC, the farm advisory service, can test it for you.

7. Shaping and Pruning

Shaping young trees is largely unnecessary unless you are creating a commercial timber plantation. They will generally find their own shape and pruning may actually leave the trees open to disease. Some people however, recommend cutting back side shoots to promote upright growth. Pruning should be employed for removing cankers or diseased wood and any serious crossing of branches on older trees. Before undertaking any major tree pruning work, expert opinion should be sought.

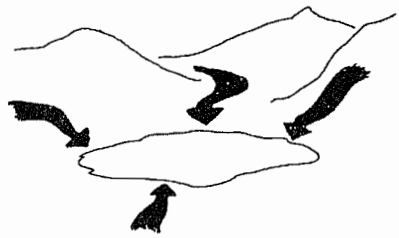
8. Creating Ponds/Wetlands



TIP - Design your pond with as sunny a position as possible

The creation of ponds and wetlands is relatively easy and is a very effective strategy for increasing the diversity of a woodland. It is easiest to create ponds in areas which have very high watertables, or are already boggy. Here pond creation is simply a case of digging a hole to the size you want the pond and it will naturally fill with water without leaking. Creating ponds elsewhere requires some kind of a liner to keep the water in the pond. The two main options are a waterproof membrane such as butyl rubber, or using clay, either that which is already present in the soil where the hole has been dug, or which has been imported.

If a pond is lined with butyl it must be first lined with something which creates a soft cushion for the rubber to prevent puncturing from stones. Old carpets, fine sand, cardboard or newspaper are ideal for this, or more expensive geo-textile liner may be bought for the purpose. The butyl rubber should then be covered with a layer of about 4 inches of subsoil, preferably that which has been excavated from the site. This acts as a foothold for aquatic plants and also protects the butyl liner from ultra-violet light, which can damage it. Bring the liner over the edges of the pond and then dig it in.

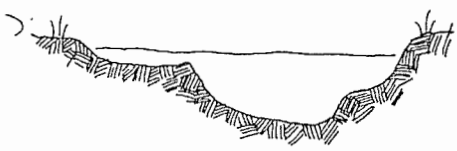


TIP - Sculpt surrounding land so as to direct surface rainwater run-off into the pond

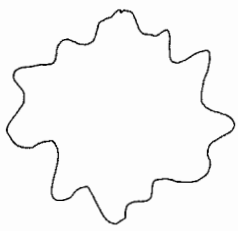
TIP - Transfer mud from the bottom of a nearby pond to start off your wildlife population

If you're lining with puddled clay, you'll need soil with a high clay content. The pond should then be lined with about 8 inches of clay mixed with a small amount of straw and some cow or horse manure. This should be kept continuously wet and then compacted. The traditional way to do this was by putting livestock in to trample around; another way could be to have a 'pond party' and summon together a group of friends in wellingtons! A puddled pond will require more attention in terms of ensuring that the water level doesn't drop significantly, as puddled clay allowed to dry will crack.

When designing a pond, try to give it as much 'edge' as possible, meaning that it should have an irregular shape. This creates many more wildlife habitats as well as giving many more spaces to grow useful plants such as willow. Try also to create 'shelves' of different depths, to allow a range of different species to co-exist. It is important also to bear the safety of small children in mind when designing your pond, especially if the reason for your management strategy is education or recreation. Avoid steep drops into deep water; if you do have such places, make sure the adjacent banks are impenetrably planted with thorny species.



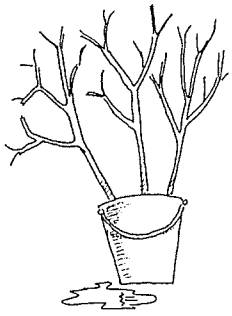
TIP - Create a pond with at least one smooth sloping side and a variety of levels.



TIP - Design your pond with irregular edges to maximise niches for wildlife species

When planting your pond, focus on plants which are native and of high wildlife value. You could also focus on those, such as flowering rush, common reed or water mint which are edible. A well designed pond can also serve as part of a reed bed system purifying waste water from nearby houses. Expert advice will need to be sought on this.

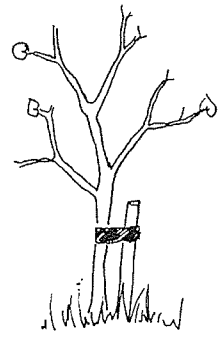
9. Planting trees



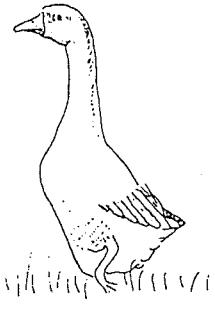
TIP - Soak trees in water for a couple of hours prior to planting

When choosing trees to plant, buy 2 or 3 year old bare rooted trees ('whips'), preferably of local provenance, that is of local genetic stock. Prior to planting, soak the roots for a couple of hours and trim off any broken or disproportionately long roots. If you are unable to plant the trees that day, they can be kept moist or, over the longer term, they could be 'heeled in'. This entails digging a trench , laying the trees in the trench and then covering the roots with soil. Wind damage kills more trees than anything else at planting time, keep bare roots covered and moist until they are actually planted.

