

## GUIDELINE NOTE

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### INTRODUCTION

Short rotation coppice (SRC) for use as a source of renewable energy has potential for expansion. It can offer benefits for growers, developers, consumers, local communities and the environment. However, as it is a new element within the landscape, its introduction and management requires care. The British landscape has evolved over many centuries and is highly valued for its variety and local distinctiveness; it is therefore important to assess the potential impact of proposed changes.

This Note outlines the main landscape considerations that need to be taken into account when planning the establishment of SRC, and provides advice to growers on the ways in which an area of coppice can be designed to blend in with the rest of the landscape. The Note has been prepared following a review of practice on the ground, and it expands on the guidance given in the *Lowland Landscape Design Guidelines*. This publication should also be consulted as it provides advice covering the wider aspects of forest and woodland design.

As SRC planting falls within the scope of the Environmental Impact Assessment Regulations for forestry, consent from the Forestry Commission will be required. Where there is a likelihood of significant impact on the environment, project proposers will be asked to submit additional supporting information in the form of an Environmental Statement.

### CHARACTERISTICS OF SHORT ROTATION COPPICE IN THE LANDSCAPE

Willow is the main tree species grown for SRC though poplar may also be used. They are essentially lowland crops and can be grown on a range of land types. Crops are established by planting cuttings in cultivated ground. The stems are harvested by cutting 5–10 cms above ground level at intervals of 2–4 years.



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**Figure 1**

Short rotation coppice looks very different from most woodland types found in the landscape.

After cutting, the stem base or *coppice stool* quickly produces new coppice shoots. The expected productive life of an SRC crop is up to 25 years. At the end of the period sites can be used again for arable or grassland production.

SRC has some characteristics of woodland:

- it grows tall enough to create a 3-dimensional mass in the landscape and, unlike most conventional field crops, may impede views;
- the rate of change in a landscape, particularly associated with harvesting, can be rapid;
- its colour and texture are more like trees than field crops and it reflects seasonal changes in the same way as woodland;
- all age classes can be represented by phasing planting and harvesting.

However, because it is fast growing, visual changes take place more rapidly than in conventional coppice or woodland.

SRC might not cause visual problems in some landscapes but in others care will be needed both in the siting of the crops and in the way in which they are managed.

# INTRODUCING SHORT ROTATION COPPICE TO THE LANDSCAPE

## Site selection

The first consideration must be the suitability of the proposed location. This largely depends on the current character and sensitivity of the landscape. Information on landscape character is widely available and should be consulted before proposals are developed.

- **In England**

Refer to *The Character of England: landscape, wildlife & natural features* published by English Nature and the Countryside Commission.

- **In Wales**

Refer to the *LANDMAP Technical Manual* (in prep) which will be published by the Countryside Council for Wales.

- **In Scotland**

Refer to the regional *Landscape Character Assessments* (LCAs) published by Scottish Natural Heritage.

- Various county or regional assessments produced by local authorities.

Advice on how to use these sources of information can be obtained from the relevant agency, local authority or Conservancy Office of the Forestry Commission.

In general terms, lowland landscapes with high levels of tree and woodland cover and arable or mixed farming are most suitable for SRC. It is also important to remember that cropping is heavily mechanised and requires land suitable for mechanical operations: this excludes steep or boggy ground.

The following section summarises the main factors to be considered, and notes some of the implications of siting SRC in different landscape types. However it must be emphasised that these are broad recommendations only. It is still vitally important to consider each local area on its own merits and assess the opportunities and constraints it presents. Some of the important questions to consider when selecting a site are listed opposite.

## What are the characteristics of the surrounding landscape?

- Is the enclosure pattern created by hedges and hedgerow trees dominant, or is the landform itself dominant?

*These are the main features that influence landscape character and sensitivity; see Table 1 for a description of different landscape types and a summary of location and design considerations.*

## How sensitive is the landscape to the introduction of SRC?

- Where will the SRC be seen from?

*Generally, the more visible a location, and the more people who are likely to see it (from settlements, roads and paths), the more sensitive it is.*

## Is the SRC to be introduced on a large scale?

- If so, how can its impact be controlled so that it blends into the surrounding landscape?

*Saturation of the landscape by monotonous planting should be avoided (see page 6).*

## Is the SRC to be established in a sensitive area, e.g. along a public right of way, roadside or near houses?

- If so, what measures can be taken to make the SRC acceptable?

*A solid wall of coppice that blocks views can be a very negative feature. See pages 6–8 for design considerations in these areas.*

## Does the proposed planting area have sites that are important for the conservation of wildlife, or does it include archaeological or historic features?

