English Woodland Grant Scheme

Operations Note 011 December 2005

Managing woodland open space for wildlife

Purpose

This Note introduces a guide to managing woodland rides and glades for wildlife, that has been developed by South-East England Conservancy. It brings together and summarises published guidance on this subject form various sources. The principles set out will be relevant to all similar work in all parts of England.

Use

This guide should be used to inform woodland managers of the principles and practices that will deliver improvements to woodland open space management.

Woodland Management Grant and Woodland Improvement Grants can contribute to the work covered by this guide. It is not intended that all rides within grant aided woodland should be managed in strict accordance with this guidance guide, but where such work forms part of a grant agreement the FC will normally expect to see the principles and practices being applied.

The practices must be undertaken sustainably for EWGS grants and as such should be modified as necessary to suit the local conditions. In particular, open space management to take account of habitats for species that prefer a proportion of unbroken canopy and shade for feeding, movement or protection (such as some bryophytes and fungi, larval stages of insect species, bats, red squirrel, dormouse etc).

Support

This Note is supported by National Office England.

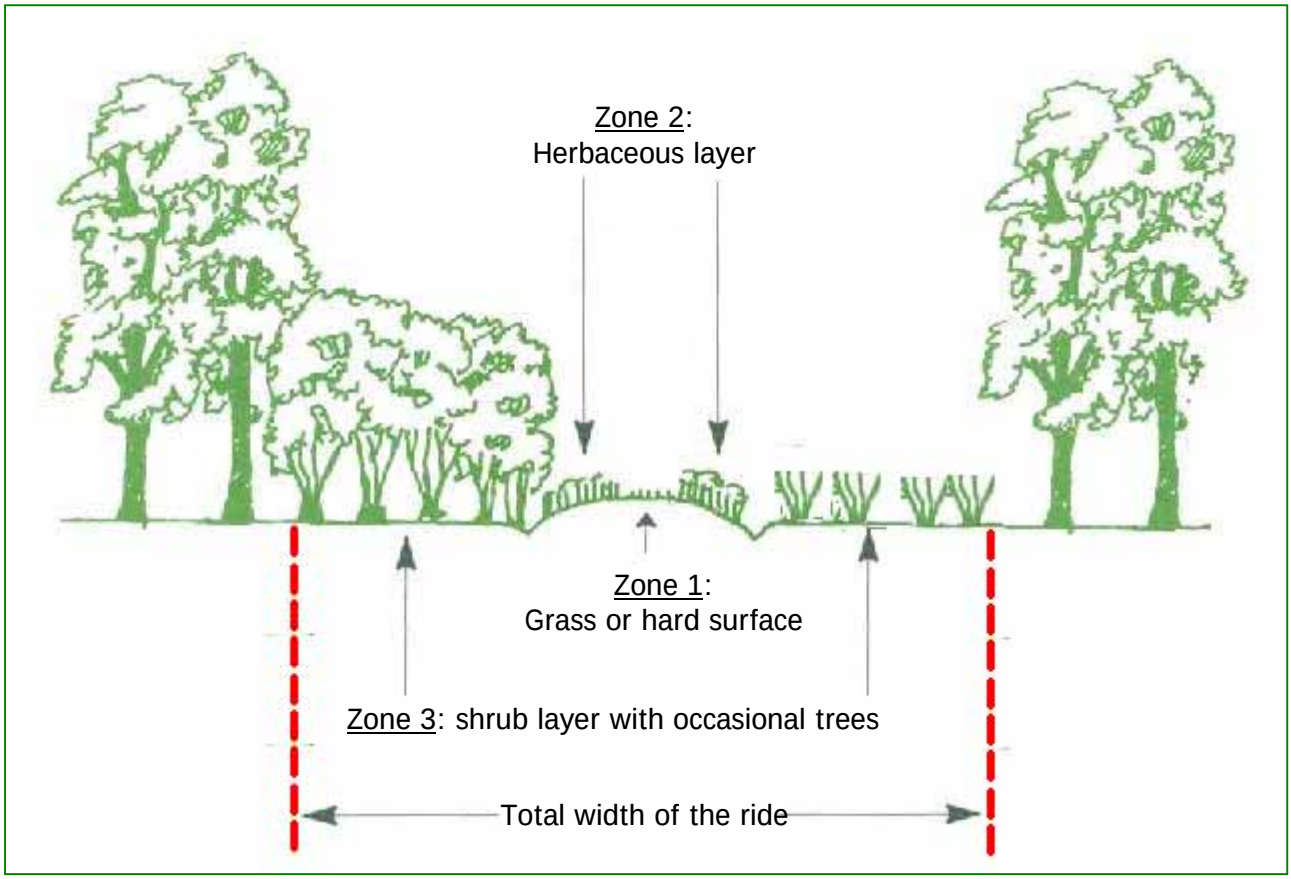
Guide to managing woodland rides and glades for wildlife

1. What is a ride?

For the purpose of this document a ride is a linear open space within a wood derived from the need for access. Rides may have a hard surfaced track making up part of the width or more commonly are unsurfaced. The ride is usually made up of several zones. Most commonly rides consist of a central grass zone with a mixed herbaceous and shrub zone on one or both sides. The diagram below shows a 3-zone ride where the shrub and herbaceous zones are separated.

A path or track becomes a ride at the point when it is wide enough for there to be a gap in the canopy above the ride which allows sunlight to reach the ground.

Diagram of the zoning of a ride



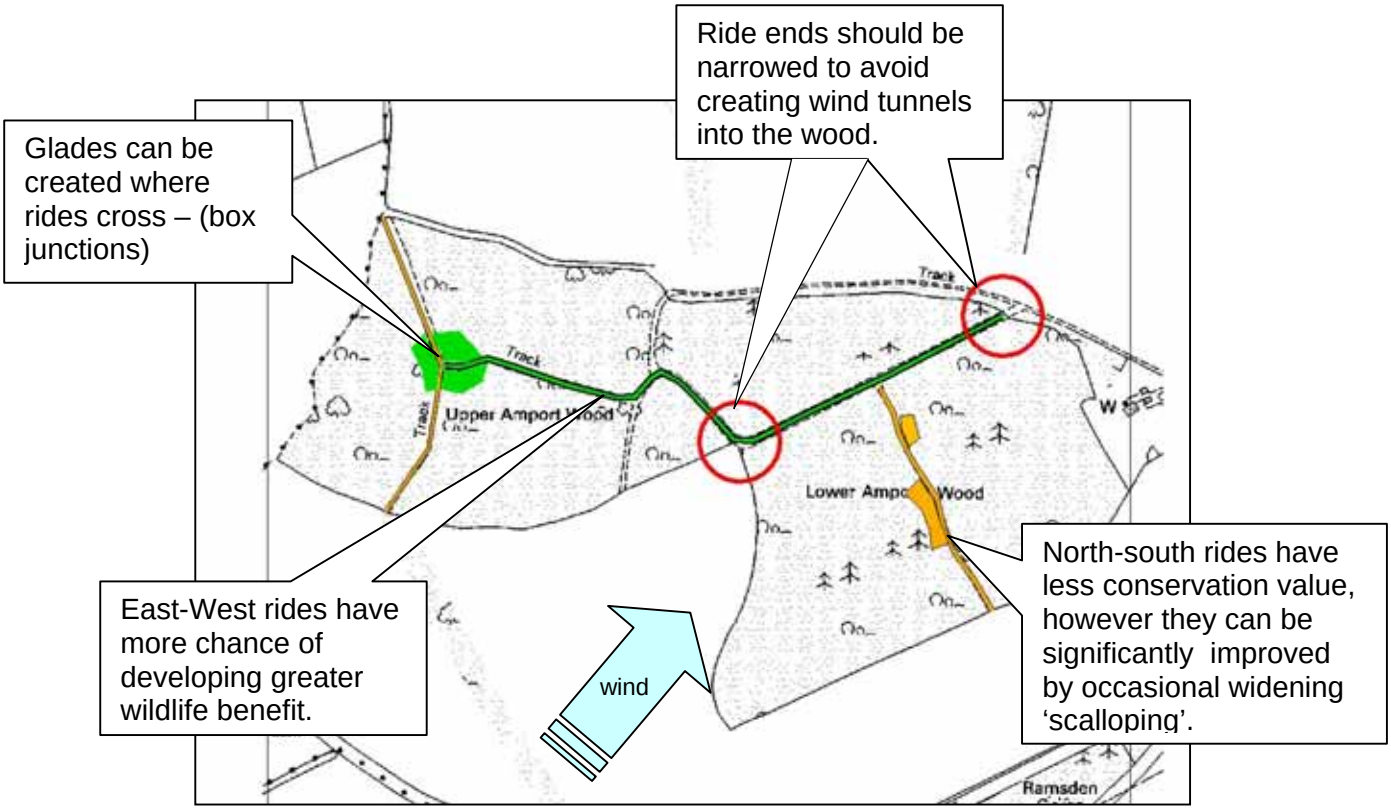
2. The benefit of managed rides and open spaces:

Sensitive management of open habitats introduces greater habitat diversity. This encourages a larger range of species, adding diversity and additional interest for all types of recreation and sporting activities. Many species make regular use of the edge habitats for feeding due to higher herb layer productivity and larger invertebrate populations. A greater number of species inhabit the first 10 metres of any woodland edge or ride edge than inhabit the remainder of the woodland.