Dig a hole deep enough for the tree's roots to have plenty of room. Fork over the bottom of the hole and add some well rotted leafmold. Within the woodland, it should not be necessary to stake newly planted trees. However, on the exposed margins of the woodlands or planting alongside existing woodlands, some staking may be necessary. The main purpose of stakes is to hold the roots of larger saplings firm in the ground but allow the stem to move and to flex in the wind. Stakes should be placed on the windward side of the tree and should be no higher than 3 feet or so above the ground. The stakes should be tied to the tree either using home-made ties (old tights are excellent!) or purpose-made ties. It is important to remember to remove stakes after 2-3 years. Plant the tree so that it is at the same level to the soil that it was in the nursery and then tread the soil back in firmly. The tree should then be watered well, and for the next few weeks should be watered regularly.

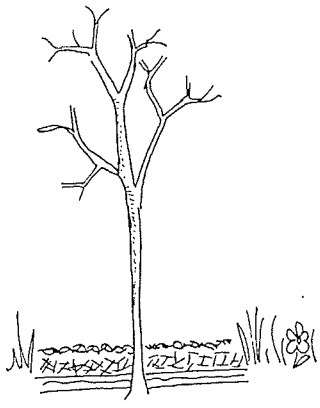


TIP - Stakes for young trees should be no higher than 2-3 ft.



TIP - Geese - Nature's lawnmowers

The main inhibitor to tree growth is weeds, which will compete with young trees even to the point of killing them. The usual way to restrict weed growth is by the use of herbicides applied twice annually for the first 3 years. Although this can be an effective approach, it may have undesirable environmental impacts, for example on micro-fauna such as insects. Any herbicide use should be according to the guidance contained in the booklet on the subject published by Coillte for the Forest Service. However, the preferred approach is the use of mulch to suppress weeds. The best options are "mulch mats" which bio-degrade after a few years, or black polythene which is a cheap but non bio-degradable alternative. A further method is the use of cardboard topped with wood-chips or leaf mould. These approaches generally are only effective on small patches of woodland, but by planting new woods in phases, the financial investment can be spread over a period of a few years, thereby lightening the impact both on the environment and on your wallet.



TIP - Mulch is a very effective weed suppressant on small-scale plantings

Practical Management Scenarios

Once you have identified what your woodland comprises, what your reasons for managing are, and are familiar with the skills and techniques such management requires, you can begin to approach the task with more certainty. This section takes you through a number of management options that may be encountered and offers practical advice on each one.

Restarting old coppice

Woodlands which were coppiced but in which coppicing has now ceased are called 'stored coppice'. Bringing them back into production is of benefit to wildlife as well as providing regular crops of timber.

The first step is to examine what species are present, how long the wood has been abandoned and what other species may have colonised among the coppice during that time. Any conifers or invasive species such as rhododendron or laurel should be removed. If the wood has been abandoned for less than 100 years (40 years for hazel) it should be possible to restart the coppicing cycle. Stored coppice can be treated in one of three ways;

1. re-starting the coppicing cycle,
2. singling the multi-stemmed trees to make them into standard trees
3. a combination of the two, 'coppice with standards'.

Singling stems and choosing the right stem requires considerable skill and it's best to seek expert advice. Inappropriate singling can lead to rot getting into the wood. When calculating the distances between standards you should work out how large the trees will grow and then thin aiming to leave 30 to 50% cover.

Coppice which has been abandoned for a number of years is unlikely in the first cutting to yield many long straight poles, it is likely to be best suited for firewood. In order to obtain the best quality coppice wood, an approach some people have found effective is to cut the stems and then to recut them 3 years later then waiting the usual 6-7 years for the first proper yield. You can also use the 3 years growth to start new trees by layering in the gaps present in the wood ('layering' is the practice of bending branches from existing coppice trees to the ground and holding them there with a peg until they begin to take root).

☑ Management Tools needed: 1, 2, 4, 5 & 7.

Managing scrub

Scrub is generally seen as an untidy mess of small trees which is of no value at all. It is however nature creating woodland, and the woods that result from the process of natural succession from bare ground to full cover are usually much more healthy and diverse than the ones we plant. The various stages of development offer niches for different wildlife. The aims of managing scrub are therefore two fold; to allow it to proceed to woodland or to create a diverse age structure for maximum nature conservation interest.

Scrub will generally revert to woodland if left alone. Some intervention may be needed in terms of adding native trees that don't emerge naturally and perhaps mulching around some of the younger trees to speed their growth.

If you plan on maintaining scrub as a range of different-aged habitats, this can be done in a variety of ways. One way is to cut patches mechanically on a rotation, the period of which depends on the rates of re-growth. The other way is to allow grazing by cows or sheep at fairly low densities, fencing off areas on a rotation. The main advantage of grazing is that it gives a much more natural appearance, as opposed to cutting which can look harsh and uniform.

☑ Management Tools needed: 4 & 7.

What is Succession?

Bare ground is rapidly colonised by pioneer species such as grasses and perennial herbs and 'weeds' which bind the soils together and create the conditions for larger pioneer species such as gorse, bog myrtle, heather and brambles. These create and improve the soil and attract birds and other wildlife which bring tree seeds into the area. After 10 years or so these begin to die back and trees grow through. Initially tree species tend to include 'nursery' species like birch or dwarf willow (sally) but in time these can make way for others like ash and oak. The tree layer growth eventually shades out pioneer species which depend on a lot of light.

