

Chapter 17: Coppice

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17.0 Coppice

17.1 Background

Coppicing is probably the earliest form of structured silvicultural management, and relies on the ability of many species of tree to regenerate from cut stumps or 'stools'. It primarily involves cutting either a tree or existing coppice stool to encourage re growth from the freshly cut stumps to produce many small stems per tree or coppice stool. The many stems are in turn harvested on regular short rotations to produce timber material in smaller, shorter and narrower dimensions than standard even aged silviculture. These smaller materials are for uses such as hurdling, whicker work, firewood, wattle and daub etc. This silvicultural technique produces many more smaller wood products than the equivalent high forest silviculture. It also produces these smaller wood products faster than high forest silviculture.

Coppice also has the additional benefit that due to the small dimensions of the material harvested it was easier to harvest in the past. In ages without metal cutting tools or machinery, having such pre 'sized' wooden materials was a very efficient 'industrial technique' when compared to having to fell and process large trees.

Thus a coppice stand will be readily evident by the presence of many multi stemmed trees, growing from an older larger stump, without a single dominant bole or stem. They will also have a lower canopy height than average. This tree form may be for all or a high proportion of the trees on the site.

Most of our native broadleaves, plus a few exotic conifers such as Coast Redwood, will coppice. The length of the period between cuts varies depending upon species, the site and the produce required. Common species used for coppice are hazel (especially so on chalk), ash (on calcareous and clay soils), hornbeam (on the heavier more acidic soils of the south east), sweet chestnut on the more freely drained of the latter soils and oak on more acid soils. A variety of other species, such as birch can occur in mixtures throughout Britain.

Another characteristic of coppice sites is that coppice was often practiced on a smaller scale than traditional high forest felling silviculture, with many small felling and re growth coupes (less than 0.5 ha) in close proximity to one another. The smaller coupes helped to supply relatively small amounts of the smaller materials in a continuous fashion. This was advantageous as many of the products used were necessary for day to day life in the communities of the past and with such were often situated close to where people lived. Such sites are often associated with wood banks, charcoal platforms and

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tracks. In the more recent past of the industrial revolution coppice was used to supply early industry and can often be found associated with industrial archaeology.

With the advent of metal tools and machinery there is less effort involved in processing small dimension products from large dimension timbers. Also with the advent of new materials such as plastics there is a lower demand for small dimension woody materials from society. These factors combined have played a large part in the decline of coppice as a silviculture system and has left most of our coppice stands in neglect or decline and in the process of evolving into high forest. This background is a highly relevant factor when assessing the nature and condition of the coppice areas.

There are two main types of coppice silvicultural practice:

- Simple
- Coppice with Standards

17.1.1 Simple Coppice

An even-aged, single-storey crop generally grown for fuelwood and/or medium or small sized produce.

17.1.2 Coppice with Standards

In many coppice woodlands a proportion of trees are grown to timber size with the coppice as an understory. Or, alternatively a different species to the coppice crop is planted which is encouraged to be grown to a high forest tree. Such trees are called 'standards' and can occupy a small or large amount of the stand, but often occupy around 30-40% of the area. The standards are widely spaced so that their crowns are not touching, allowing plenty of light to the coppice crop below. The standards can be of various ages and in traditional 'textbook' systems should consist of three to six different age classes. As noted they may be of a different species, e.g. a coppice storey of hazel, with standards of oak.

17.2 How to tell if a Multi-stemmed Tree has been Coppiced

Coppicing follows the cycle shown below. Stems are cut close to the ground and new shoots are grown from the resulting stump. These are, in turn, harvested for specific products and the stump regenerates another crop of shoots.

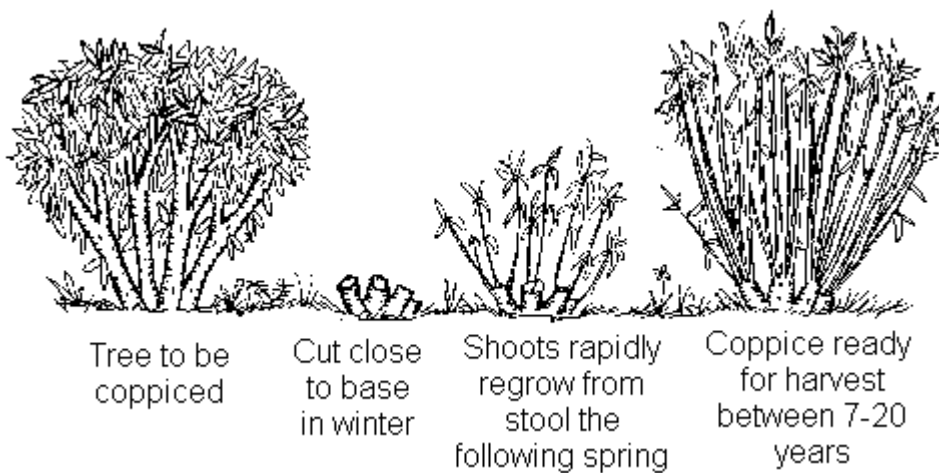


Figure 17 - 1: Coppice cycle (Image from English Wikipedia page: <http://en.wikipedia.org/wiki/Coppice>)