- If so, could they be incorporated in unplanted areas of the crop?

Table 1 opposite, and the figures on pages 4–6 provide detailed guidance on how to assess landscape character and give advice on design options.

**Table 1** Landscape character and design considerations

Landscape type	Characteristics	Landscape sensitivity	Location and design considerations
Enclosed  (see Figures 2, 3 & 4)	Hedges and hedgerow trees create a pattern more dominant than the landform  Significant woodland cover interspersed with fields  Relatively small scale, short to medium distance views  High visual and ecological diversity	Trees and hedges restrict visibility  Most sensitive locations may be along roads, paths or next to houses  SRC may be well concealed by field boundaries	<ul style="list-style-type: none"> <li>• Plant at field scale</li> <li>• Regular field scale harvesting in rotation will maintain diversity within landscape</li> <li>• There may be opportunities to enhance gappy hedges and plant additional trees within the hedgerows, during the life of the SRC crop.</li> </ul>
Open with flat topography  (see Figures 6, 7 & 9)	Few enclosing features  Landscape scale is large  Visual diversity is low	Extensive views across open land may mean that SRC has a low visual impact if it occupies middle or background views  Landscape has the capacity to absorb extensive areas of planting	<ul style="list-style-type: none"> <li>• Large scale planting is appropriate, with rotational harvesting also in large units, forming an interlocking pattern</li> <li>• Reduce the scale of harvesting units towards edges to enhance visual interest</li> <li>• Include and maintain strategically sited open areas along edges to provide a sense of depth</li> <li>• Link with small scale woodlands and other features in the landscape, where present</li> </ul>
Open with undulating and rolling topography  (see Figures 5 & 8)	Landform is dominant  Few enclosing features  Landscape scale medium to large	Capacity to absorb medium to large scale planting linked to landform shapes.  Views are controlled by height of undulations, may be extensive from vantage points, but otherwise limited.	<ul style="list-style-type: none"> <li>• Identify the main landscape features in the topography (ridges and low points). Aim to link planting pattern to them, where ownership allows</li> <li>• Planting on lower lying areas will have lowest impact</li> <li>• Aim for larger planting and harvesting units towards high points, decrease scale at lower elevations</li> <li>• Plant bold interlocking shapes, using landform as a guide rather than the field pattern</li> <li>• Link into any established woods, where possible</li> </ul>
Slopes  (see Figure 10)	Might contain woodland on lower slopes, associated with watercourses  The field pattern may be significant  Scale is medium to small  High ecological and visual diversity	Might be highly visible, especially from elevated view points  Highly sensitive to change if overlooked	<ul style="list-style-type: none"> <li>• Identify existing features within landscape and link SRC planting to these, e.g. other woodland, watercourses</li> <li>• Aim for irregular patterns of planting, e.g. staggered rather than obvious geometric blocks</li> </ul>



**Figure 2**

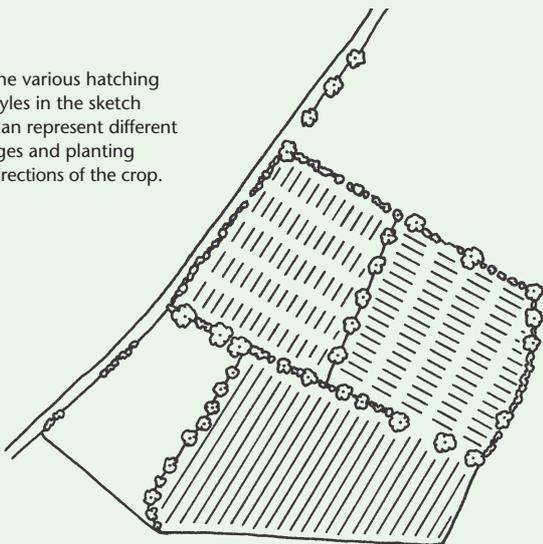
A fairly flat landscape where the crowns of the mature hedgerow trees contain the views and give a sense of enclosure. Views only extend to one or two fields in depth.



**Figure 3**

This example of short rotation coppice in a strongly enclosed landscape fits in well. The retained field in the foreground maintains a degree of openness and the mature hedgerow trees break up the edge.

The various hatching styles in the sketch plan represent different ages and planting directions of the crop.