The only obstacle to succession is if seed in the soil has been depleted. Since no tree species has seed which san "store" in the soil beyond three years, you may need to intervene in the process, adding trees and shrubs where needed.

Recolonising areas degraded by soil erosion is vital, and should be encouraged, rather than burning off this pioneering vegetation.

Aim to manage scrub in such a way as to create a diverse mosaic of different aged habitats

Creating new woodland

While assisted natural regeneration is the prime tool for conserving and enhancing existing woodlands, Ireland needs much more broad-leaf and mixed woodland than natural regeneration can achieve alone. While such reforestation is now part of Government policy, creating new woodland is much more than just the planting of trees. A carefully conceived and planned woodland can meet a number of uses and can produce a range of yields.

Native and naturalised species

Pros.

- Much higher biodiversity
- Potential for designing woodlands with a wide range of products and uses
- Higher quality/value timber
- More attractive for recreational use
- Much more diverse age structure
- Species contribute to soil creation

Cons.

- Generally slower growing
- Requires more skillful management

Certain areas are more suitable for tree planting than others. These include marginal land, awkward shaped fields, land adjacent to existing woodland, tracks or other features. Land on slopes of over 20% (15% on sandy soils) should be wooded to prevent erosion. At least a single line of trees mixed with shrubs could also be planted along river banks to help prevent contaminants like slurry entering the river, indeed this is one of the requirements of the REPS scheme. North-facing slopes are best suited to being planted as woodland, as trees like the moister microclimate and don't need so much direct sunlight. Some areas should not be planted with trees, namely those areas which are of particular value as rare wildlife habitats or are valuable agricultural land. This includes habitats like lowland heaths and wildflower meadows. Some soils may be too compacted or wet and may require ripping prior to being planted.

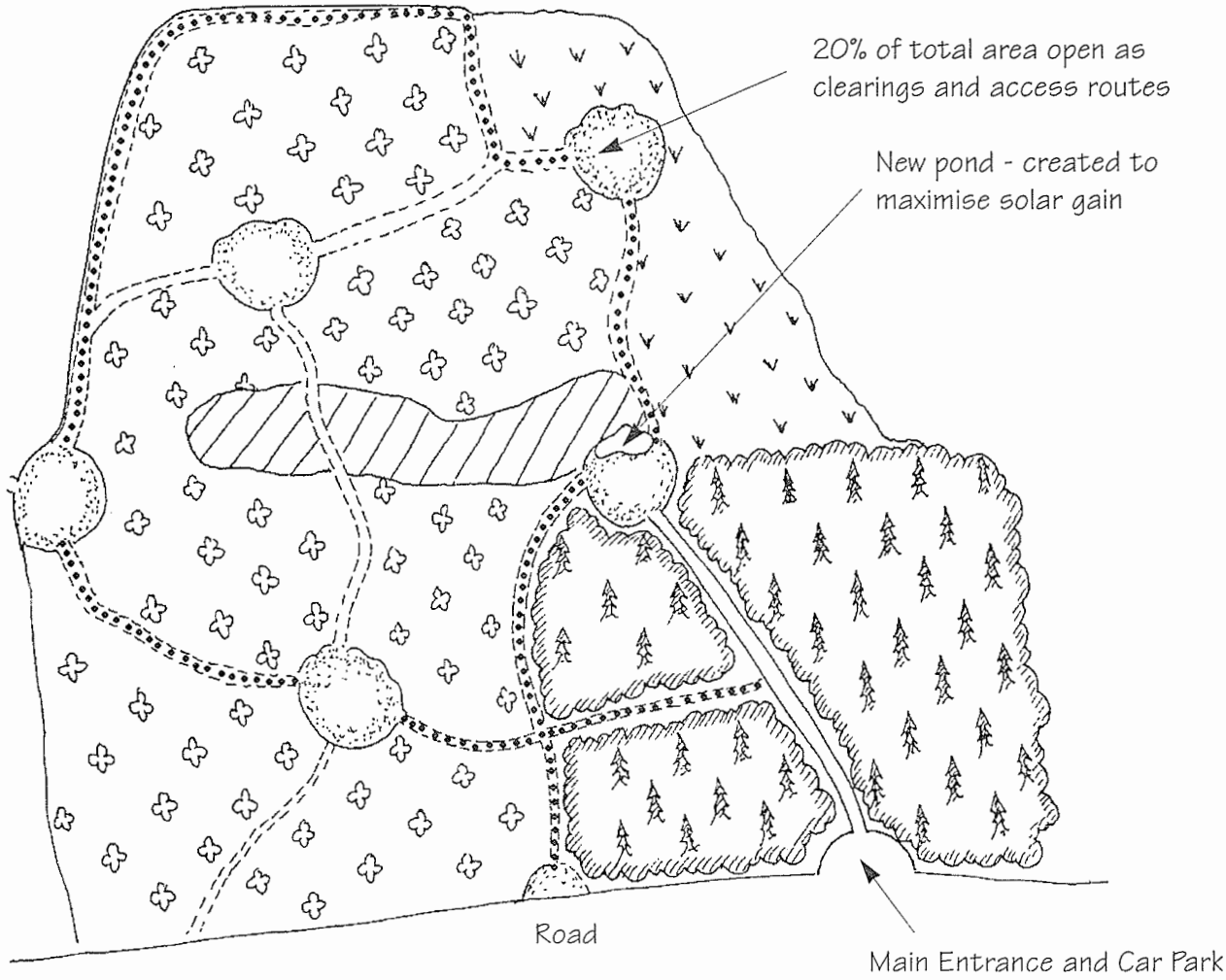
New woodlands can be either planted purely for timber or can be conceived as serving a range of functions. Plantations purely for timber, usually combine one or two species for example oak and Scots Pine, in rows. This kind of plantation offers the advantage that it is grant aided (see Appendices), both the original planting and the subsequent maintenance. A well-designed woodland combining a range of species and habitats, although requiring more initial outlay, offers much more in terms of a range of yields and as yet is not grant aided.