Wider rides are generally drier and therefore maintain a better surface for all year round access.

3. Designing open spaces to get the greatest wildlife benefit:

The key is to introduce as much sunlight into the open space as possible. Studies have shown that rides running on an east-west line are in sunlight longer than north-south rides. They warm up earlier in the year and cool down later. Warmth and sunlight promotes the greatest wildlife benefit.



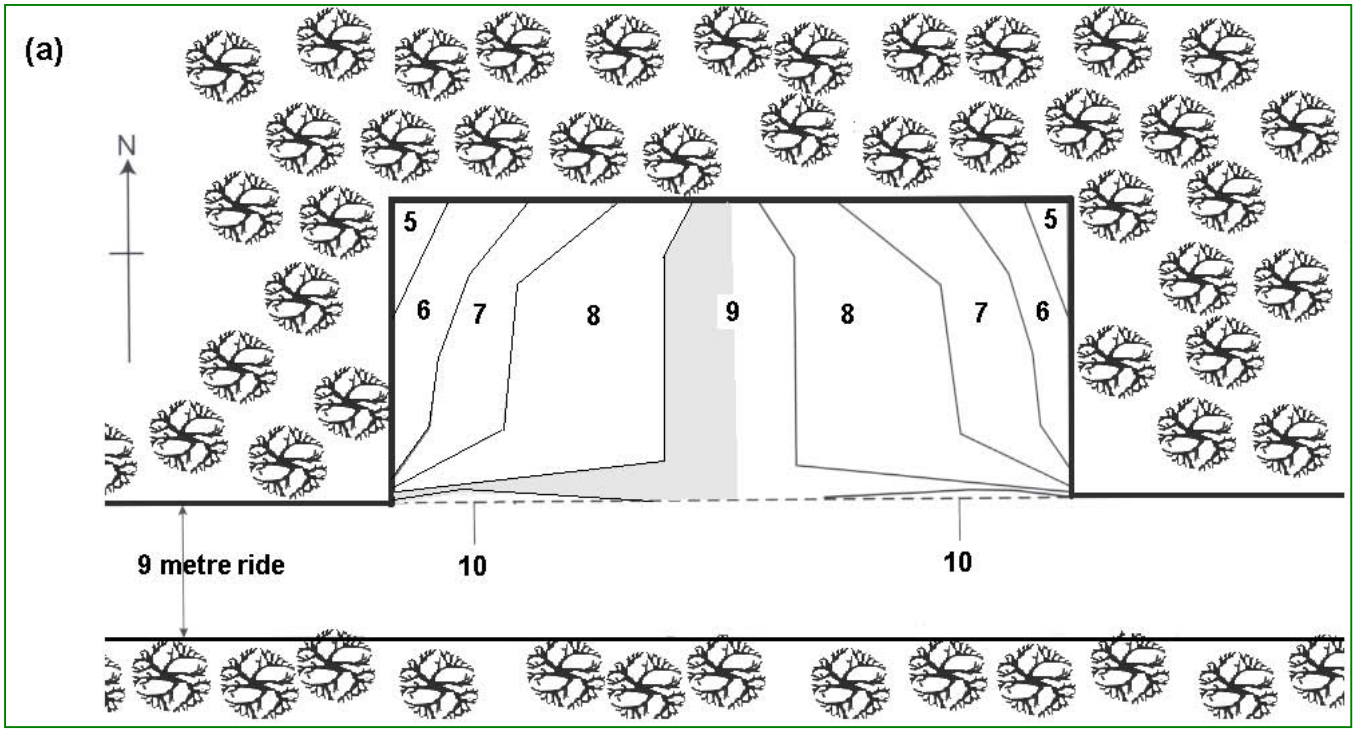
Be aware of the prevailing wind when opening rides to avoid making windy cold rides with a risk of encouraging wind damage to the wood.

Hours of sunlight:

Diagram (a) shows the hours of sunlight in a scallop created on an east-west ride from data taken in June. The adjacent trees are 15 metre tall and the scallops 24 x 50 metre.

Clearly when compared with the next diagram showing the same sized scallop on a north-south ride, the east-west ride receives up to twice the length of sunlight to that on the north-south ride. It is therefore better to concentrate efforts on the east-west rides in a woodland.

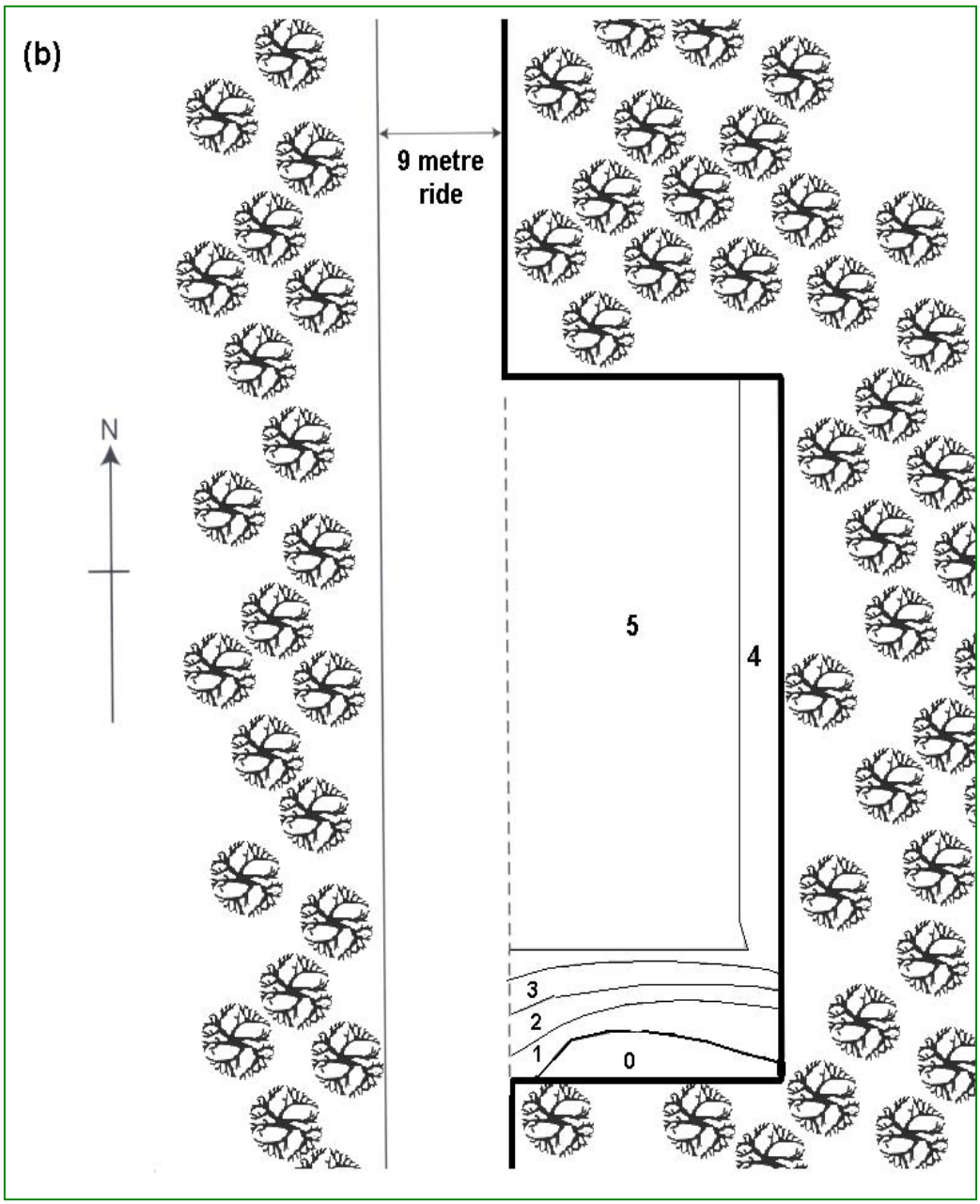
However, this benefit will soon be lost if the scallops are less than a tree height in width. Make sure you allow enough clearance for immature trees and shrubs to grow without shading over the scallop. When cutting out scallops those on the north side of the ride will receive the greatest sunlight hours to those on the south side.