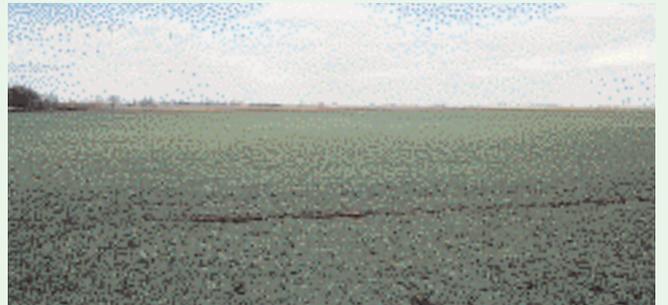
**Figure 4**

This sketch plan shows some key aspects of phasing short rotation coppice layout in a hedgerow landscape. Any variation between the fields, restoration of hedges, retention of some fields along a roadside and some extra hedgerow trees all help to fit the short rotation coppice into its setting without affecting practical operations.



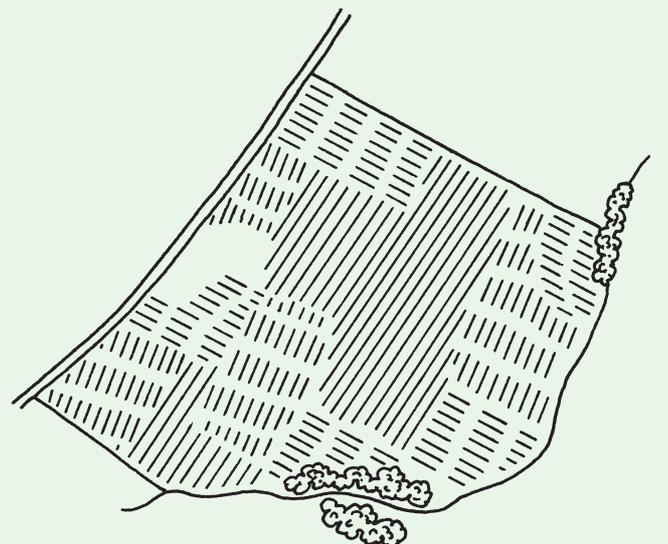
**Figure 5**

An example of short rotation coppice planting on an undulating landform. It occupies the area enclosed by the road and is connected to existing woodland. This gives the planting a curving boundary which fits in well with the topography.



**Figure 6**

A flat, green landscape of large scale and few features. Large areas of short rotation coppice in the middle or background of this scene would fit into it quite easily.



**Figure 7**

This sketch plan shows some key aspects of phasing short rotation coppice layout in an open landscape. Open spaces retained along roadsides, links to features such as small woody areas and streams, and varied ages and sizes of cutting areas, especially near edges, help to create diversity.

**Figure 8**



a. An example of a rounded, hilly landscape where landform is more dominant than the enclosure pattern. Existing woods and tree clumps in the valley bottoms provide potential linkages to short rotation coppice.

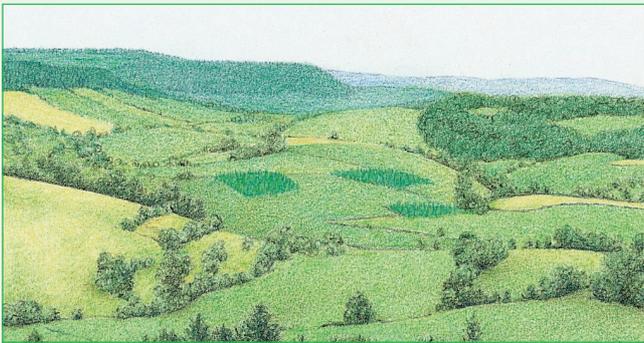
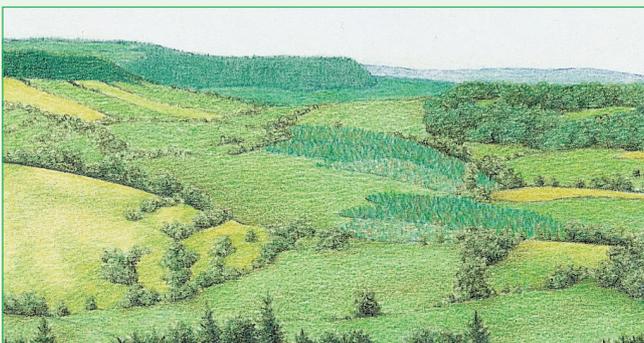


Illustration: Carol Bramley

b. Small scale geometric plantings of short rotation coppice on top of the convex landforms appear to float.



c. Plantings located in the valleys and linked to existing features fit into the scene much better, while occupying a larger overall area than that shown in b.



d. In this option, part of some larger scale plantings occupy most of a convexity, and thus respond to landform, while the rest is located in the valley and is linked to existing woodland.