One of the things to be borne in mind when planning a new woodland is access. Your reason for management will determine what kind of access you need, if you are designing for recreation and education you will need different access to that for timber extraction. You will need good access both into the wood and within the wood. When siting access roads for timber extraction you should try to utilise gravity as much as possible, which means working with the contours of the land. Look out for any archaeological features on the site and consult with the Heritage Service - Dúchas - for specialised advice to avoid damage.

Well designed woodland should include open spaces; ideally about 20% of the total area should be kept free of trees and used to create a variety of open habitats. These can include access routes, paths, glades, ponds and clearings (see the relevant sections in 'Your Woodland Management Toolkit').

Design the layout of the woods so as to maximise the amount of 'edge', that is the amount of areas where woodland and open ground meet. These areas are the most dynamic in terms of wildlife and are the most productive in terms of species. Give wooded areas irregular edges and a variety of shapes rather than just blocks. When designing windbreaks place them in the direction of the strongest winds, generally south-westerlies. Windbreaks are effective at between 5 and 25 times their height. Wild flowers do have soil seed banks, and the creation of new woodland can provide an opportunity for local flower species to re-establish even after many years.

How to Lay Out a Mixed Use Woodland



Key

- Wider access routes sown with local wild flowers
- Minor access routes
- Mixed broadleaf woodland
- Coniferous woodland with a broadleaf edge
- Surfaced Access Road
- Areas retained as scrub
- Open glades seeded with local wild flowers
- Mixed coppice woodland

☑ Management Tools needed: 1, 2, 3, 4, 5, 7, 8 & 9.

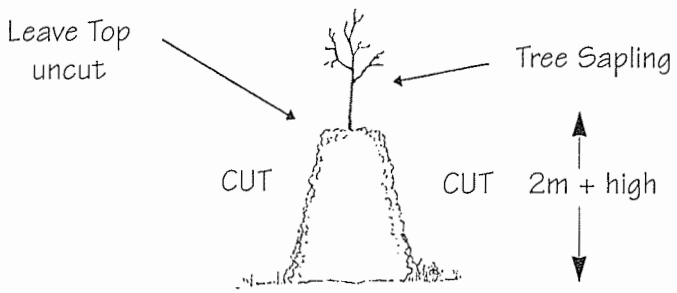
Hedgerow Maintenance

Hedgerows are an integral part of the Irish countryside and are very important linear habitats for wildlife. They perform vital links as wildlife 'corridors' between different important habitats. Care taken in maintenance of existing hedges is therefore time well spent. Hedges along roads or tracks should never be cut during summer or autumn, the best time is late winter (January to March). There are 3 main ways of cutting a hedge. These are;

- The reciprocating cutter bar. This is best used in annual trimming, for cutting back soft growth.
- The flail cutter. On 2 or 3 years growth a flail cutter is the best option. It is not suitable on anything older than that or on heavy woody growth as it leaves an unsightly hedge which is liable to decay.
- The circular saw is the best thing to use on overgrown hedges or for coppicing work.

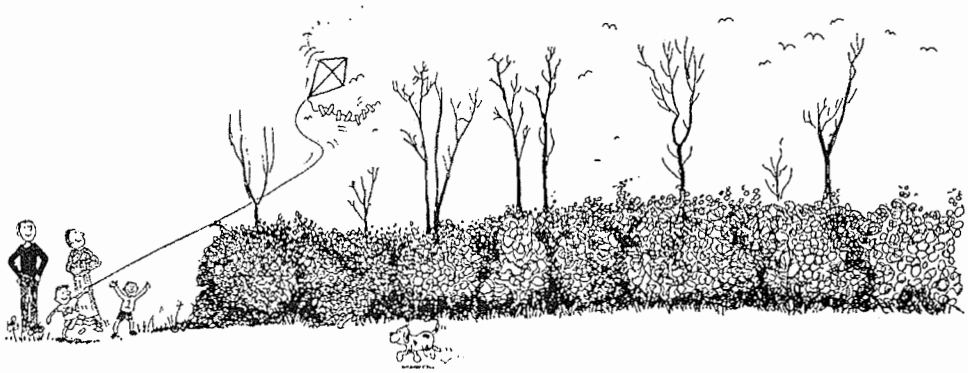
The essential thing to remember when cutting a hedge, whichever of the above methods you use, is that hedges should generally be cut vertically, rather than horizontally. Cutting hedges horizontally is increasingly becoming common practice but it is counter-productive, particularly alongside roads. Horizontal cutting results in a hedge which forces its growth outwards while vertical cutting encourages upward growth.