Now compare diagram (a) with diagram (b), which shows a same sized scallop on a north-south ride.

Although a scallop on a north-south ride receives only half the amount of sunlight compared with that of an east-west ride there are still benefits for wildlife. The extra sunlight will increase the herbaceous element on the ride and offer additional warmth and protection from wind at the same time.

Diagram (b) shows the hours of sunlight in a scallop created on an north-south ride from data taken in June. The adjacent trees are 15 metre tall and the scallops 24 x 50 metre. The amount of sunlight within the scallop will not change whether the scallop is on the east or west side of the ride.



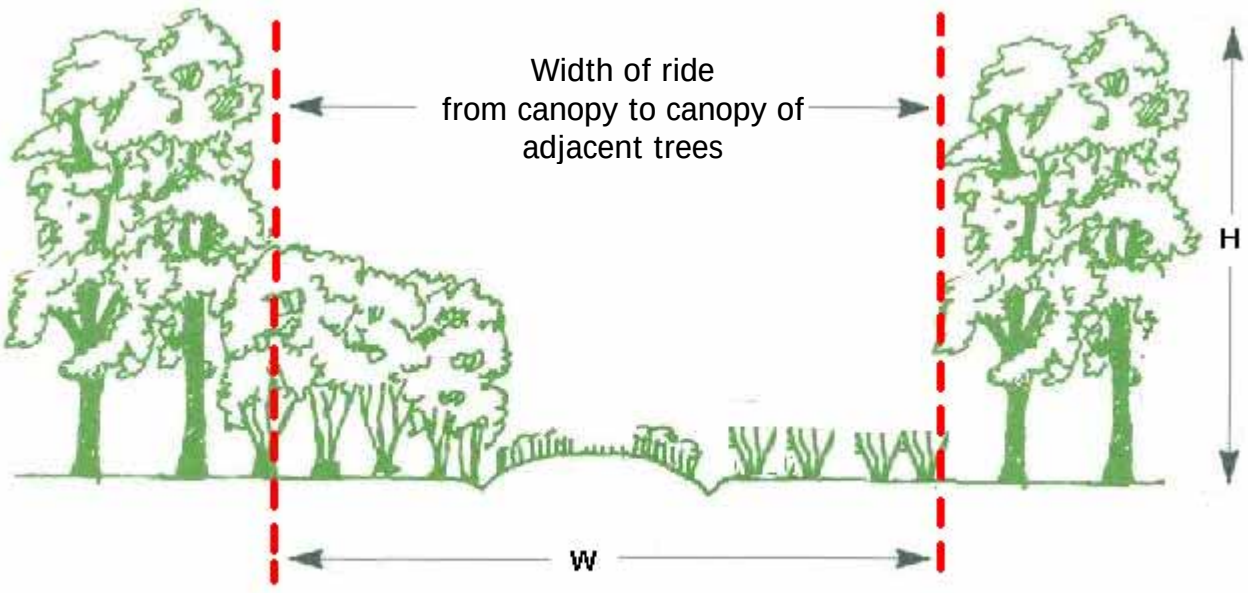
Ride design:

When choosing which rides are to be managed for wildlife benefit don't automatically pick on the largest existing ride(s) in a wood. You should survey all your rides first to establish which have the greatest potential.

With all ride creation or widening care must be taken to ensure that archeological features such as wood banks are not damaged.

The greatest benefit is gained when the depth of a ride is equal to or greater than the height of the adjacent canopy. Rides of less than this width quickly lose any benefit gained in the early years.

When creating rides in young woodland it is better to work to the expected height of the mature wood. This will ensure that the wildlife benefit extends into the future and does not diminish as the trees mature.

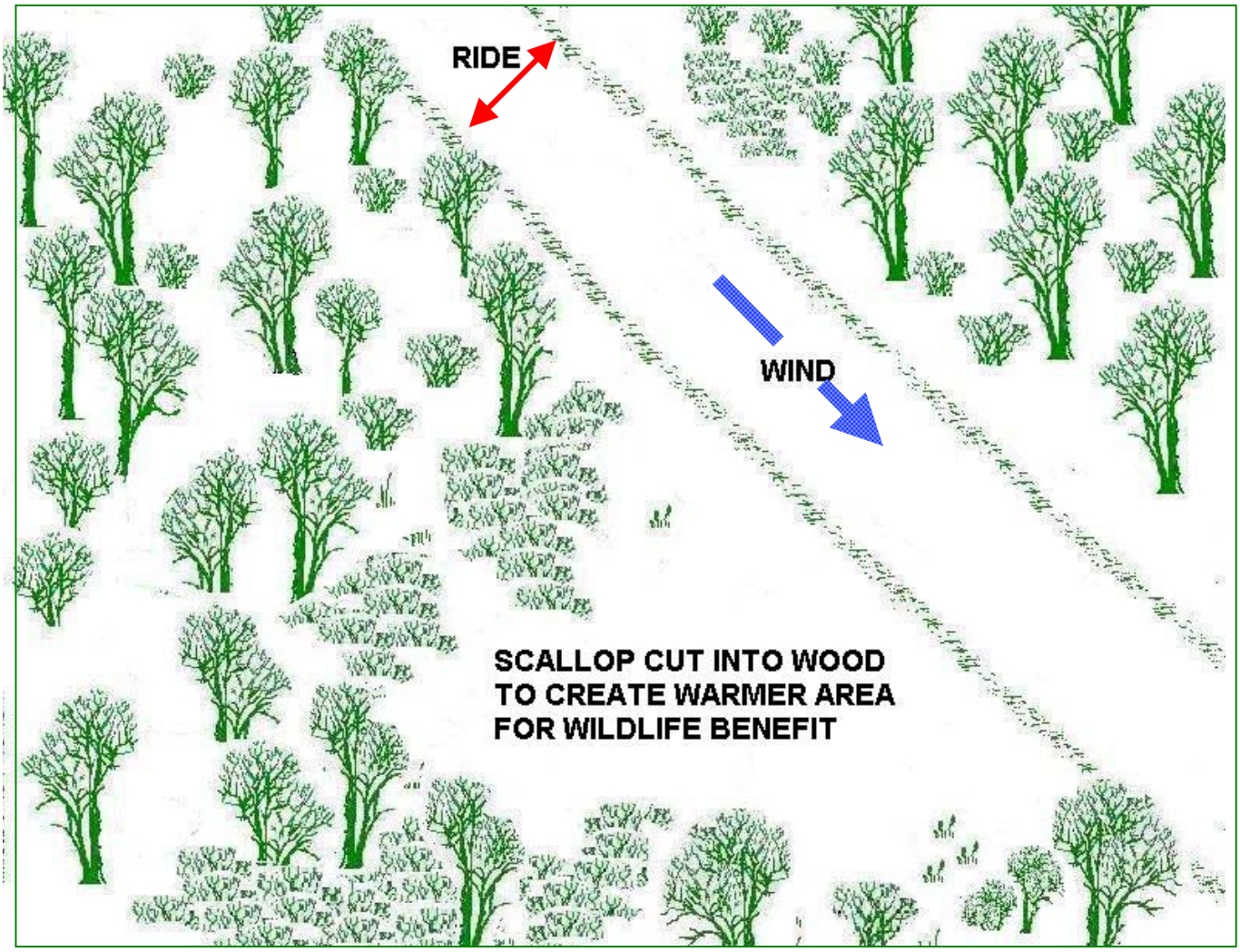


The diagram shows a ride where width (W) = height (H) x 1 ½

Diagram showing ride width

Avoid creating a wide ride with straight edges. The wildlife benefit will be far less than a ride with a wavy edging. The wavy edge maximises woodland edge, which in turn increases the habitat diversity.

You do not need to widen the whole length of a ride. Instead widen by creating a series of scallops alternating between the rides edges. By avoiding a long straight corridor the effect of wind funnelling is reduced and warmer sheltered pockets will be created within the open area.