**Figure 9**



a. An open, undulating, large scale landscape. Some existing woodlands provide limited opportunities to link short rotation coppice into the scene.



Illustration: Carol Bramley

b. Small, isolated areas of short rotation coppice do not relate to the overall pattern and are too small in scale.



c. Larger scale areas of varying size, positioned near to each other, look much better.

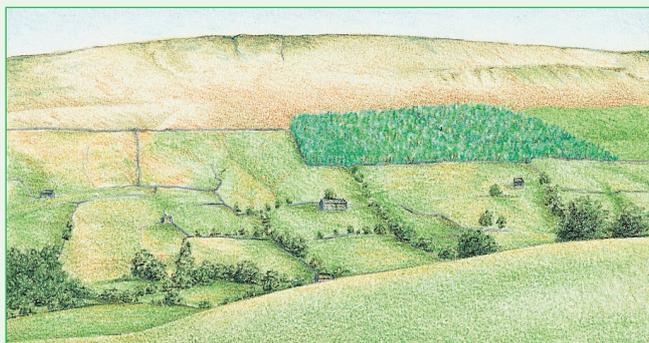


d. Extensions from the existing woodlands develop the pattern and retain the open qualities of the landscape.

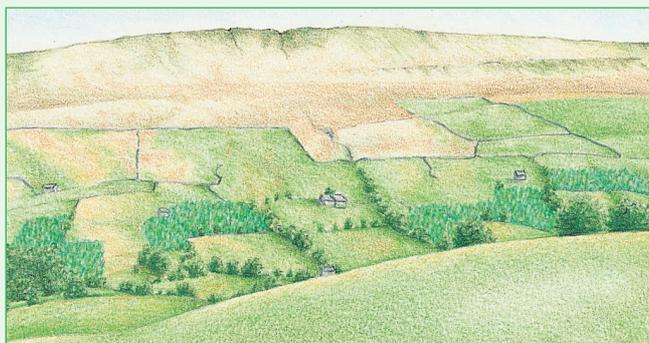
**Figure 10**



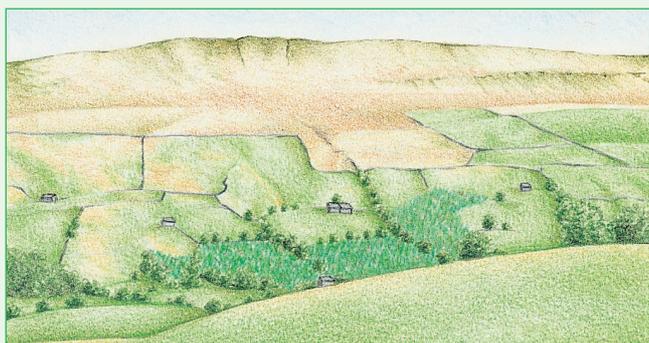
a. These very visible slopes have a rectilinear pattern of walls and some existing woodland. The soil on the lower slopes is more fertile than that higher up.



b. Planting to a rectangular field pattern imposes an unnatural, angular shape that seems to float in this landscape. Analysis of the dominant features suggests that the landform and woodland pattern are more important influences than the field pattern.



c. An alternative layout that uses the field pattern in an informal way, with staggered, interlocking shapes linked to the existing woodland.



d. An option that extends the character of the existing woodland pattern.

## INTRODUCING SHORT ROTATION COPPICE ON A LARGER SCALE

The impact of the crop on the landscape will increase if whole farms or substantial parts of farms are planted. There is a risk that the diversity of the landscape will be reduced and that it will appear saturated.

Where planting takes place on a large scale, it is more important to recognise the characteristics of the landscape and take them into account in the design of the schemes. Enclosure, openness and landform type will all have an influence. The visibility of the landscape and its sensitivity to change may also need to be taken into account. It is important to build diversity into large scale planting by varying age structure and introducing open space, so that the crop is subdivided at a scale that suits the particular landscape type. Some landscapes, such as parkland and historic designed landscapes, may be unsuitable for the introduction of coppice on any significant scale.