The ideal hedge height is 1.5 - 2 metres. Where possible, try not to cut the whole hedge in one year, rather cut in sections on a 3-year rotation, so that there are always parts of the hedgerow which are uncut. This greatly increases its value for wildlife. The best shape, both in terms of ease of maintenance and wildlife interest is one which has a wide base and gently sloping sides (known as an 'A' shaped hedge).



Some trees should be allowed to grow up through the hedge. The best spacing between most species of trees is 10 metres. Uneven spacings make for a more visually pleasing 'natural' appearance. As well as leaving trees at intervals, allow some saplings to grow up through the hedge to replace the larger trees which may be lost through disease, storms and so on in the future. When creating a new hedge it is best to focus on native species which are also beneficial for wildlife, such as spindle, guelder rose, blackthorn, whitethorn, elder, rowan, hazel, hawthorn and holly.

The alternative to cutting a hedge is hedge laying. This practice is an excellent way to create a dense stockproof hedge. A well-laid hedge is a beautiful addition to any farm, and the skills required are easily learned. There are courses run now in hedge laying by some conservation groups.



Hedgerow corridors

Where parcels of woodland are within reach of each other but it is not possible to amalgamate them into a single wood, there are many benefits to be gained from linking them up with a network of hedgerows. This allows species to move from one to the other in such a way as to reduce their vulnerability to predation. Such hedgerows do not need cutting but can be allowed to expand in width to incorporate the 'headlands' of adjacent fields.

☑ Management tools needed: 4, 9

Managing Conifer Plantations for Wildlife

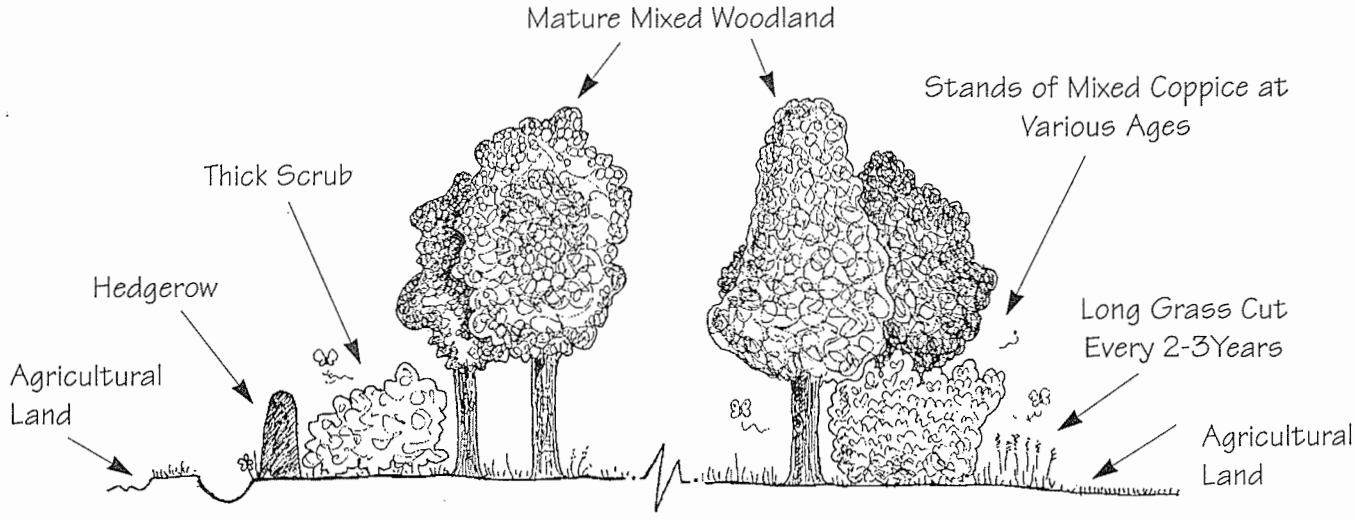
While plantations of coniferous woodland can be of great benefit in terms of providing timber quickly and bringing a quicker cash return, they can also have a number of undesirable impacts. These can include the visual impact of large blocks of single species, acidification of soils and watercourses, sedimentation of rivers and streams as a result of ploughing prior to planting and the use of inappropriate sites and species. Due to their dense cover which allows no light to penetrate, species diversity can be very low. Thinking about minimising the impacts of conifer plantations at an early stage can result in a number of benefits. From the outset, the objective of managing a conifer wood should be to enhance its species diversity.

Conifer plantations should be planted in stages so as to create a full age range of trees. It is the very young and the older trees which are of most interest to wildlife, offering the most niches. One strategy is to retain a small permanently uncut core area to develop as mature or decaying wood habitats for species which can then colonise the various parts of the wood as they age. It is current Coillte practice to include a band of deciduous trees around conifer plantations. This strategy could be broadened however to include planting clumps of broadleaf trees within the conifer plantation, preferably linked by 'corridors', either thin rows of trees or hedges. This would allow species to move between them. Another approach is to include clearings and tracks, to give sun-loving species a foothold.