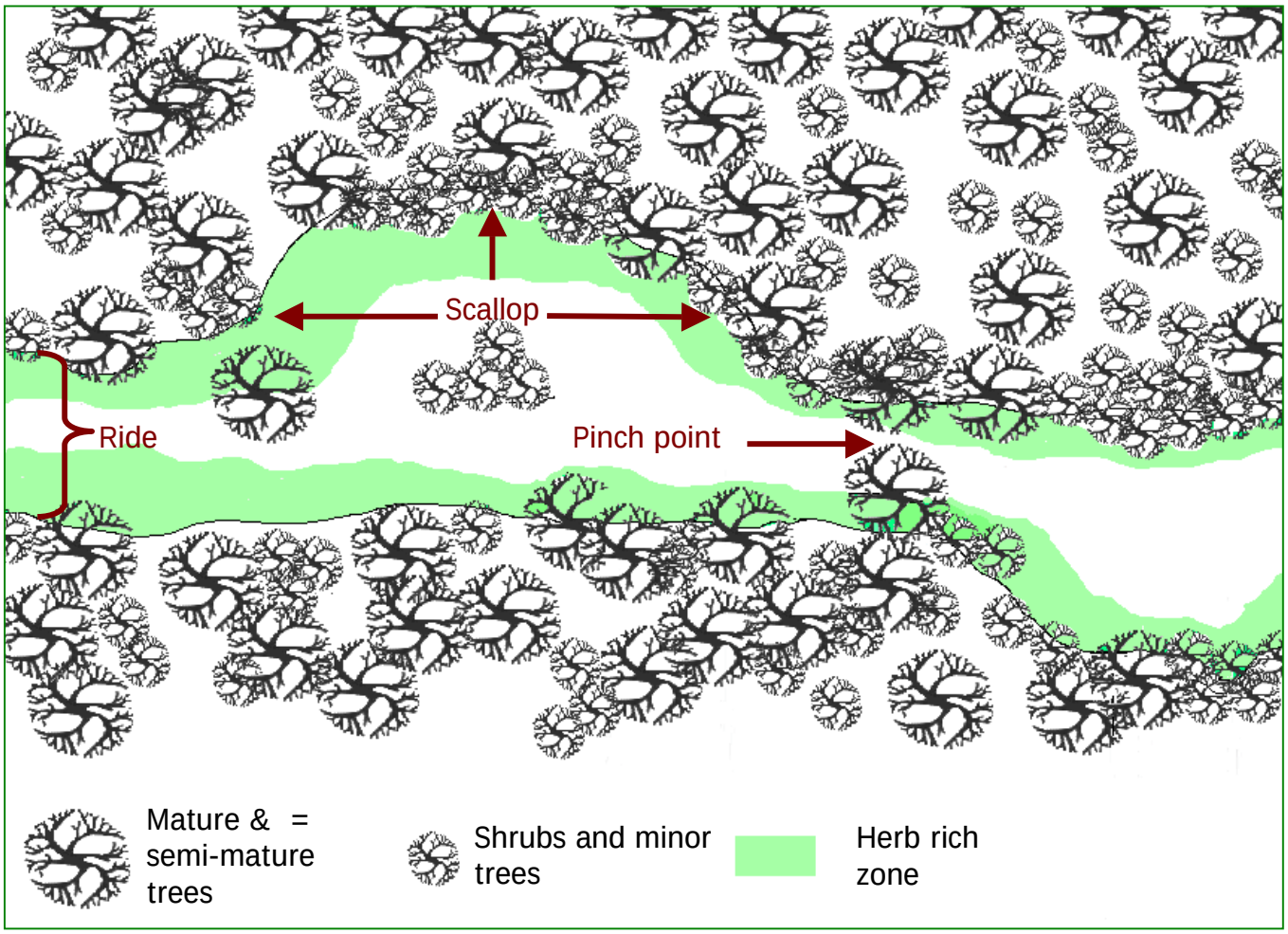
Felling alongside the ride in a scallop shape provides a site out of the wind where mammals, birds and insects can both feed and display.

Within the scallop native shrubs, bramble, wild rose etc. flourish providing small mammals and insects food plus valuable shelter from predators.

Before widening rides be aware of sensitive plant communities particularly in ancient woodlands. Many woodland species take hundreds of years to colonise a wood and can't compete with other more competitive vegetation such as grass. Avoid destroying the more sensitive species by positioning new scallops and rides away from them. Wood anemone and spurge laurel are two such species to be aware of when siting your rides and open areas.

In areas where dormice or red squirrel are present pinch points (where the canopies of trees on either side of a ride touch or come within 1.5 metres of each other) should be included at no more than 100-metre intervals. This is because they are arboreal mammals that generally do not like to travel along the ground and so require aerial runways to cross open spaces. A wide ride can cause population fragmentation and subsequent decline if links across them are not provided.

The diagram below shows how retaining occasional trees and shrubs within the herb zone and scallop provides variety and creates pinch points along a ride.



To avoid creating a wind tunnel in a wood the rides should not be widened right up to the edge of a wood. Stop any ride widening about 20 metres from a woodland edge.

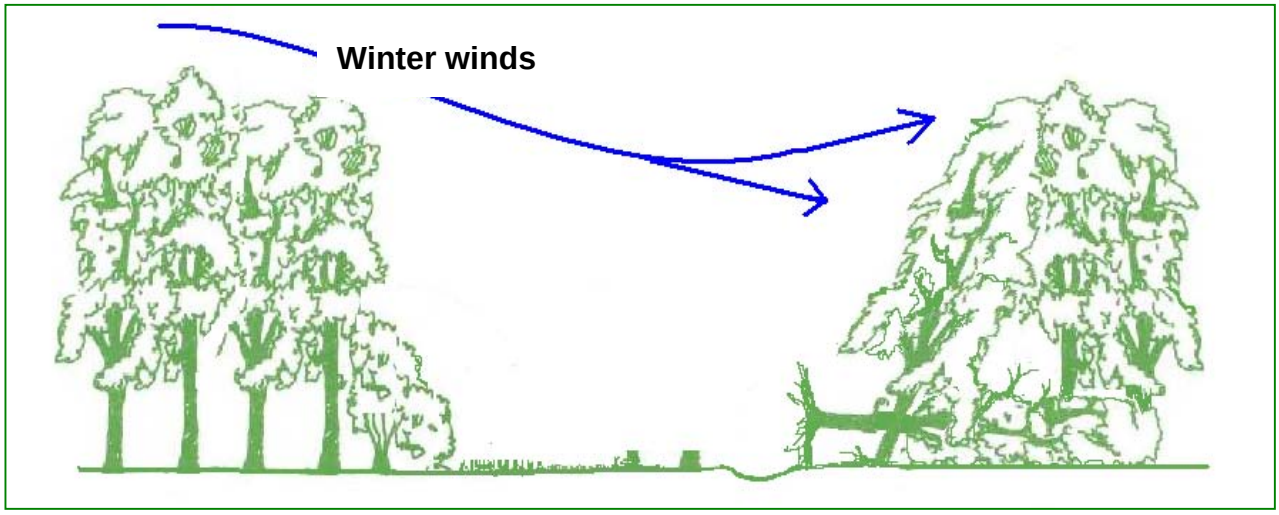
In areas of potential windblow great care must be exercised when selecting the rides for widening to avoid opening the wood to serious wind damage. Always fell the trees at the start of a growing season to

allow as much time for the new edge trees to become wind-firm before the autumn and winter gales start.

Establish from which direction the stronger winter winds normally blow before cutting any trees.

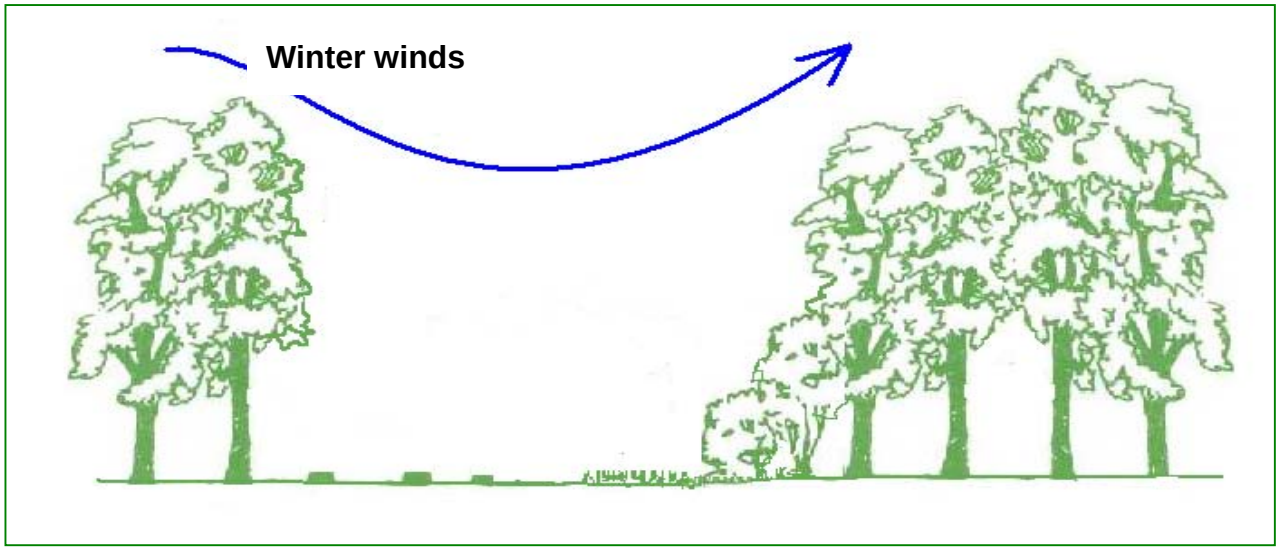
<u>The wrong choice</u> :

Removing the wind-firm trees takes away the wind-firm edge and allows wind to push over the unstable crop trees behind. Catastrophic blow could then occur.