## DESIGN IN SENSITIVE LOCATIONS

### Near public rights of way, access routes and roadsides

More detailed design may be necessary in areas well used by the public:

- identify any features that could be used to create interest along the route, such as archaeological sites, water features, old buildings or trees and retain views to them;
- identify any elevated points that afford views to the surrounding landscape and keep planting edges well back from them in order to maintain visibility;
- on longer routes, shape the edges of the plantation by including some unplanted areas, and vary the structure of the crop with smaller scale cutting areas along the path or roadside;
- keep planting edges back from paths for a distance of between 0.5 to 1.5 times the height of the mature

crop as SRC can be tall and impenetrable when it is ready for harvesting.

- consider planting some more permanent features, such as clumps of shrubs, to provide diversity and interest. These should be of a suitable scale and location so that they do not have a negative impact on the landscape when the SRC crop is removed. Leave adequate space around shrubs so that they are not shaded by the crop or damaged during mechanical operations.

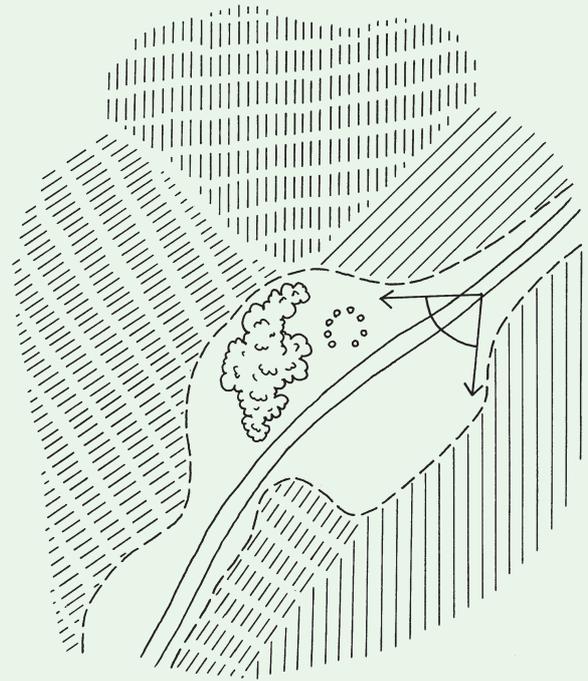
**Figure 11**



a. A track or ride running through an area of coppice. If this was a public right of way it would be helpful to make it more interesting to walk along.



b. This edge of short rotation coppice is set back from a stream. The existing streamside vegetation and the slightly varied edge and curving alignment produces a more interesting path route along the stream banks.



**Figure 12**

This sketch plan shows some key aspects of short rotation coppice layout along roads and paths. They include varying the shape of the space occupied by the road or path, phasing timings of cuttings to provide structural diversity, and retaining or adding views and small features of interest.

### Near housing

As SRC reaches maturity, it will create a strong enclosing effect, followed by rapid change at harvesting:

- leave plenty of space between the SRC and adjacent housing (as a rough guide, the gap should be at least 1.5 times the height of the mature crop) to avoid shading;
- vary the cutting cycle near houses to control the scale of changes;
- integrate some additional open areas to allow views of the crop edge, and to create a 3-dimensional pattern rather than a solid wall;

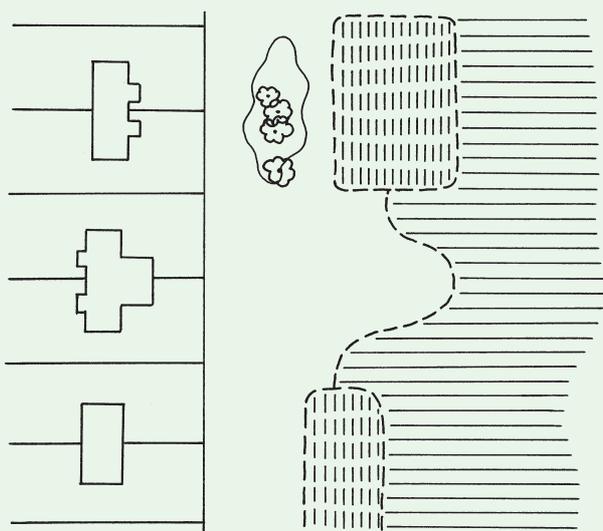
- introduce clumps of shrubs and small trees where space allows and where they can be allowed to grow on at the end of the life of the SRC crop; favour native species that could attract wildlife.
- Link any rights of way that pass through the coppice to the surrounding access network.



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**Figure 13**

This short rotation coppice has been planted too close to a house.



**Figure 14**

This sketch plan illustrates some key aspects of short rotation coppice layout near houses. They include keeping the short rotation coppice well back from the houses (1.5 times the height of the tallest coppice), and varying the edge shape and structure.

## REFERENCES & FURTHER READING

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