Conifer plantations tend also to be felled all at once. This creates problems of soil compaction and erosion, leading to soil being lost into streams and rivers creating siltation downstream. It is also a very ugly process for the landscape. Felling could be done more sensitively by either cutting in patches or in strips along the contours of the land. In designated scenic amenity areas and along scenic routes, selected felling is the only sensitive approach.

☑ Management tools needed: 2, 4, 5, 8 & 9

Cross-Section of a mixed use Wood



Managing for Wildlife Conservation.

A wood managed for wildlife is not only good for wildlife, but also for the health of the whole woodland, creating increased decomposition and incorporation, better pollination and an altogether more healthy eco-system.

There are many ways to make a woodland more attractive to wildlife. The first is to diversify the age structure of the wood to make it more varied and thereby to create more niches for wildlife. This can be done by adding young trees which will eventually replace the climax trees if none are there already. Coppicing is one of the best habitats in terms of varied age structure as it creates habitats from an open just-coppiced habitat with lots of herb layer growth, to the just-about-to-be-cut habitat which has a whole different range of niches.

Another excellent way of increasing the range of wildlife habitats is by creating one or more ponds. The best place for a pond is where the land is naturally lowest-lying so that the surrounding land will naturally channel rainwater in to keep the pond topped up. It is not the intention here to go into detail about how to create a wildlife pond, this is well covered in other publications (see recommended reading at the end of this booklet).

Birds can be attracted in by putting up bird boxes. Different hole sizes attract different species of birds, so tailor the boxes to the birds you want to attract. Species such as robins and wrens will also nest in loosely tied bundles of twigs. Others, such as barn owls will need old trees and large boxes (contact Birdwatch Ireland for advice).

Many invertebrates depend on rotten and decaying wood. It is important to allow for dead wood at intervals throughout the wood. It may be possible in younger woods that these species are not present. In this case it may be advisable to bring some logs in from older woods to introduce these species.

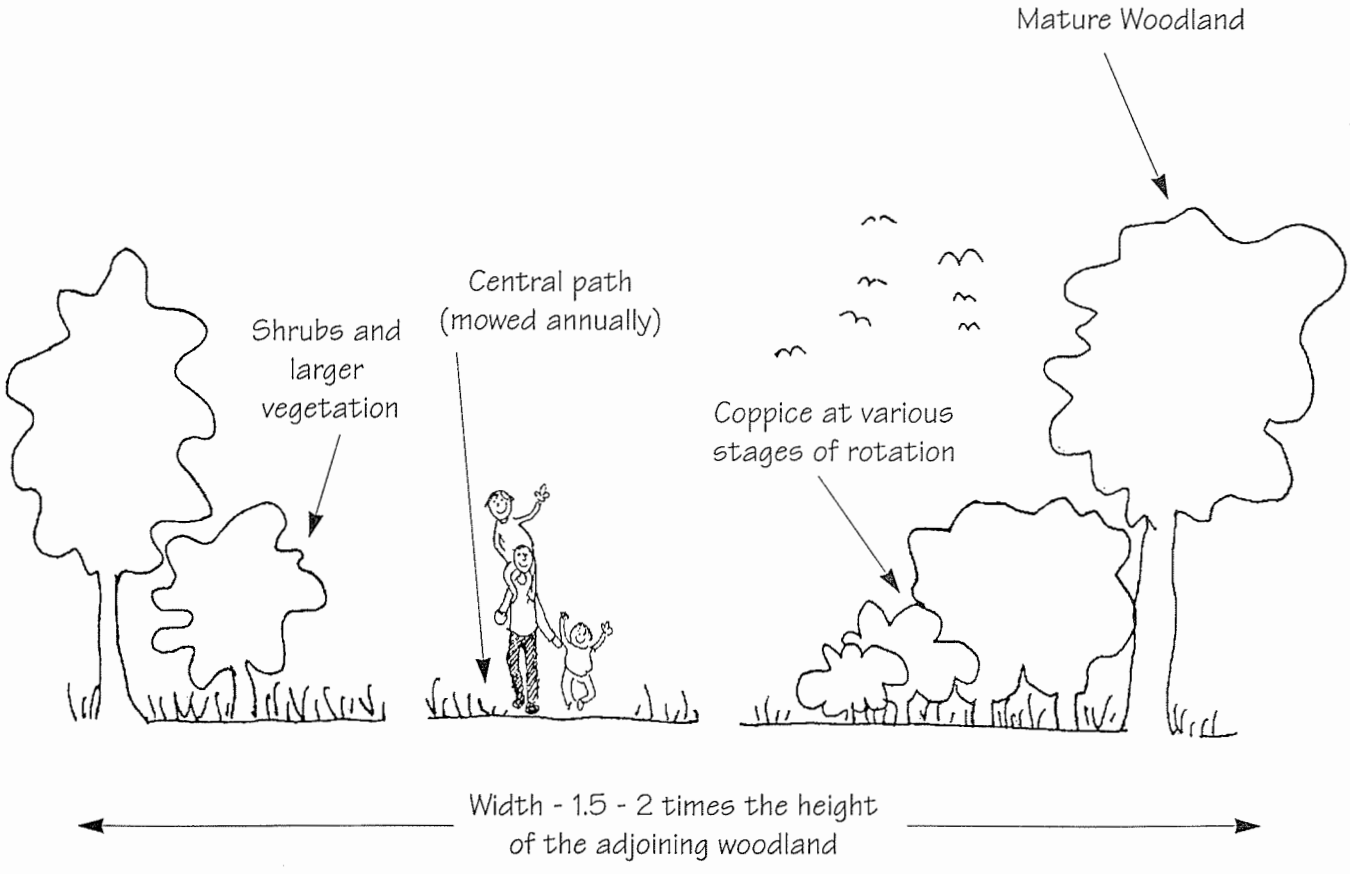
It can also be beneficial in terms of creating more niches for a wider range of species to introduce native herb species such as primrose, bluebell, wood anemone or lesser celandine. These can be introduced into an area mulched with composted leaves or shredded bark, but not where any rarer species are present. When selecting tree and shrub species to be planted into the wood or when choosing between species to be removed, aim as a rule to retain/plant native species. Native species often provide food for birds and other fauna, a relationship which has evolved over many thousands of years, and one which were possible, you should seek to promote. Native species also offer much in terms of habitat niches, the native sessile oak (Quercus petraea) for example, is home to almost 300 species.