<u>The right choice</u>:

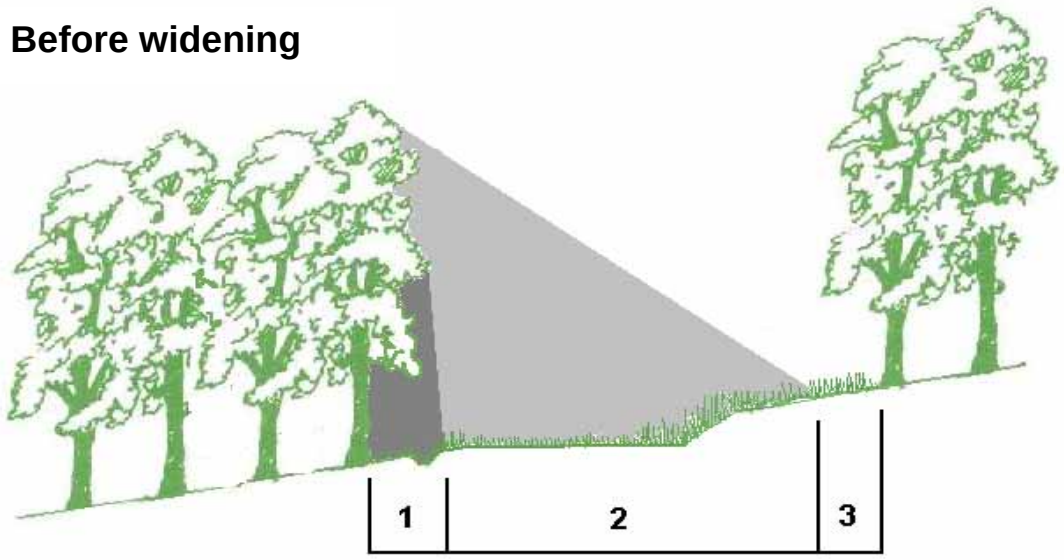
Retaining the wind-firm edge trees ensures that wind damage is limited. The weaker crop trees are still shielded from the winter winds and the wind is encouraged to flow over the tree tops as it did before the ride was widened.



Sloping ground:

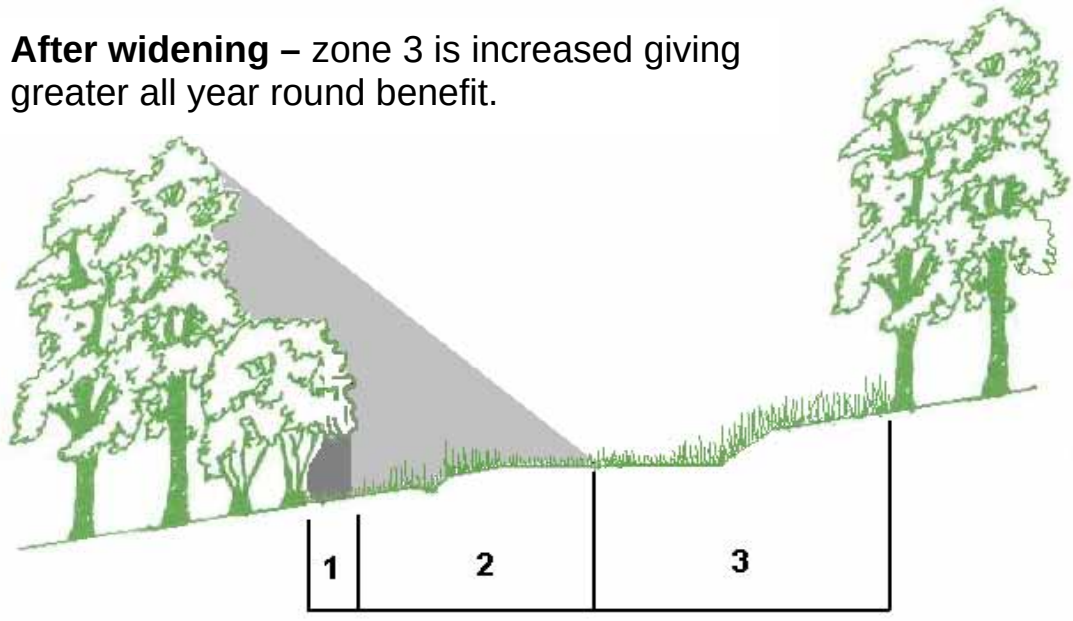
Where the woodland is on sloping ground, the trees on the shaded side of the ride should be felled to provide all-year round sunlight to the central part of to the ride.

Before widening



1 = shade all year **2 = shade in winter** **3 = light all year**

After widening – zone 3 is increased giving greater all year round benefit.



The opposite is the case when creating sunny glades or scalloped edges. By cutting away the trees on the sunny side of a ride more of the sunlight will reach the glade or scallop rather than the ride.

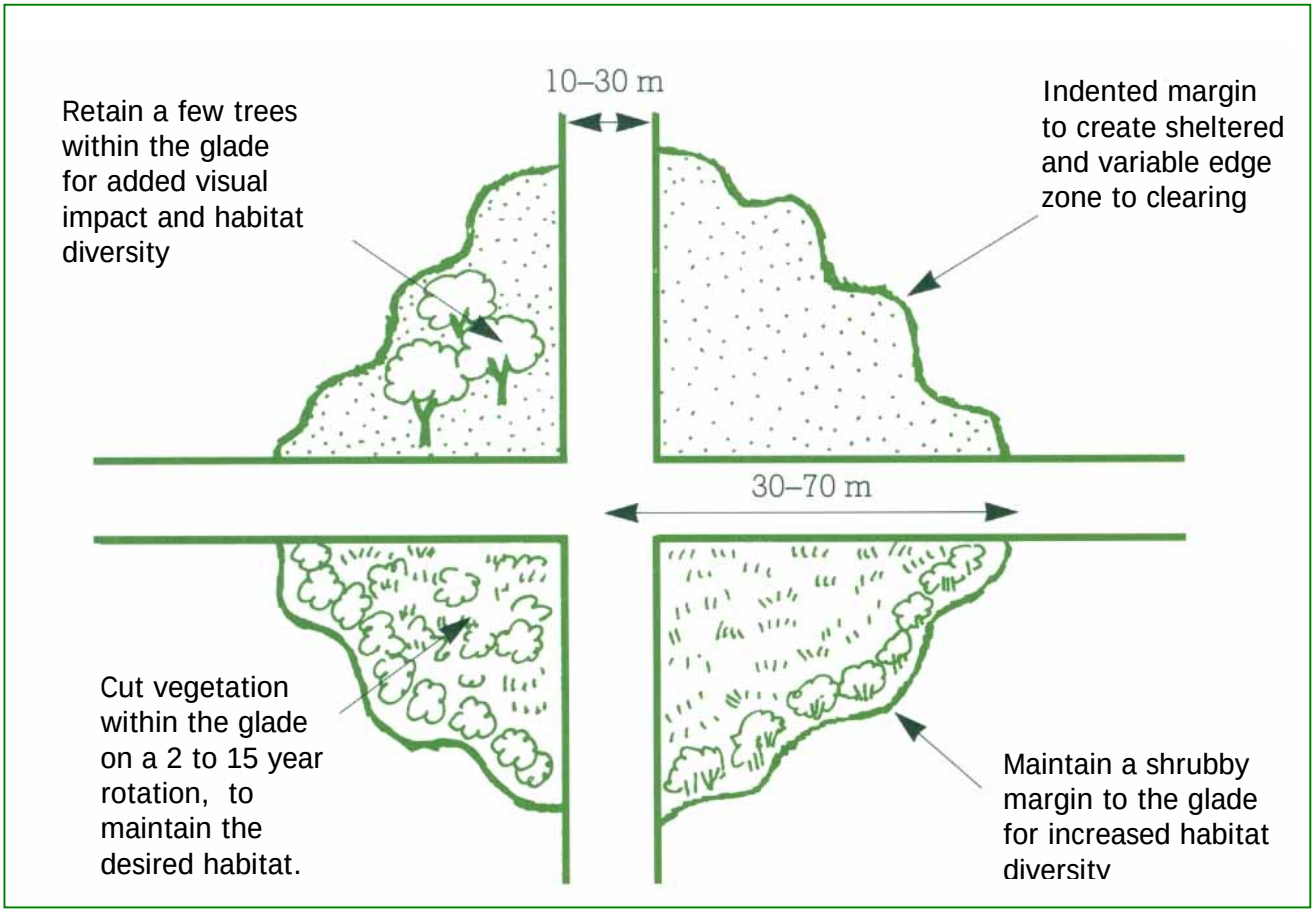
As part of good ride management, thinning of the woodland on either side of a ride would help to give further benefit.