17.3 Distinguishing Between Worked and Stored Coppice

Maximum rotation length for coppice is considered to be 40 years but is generally less than this for most species. Except in the case of hazel, coppice can successfully be resumed even after a period of 60 years neglect.

Many coppice woodlands in Britain are well past their normal cutting cycle and have become 'overstood' and neglected, and are becoming a form of high forest. This process can be aided by the removal of all but the best stem (straightest and vigorous) from each stool. This operation is known as 'singling' and the stems grown on to form large trees are known as 'stored coppice'. The stand can then be treated as a normal forest for thinning, felling and other operations.

17.4 Recording Coppice within the NFI

Coppice is recorded at different levels within the sample square:

As a landuse (component level)

As a silviculture system (component level)

As an observed operation (Manual intervention – sub component level)

And at the coppice stool level (in plots)

Landuse

As with all stratification of stands and allocation to a landuse (or use of land), you are looking to identify the predominant use of that land. When classifying an area as coppice you are looking to see if the area in question was established as coppice and was worked enough as coppice for that to have determined the stands overall character and structure. If this coppice 'past' predominates the nature of the area, classify the area as coppice. We make this point concerning 'past' activity as around 90% of coppice stands have now been abandoned or converted and this factor plays a large part in understanding a stands history and classifying it.

It is with this theme of 'past' in mind that you will identify if that coppice is still worked or not and use that knowledge to determine if the coppice is either the 'worked coppice' or 'abandoned coppice' landuse. Section 17.3 sets some of the boundaries around deciding if coppice is worked or abandoned. The principle boundary being time since the last coppice was cut. This varies with species and the objectives of the coppicing, but a general rule would be if it has not been cut for 6 to 10 years start to consider if it has been abandoned. How much 'beyond' ten years a crop has to go without cutting until it is a definite abandonment varies as discussed and some planned coppice techniques can involve coppice being grown for up to 40 years. A few broad guidelines would be if the following species are not cut within the following periods, it is becoming increasingly likely that the coppice is abandoned:

Hazel 6-12 years

Sweet Chestnut 12-16 years

Oak 20 plus years (and less than 40)

You should also take into account what is likely. There were around 230,000 ha of coppice in Britain in 1905; by 1997 it had fallen to less than 30,000 ha. If you find a stand with no signs of fencing, no operations of any form and is composed of hazel that has not been cut for 30 years it is most probably abandoned coppice. If however you have an oak coppice stand grown to 20 years in a well maintained wood, with evidence of other coppice cut at 20 plus years; you may decide that the coppice is on a longer

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rotation and is worked. Consider such factors and make your best assessment on the day and you will not be penalised. When FC analyse the data we will additionally take into account factors such as species, age, silviculture systems and type of management interventions and that in combination with the worked / abandoned split will be used to build a picture of the nature and composition of our coppice woods.

Silviculture System

Under the overall umbrella of the landuse of either worked or abandoned coppice, we require a further classification as to the type of coppice silvicultural practice that has formed that sites predominant silvicultural features. For example, even if a coppice site has remained un-worked for 20, 30 or 40 years, the features that distinguish simple coppice from coppice with standards are likely still to be evident.

Coppice silviculture types:

Coppice (or simple coppice) – all stools and stems broadly the same age

Coppice with standards – coppice stools and stems forming an understory to high forest

Short Rotation Coppice – energy crops, establish within the last few decades, cut on very short cycles (less than 7 years) and often composed of willows or hazel.

Management Intervention - Observed Operations

Once you have identified that the overall landuse and the silviculture system, you need to identify what if any management operations are evident, ascertain their age and create a series of manual intervention records to reflect that activity.

For example, an abandoned coppice site, of simple coppice, may have been fenced and had game bird pens established within the last 3 years. Here you would need to create management interventions; one of 'fencing' and one of 'game birds' and classify each as 'less than 3 years'.