Access Routes and Glades

Open space in a wood is essential if you are aiming to diversify the number of habitats it contains. Many species, particularly some invertebrates, thrive only in the parts of woods where sun can penetrate. For example, the majority of butterflies are only found in places with less than 20% shade. Access routes, whether they are for extracting timber or for recreation can greatly contribute to the provision of such habitats.

Access routes need generally to be 1.5-2 times wider than the height of the adjoining woodland and ideally, run east to west so as to allow for maximum solar aspect. They are also at their best when managed as a mixture of different aged habitats. This is best achieved by cutting different patches on a 1-6 year rotation, leaving some areas to grow as scrub or coppice, while keeping other areas cut short, as can be seen in the diagram below.

Access routes can be used to link clearings, thus making a network of open spaces throughout the wood. Clearings should be at least 0.25 hectares in size, and ideally around 0.25-2 hectares. Focus on native species and avoid anything which is invasive.



Afterword

As intensive monocultural forestry becomes more and more mechanised, it generates fewer and fewer jobs. By contrast, woods planned or managed in the ways which have been outlined in this booklet can create a range of jobs. The benefits however do not end just with employment opportunities. Timber, particularly that of broadleaf trees such as Oak and Ash, Beech and Sycamore, is an excellent building material in terms of hardness and strength, with low environmental impact. Timber has an embodied energy level of 110 kWh/m3, as compared to steel (103,000 kWh/m3 or bricks (1462 kWh/m3). The inclusion of artificial wetlands and fast-rotation coppice into woodland designs can create woods which produce both biomass for power generation as well as biological treatment of surrounding houses' waste water. Trees absorb carbon dioxide and so provide a valuable contribution to the reduction of global warming. Woodlands prevent soil erosion and protect the rivers which flow through them. There are also many other social benefits including amenity use and tourism.

As *'The West Cork Woodland Report'* has identified, there is urgent need for the sensitive management of existing woods as well as the creation of new ones. This can either be done on an ad hoc basis without any overall planning, or Local Authorities can take the initiative and create a county-wide woodland strategy with the aim of linking existing woods with hedgerows to create a network, and then to integrate new woodland plantings into this network. New development can then be planned to complement such a strategy.

Many of the beautiful woodlands that we are able to experience today are the result of the forward-looking foresters of the past who planted and nurtured new woodlands knowing they would never get to see their full glory. Today we need that same sense of vision to create new woodlands for our children and our grandchildren. We also need to take care of what woodland we have left, as it may yet prove to be our most important inheritance.

"Never, no never did Nature say one thing and Wisdom another".

Edmund Burke (1729-97)

Appendices.

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Recommended Journals

Reforesting Scotland Magazine, 21a Coates Crescent, Edinburgh, EH3 7AF.

Permaculture Magazine, Hyden House Limited, The Sustainability Centre, East Meon, Hampshire. GU32 1HR, UK.

The Dendrologist, PO Box 341, Chesham, Buckinghamshire HP5 2RD, UK.

Agroforestry News, Agroforestry Research Trust, 46 Hunters Moon, Dartington, Totnes, Devon. TQ9 6JT, UK,

Recommended Expertise

An Taisce West Cork can put you in touch with experts in the following areas,

* Woodland Surveys
* Flora and Fauna Surveys
* Management Plan
* Grant Applications

For further information contact either Anthony Cohu on 027 66042
or Clair Heardman on 027 51187

Current Grant Schemes for Woodland Management

a. Amenity Woodland Scheme
b. Reforestation Scheme
c. Woodland Improvement Grant
d. Reconstitution of Woodlands
e. REPS (Rural Environmental Protection Scheme)