In some circumstances to maximise the benefits it may also be necessary to group fell some of the ride-side trees to create an indented edge.

Junctions and glades:

Junctions where rides join can often easily be extended to make glades known as ‘box junctions’. It is often better, particularly in small woods, to improve junctions between rides rather than widen the entire ride, to avoid unacceptable loss of tree cover.

Diagram showing a box junction:



In small woods where it is not appropriate to create wide rides or box junctions there is no point in scaling down the prescriptions. Instead greater benefits can be gained by managing the woodland’s edge to create a graded transition from the open ground to high forest.

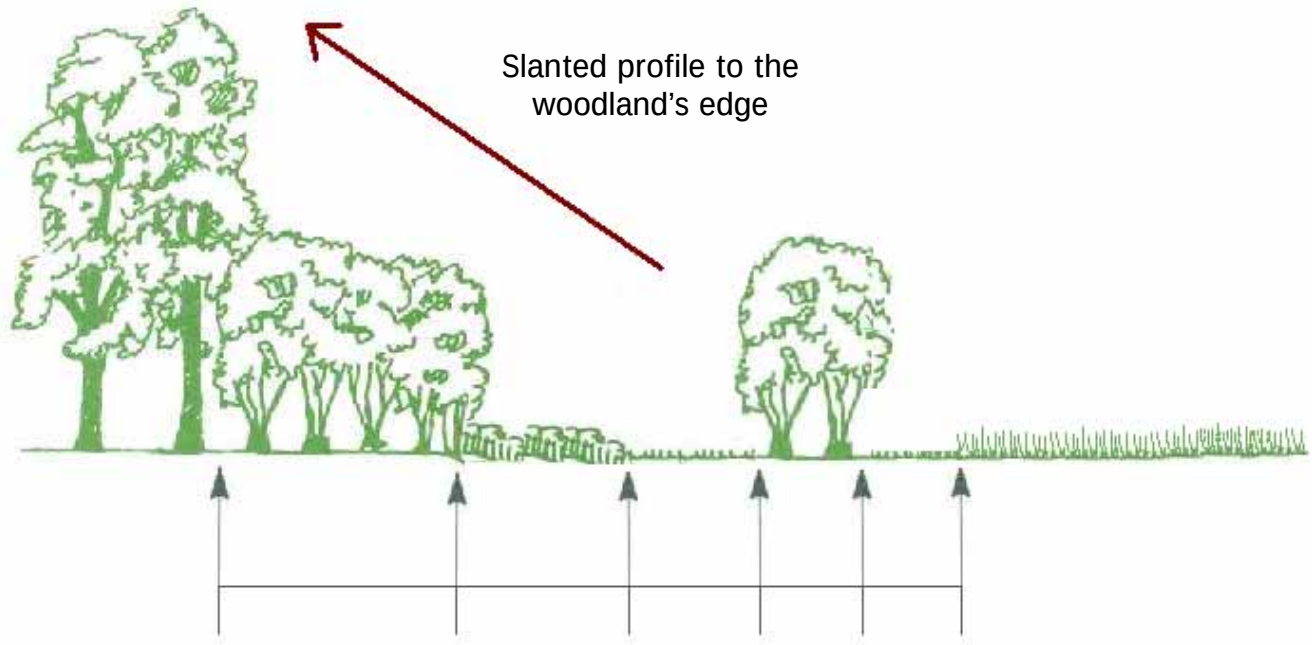
Woodland edges:

In order to maximise wildlife benefit in woodland the edge of a wood should be managed to create a graded profile with mixed habitats, in the same way as any rides within the wood itself.

Grading the edge also has the added benefit of reducing the chance of wind-throw within the wood. Inclusion of shrubs at the woodland's edge helps to filter the wind slowing it down as it passes into the wood. By slowing its progress less damage occurs but also the wind is warmed therefore making it more acceptable for the wildlife.

This approach also has benefits for farming by reducing shading and leaf fall of the cropped land.

Diagram showing a desirable woodland edge profile:



Grasses : an annually cut grass sward.
Herbs : a herbaceous sward cut on 2 to 3 year rotation to promote flowering plants.
Shrubs : a shrub zone cut on a 5 to 8 year cut to develop shrubby growth.
Field margin : this should be at least 2 metre.

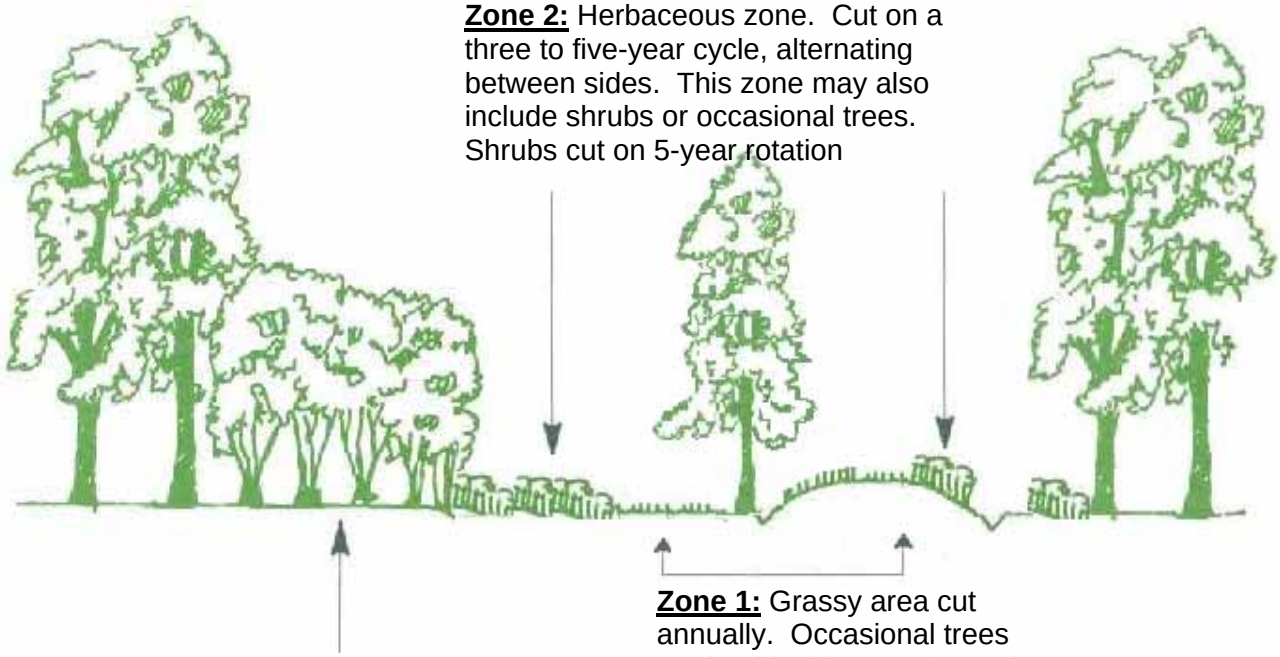
4. Managing the open spaces.

Once the areas for management have been identified, it is necessary to set out how they are to be managed. The first five years should be planned in detail with a more general plan for the longer term.

The open space should normally be split into three zones.

- An area that is mown annually. This should be centred over that part of the open space that will receive the greatest amount of sunlight. (See diagram).
- A herb / shrub zone cut once every three to five years.
- A transition zone between the herb / shrub zone to the high forest cut on an 8 to 20 year coppice rotation.

Diagram showing zones of habitat:



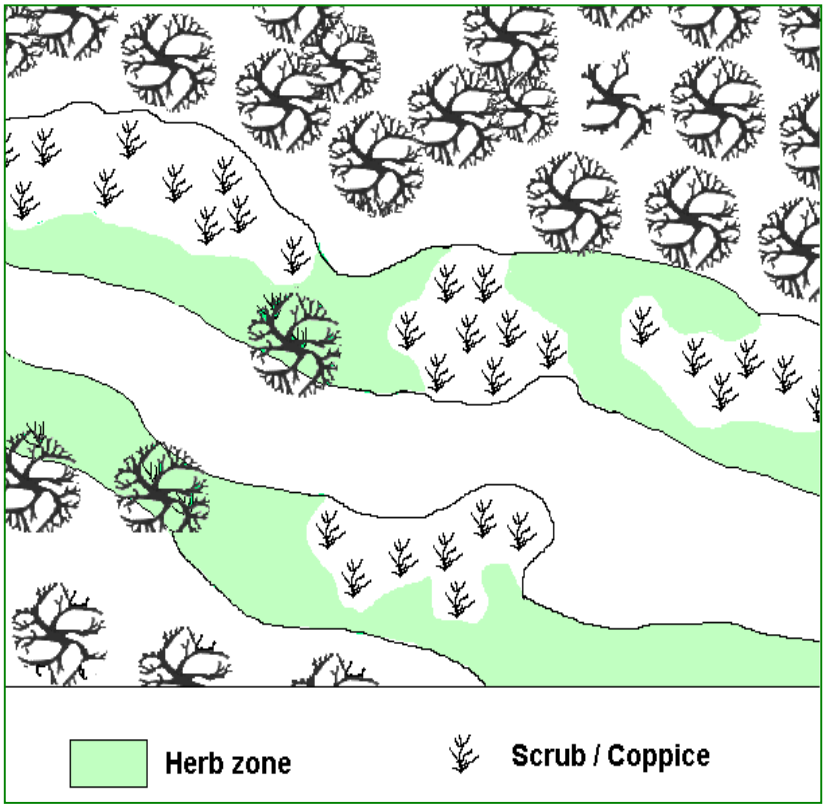
The diagram above shows a typical ride with a scallop. A similar approach should be used within glades.

In the case of the larger rides it is beneficial to create a patchwork of cut areas within zone 2 rather than cutting the whole of one side in a single year. Break zone 2 into smaller sections and cut every other section on both sides of the ride.

Mixed Zone Management:

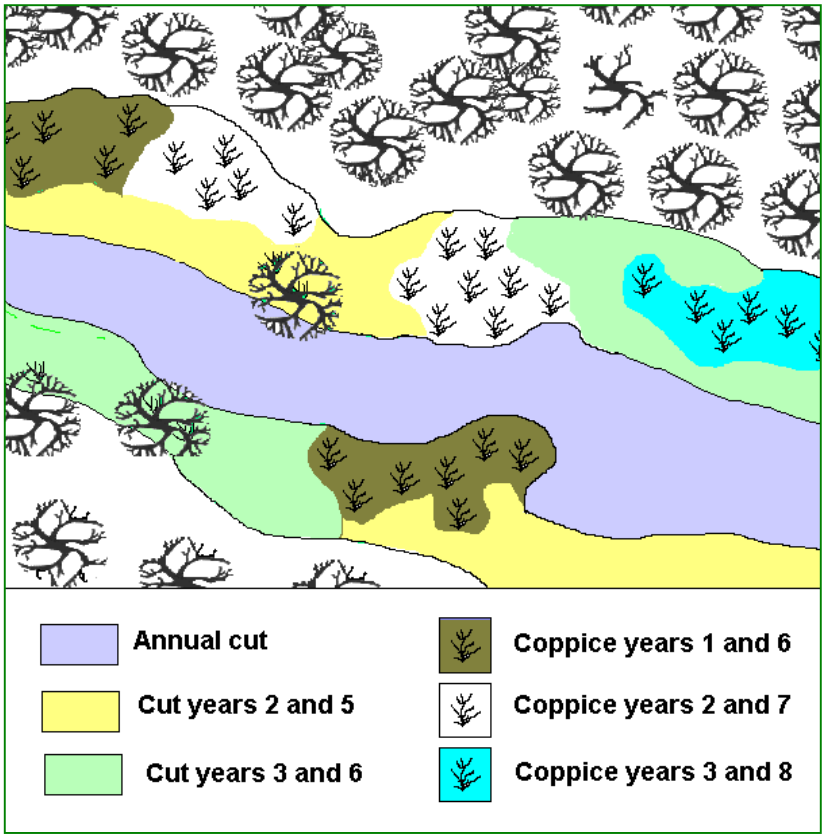
Some rides lend themselves better to mixed zone management. Where the shrub zone and the herbaceous zone are less defined ride management can be tailored to create greater structural diversity.

Zones 2 and 3 mixed together



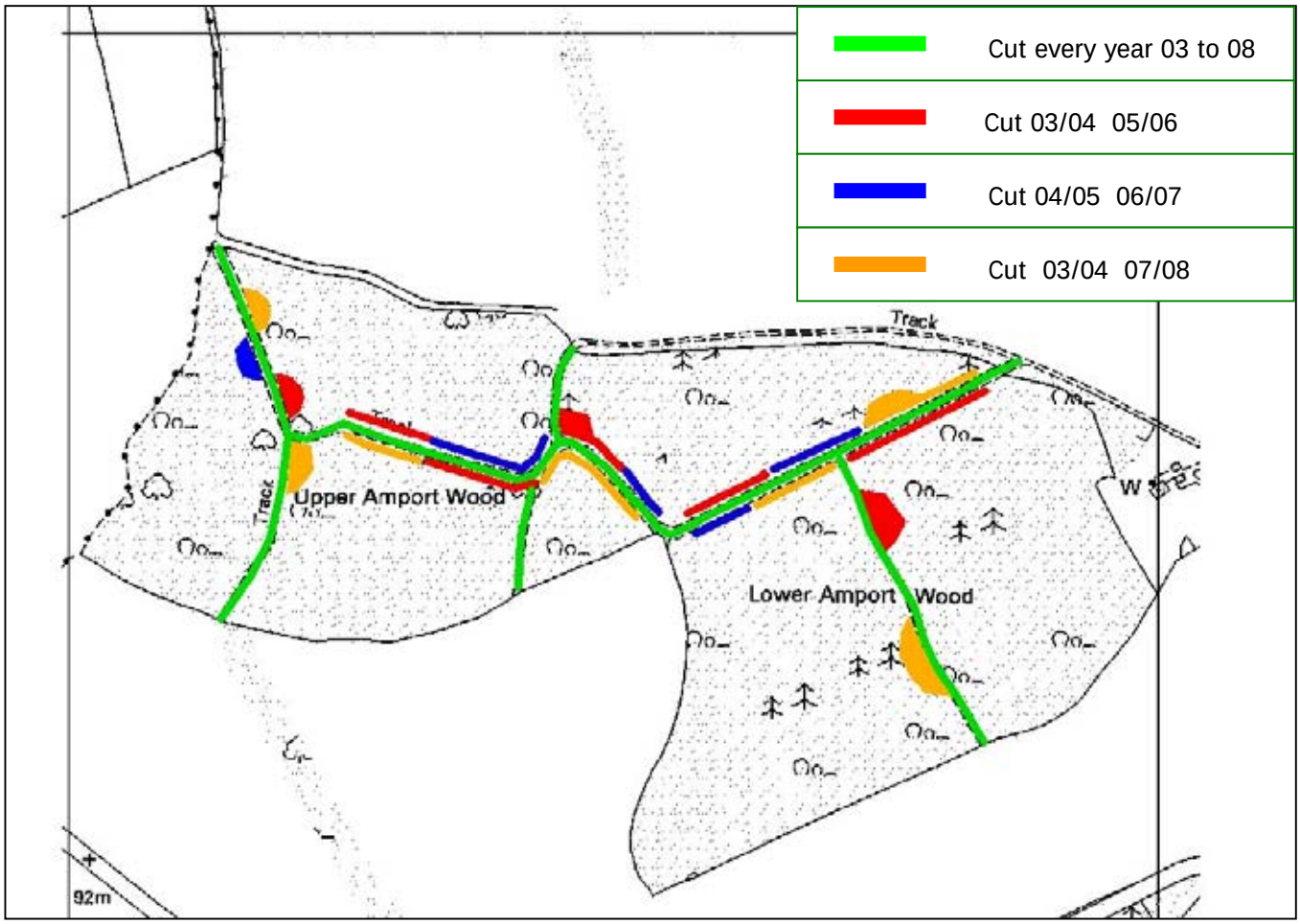
Management of mixed zones

To give more structural diversity to the ride each vegetation type (herb or coppice etc.) should be zoned down the length of the ride . Each zone can then be given different cutting years . This results in greater wildlife benefit.



Ride management should be formalised using a cutting plan produced on a map. This is handed to a tractor driver and should clearly show the areas that are to be cut each year of the five-year programme.

Example of a map for the ride and glade cutting programme.