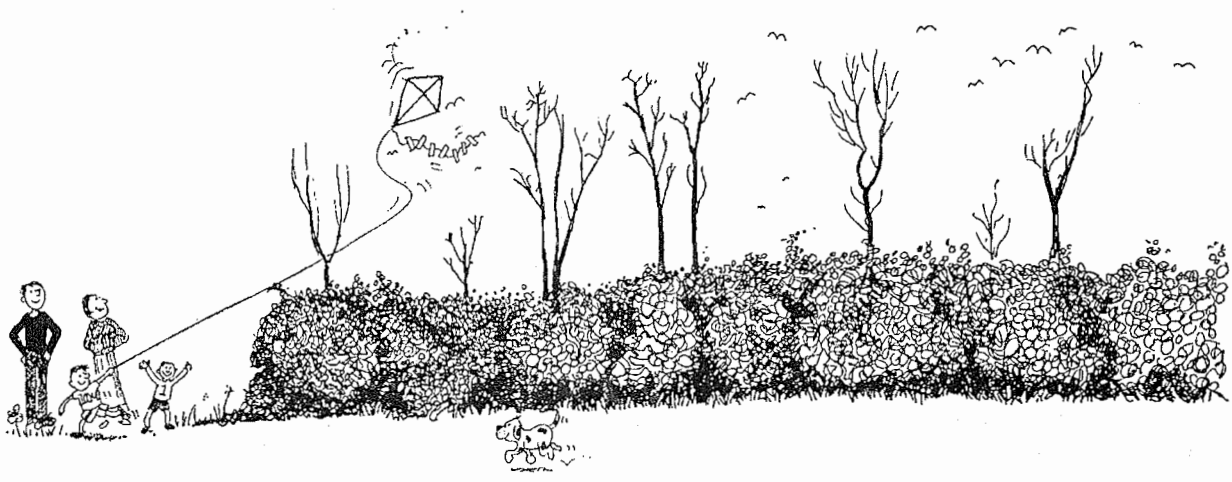
For information on a-d of the above, please contact your local Forestry Inspector.

Dunmanway. Eugene Curran, Forest Service, The Square, Dunmanway, Co.Cork. Tel. (023) 55105.
Cork. P.J. O'Callaghan, Forest Service, Irish Life Building, South Mall, Cork. Tel. (021) 274233.

For information about REPS, contact your local Teagasc office.

Organisations with Interests in Trees

- An Taisce, The National Trust for Ireland, Tailor's Hall, Back Lane, Dublin 8. Tel. (01) 454 1786.
- Coillte Teoranta, Leeson Lane, Dublin 2. Tel. (01) 661 5666.
- Cork County Council, County Hall, Cork.
- Crann Woodland Trust, Main Street, Banagher, Co. Offaly. Tel. (0509) 51719
- National Parks and Wildlife Service (now known as Dúchas - The Heritage Service)
  District Wildlife Officer: John Brennan 027 50180
  Local Wildlife Ranger: Declan O'Donnell 028 37347
- Tree Council of Ireland, Comhairle Crann Na hEireann, Royal Hospital, Kilmainham, Dublin 8.
- Trees for Ireland, 61 Rathgar Road, Dublin 6.



About the author

Rob Hopkins (BSc.,Dip.Perm.Des.) is a Permaculture designer, consultant and teacher living in West Cork, who is promoting the concepts and practice of permaculture design including the establishment of West Cork's first Eco-Village. For further information, contact him at 023-38141, e-mail-robnemma@iol.ie

About An Taisce

The National Trust for Ireland

An Taisce, which means "the Treasure", was founded in 1947 and is Ireland's oldest independent Environmental Organisation. It is a voluntary and non-profit making body which:

- lobbies politicians and government departments to improve legislation, funding and other policies to protect the environment;
- publishes a wide variety of literature on protecting the landscape, nature conservation, tourism, planning, architecture, forestry and agriculture, and other issues that affect the natural and built heritage;
- co-ordinates the European Blue Flag award scheme for beaches and marinas in Ireland;
- holds public meetings, conferences, and seminars on current environmental issues;
- maintains strong links with international organisations including European Environmental Bureau (EEB); World Wide Fund for Nature (WWF); Foundation for Environmental Education in Europe (FEEE); The National Trust; The Sierra Club of USA; and Europa Nostra;
- encourages and promotes special interest groups (e.g.: heritage gardens, architecture, industrial heritage, woodland conservation);
- welcomes and encourages new members.

About An Taisce West Cork

An Taisce West Cork is the youngest regional Association of An Taisce dedicated to promoting its aims, objectives and activities. Since 1993 we have been actively involved in:

- informing individuals, community groups and official bodies on conservation issues and data;
- developing recommendations on sustainable environmental policies and practices at local level;
- encouraging ecologically sustainable management in the bays;
- protecting the coastal areas, mountains and valleys from incongruous development;
- promoting higher standards of environmental design in housing development and building detail;
- surveying, mapping, and reporting on the remaining woodlands of West Cork;
- conserving unspoilt natural habitats for flora and fauna;
- creating employment opportunities in the sustainable management of the environment.

As a voluntary, non-profit making organisation, An Taisce West Cork needs your support both physically and financially to continue its work. For further information contact An Taisce West Cork office at: PO Box 14, Skibbereen, Co. Cork, Ireland, tel. & fax: 028-21833

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Please return your completed Application Form and Subscription to:
An Taisce, The National Trust for Ireland, The Tailors' Hall, Back Lane, Dublin 8, Ireland.

This booklet accompanies "The West Cork Woodland Survey - a report", and aims to give landowners who are responsible for woodlands guidance and advice on the best ways to approach their management. It introduces the reader to the evaluation of woodlands, the various reasons for undertaking their management and the preparation of management plans. It then takes the reader through the various skills and techniques required for woodland management and then applies these to a range of different scenarios. It gives clear and easily followed advice and contains many illustrations.

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