In areas that are to be managed on rotation some cutting should take place **each year**. For example: 10% of the area within a 10-year rotation should be cut each year instead of one operation every 10 years. This ensures that there is the maximum diversity of habitat over the site and that at no time is any one habitat state missing from the wood.

Removal of the cut material from the ride.

It is not essential to remove cut material, but if you can manage some of the rides in this way even more diversity can be introduced into the woodland.

Removing cut material reduces the fertility of the soil on the ride if done over a period of years. Reducing the fertility inhibits the spread of the common more vigorous species, so allowing the rarer species which can grow in less fertile conditions space to grow and flourish .

5. Browsing – deer and rabbit.

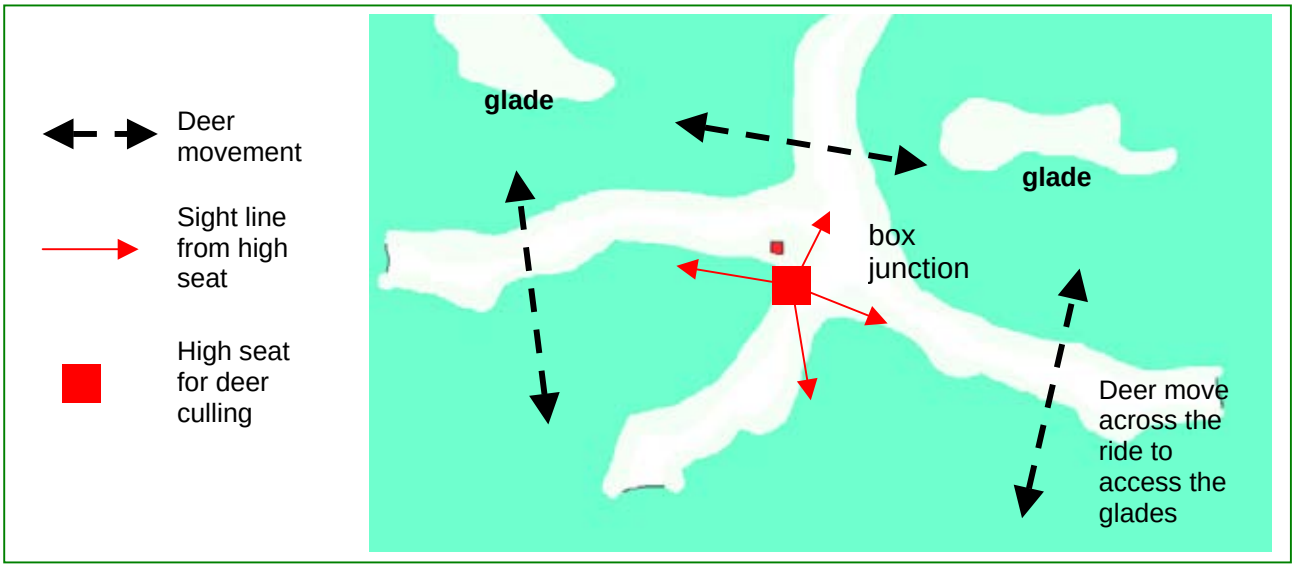
Deer:

Managing rides effectively will in most areas of the south-east require some form of deer control. Fencing will not generally be appropriate for a linear feature because of the prohibitive cost and restrictions caused to access and management. Temporary fencing can be an effective solution in the areas where the coppice zone is being cut. When deer control is required over a larger area culling is often the most practical method.

There is evidence that a very low deer population is actually beneficial to woods so eradication or exclusion is not therefore necessarily a desirable outcome.

Opening any ride network will provide a better environment in which to efficiently manage the deer population. BEFORE deciding how to lay out open ground within your wood talk to the person controlling the deer in your wood. Early planning will reduce the costs of deer control and ensure that the deer population can be managed.

Diagram showing a box junction and glade layout for deer control



The red box shows where a high seat can be placed in a box junction to facilitate deer control. By providing glades within the wood the deer will move across the rides to access the glades where they will normally graze. If the rides are wide enough there will be sufficient time when the deer is in the open to cull the deer.

Rabbit:

It is important to have the rabbit population under control otherwise the flowering plants within a ride can be seriously depleted by grazing. Rabbits can easily convert a species rich ride to a grass ride if the numbers become too great. They can also damage the shrub layer by browsing new shoots from any cut stumps.

Like deer rabbits in small numbers are beneficial in maintaining the open areas. Where they create patches of bare soil this will benefit other wildlife such as lizards and snakes.

6. Invasive weeds:

Open areas are suitable ground to be colonised by plants such as bracken, laurel, Japanese honeysuckle, ragwort, soft thistle and rhododendron. These species will quickly invade any newly opened area and compete with the more beneficial flora. As most of the more beneficial woodland and grassland species do not compete well due to their lack of vigour invasive weed species soon take over. Management should take into account these species and be aimed at stopping their spread into the open areas.

7. Grants:

Grants may be available from the Forestry Commission for ride and glade creation, improvement and management. Consult your local office for further information. Contact details appear at the end of this document.

Further Reading

Forestry Commission Publications

England Forestry Strategy - A New Focus for England's Woodlands

The UK Forestry Standard - The Government's Approach to Sustainable Forestry

Forest Practice Guides
"The Management of Semi-Natural Woodlands":

Guide 1 - Lowland Acid Beech and Oak Woods
Guide 2 - Lowland Beech-Ash woodlands
Guide 3 - Lowland Mixed Broadleaved Woods
Guide 4 - Upland Mixed Ash Woods
Guide 5 - Upland Oakwoods
Guide 6 - Upland Birchwoods
Guide 7 - Native Pinewoods
Guide 8 - Wet Woodlands
Forest Practice Guide 9 - Forest Operation and Badger Sets

Forestry Commission Guidelines:
Forest landscape Design
Lowland Landscape Design
Forests and Water (Third edition)
Forest Nature Conservation
Forests and Archaeology
Forest Recreation

Forestry Practice Guide: Forest Design Planning - A Guide to Good Practice (1998)

Managing Rides, Roadsides and Edge Habitats in Lowland Forests (2000) - Forestry Commission Bulletin 123

Urban Forestry Practice - Forestry Commission Handbook 5

Creating and Managing Woodlands around Towns - Forestry Commission Handbook 11

The Use of Herbicides in the Forest (1995 edition) - Field Book 8

Diseases and Disorders of Forest Trees - Field Book 16
(A guide to identifying causes of ill-health in woods and plantations)
S.C. Gregory and D.B. Redfern

All the above are available from Forestry Commission Publications, PO Box 25, Wetherby, West Yorkshire LS23 7EW Telephone: 0870 121 4180 Fax: 0870 121 4181 Email: forestry@twoten.press.net

See also the FC website: **www.forestry.gov.uk**

Non – FC Publications

DETR – Tree Preservation Orders – A Guide to the Law and Good Practice (Published March 2000 ISBN 1 85112 361 X)

Woodland Rides and Glades: Their Management for Wildlife ISBN 187 370 1330

Coppiced Woodlands: Their Management for Wildlife
ISBN 187 370 1322
(Both reprinted by the Joint Nature Conservation Council)

Trees and Woodland in the British Landscape - Oliver Rackham
Published by JM Dent and Sons - London ISBN 0297816233

Two useful books in the “Britain’s ancient Woodland” set produced by English Nature:

Woodland Management and Nature Conservation *by Charles Watkins* ISBN 0 71539436-4

Woodland Heritage *by Peter Marren* ISBN 0 71539436- 3

(Both originally published by “David and Charles” - Newton Abbot but currently out of print)

Ecology and Management of Coppice Woodlands Edited *by GP Buckley* Published by Chapman and Hall ISBN 0 41243110-6

Practical Advice on Woodland Management:

Woodlands: a Practical Conservation Handbook *Published by the British Trust for Conservation Volunteers* ISBN 0 95016437-2

How to Contact the South East England Conservancy Team

For Surrey, Hampshire, West Sussex or the Isle of Wight:

Forestry Commission, South East England Conservancy, Alice Holt, Wrecclesham, Farnham, Surrey, GU10 4LF,
Tel: 01420 23337

For Kent or East Sussex:

Forestry Commission, South East England Conservancy, Area Office, Park Lane, Goudhurst, Cranbrook, Kent, TN17 2SL
Tel: 01580 211123

For Oxfordshire, Berkshire or Buckinghamshire:

Forestry Commission, South East England Conservancy, Area Office, Upper Icknield Way, Aston Clinton, Aylesbury, Buckinghamshire HP22 5NF
Tel: 01296 696543. Fax: 01296 696662

Produced by: P.C. Stephens for the Forestry Commission July 2005.
Background data used to compile this advice document was taken from FC Bulletin 123 listed above.