Or, a worked coppice, of simple coppice, may have been seen 'coppicing' in the last 3 – 10 years. Here create one manual intervention of 'coppicing' and classify that as Approx 3-10 years.

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17.4.1 Component level data

17.4.1.1 Landuse

See the opening section on landuse. All coppice sites should be assigned either a 'worked coppice' or 'abandoned coppice' landuse. Only when abandoned coppice sites have been abandoned or managed under a non coppice regime for so long that their coppice origins do not predominate the character of the site should you classify the site as high forest.

17.4.1.2 Timber Potential

Worked coppice by its very nature is being managed to produce small roundwood; consequently timber potential will be short roundwood or fuelwood.

Coppice which has become overstood or stored has the potential to produce timber in which case the normal rules based on the number of stems per hectare will apply.

17.4.1.3 Age of stem or age of stump or stool?

The age of stool should be assessed, not the age of stems.

17.4.1.4 Storeys

In well managed simple coppice (coppice) a single stool will generally fall into one storey. In coppice with standards it is the same, but the standards will fall into one or more other stories.

There are situations, especially in abandoned coppice where measurable stems within the same stool need to be assigned to different storeys if sufficiently different in terms of canopy height.

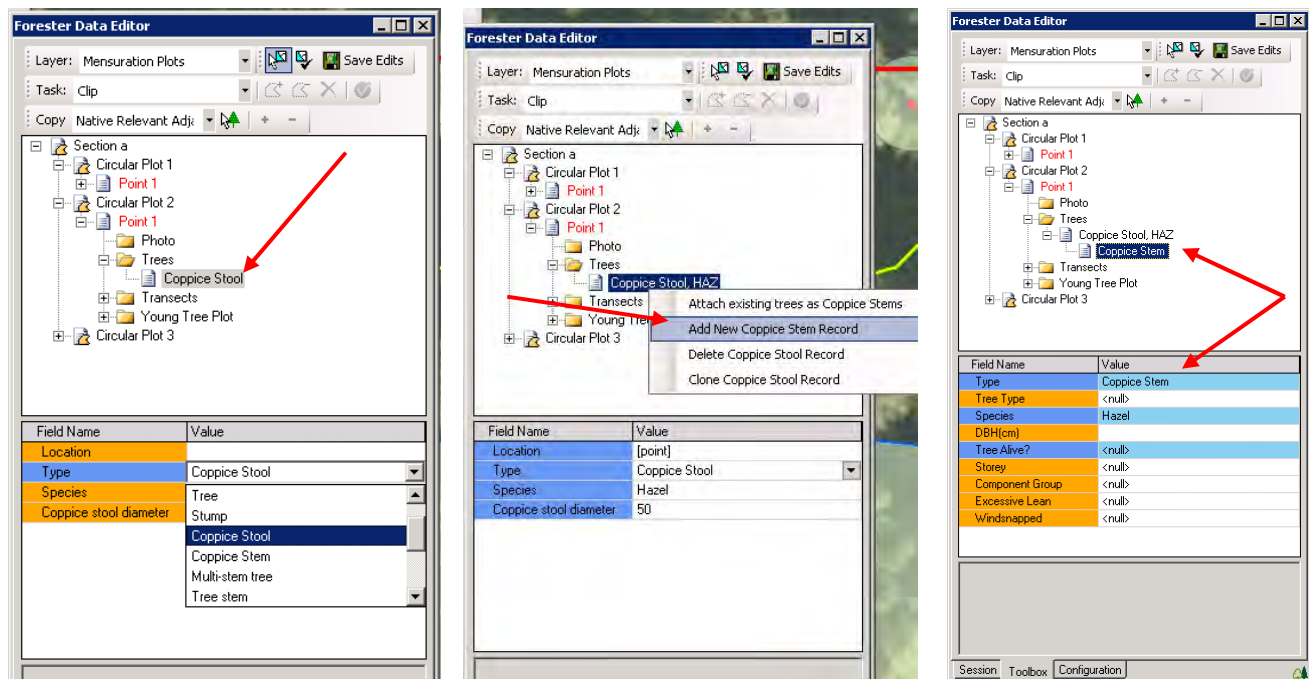
For stools containing a mix of measurable and non-measurable stems, the measurable stems are assigned to upper/middle/lower/complex storeys, and non-measurable stems are assigned to the sapling or seedling tree storeys, even though they may be same height as measurable stems.

Stools/Ha (not stems/Ha). For stools containing a mix of lower storey and young tree storey stems, the stool is counted twice - once for the lower storey Component and once for the young tree storey Component.

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17.4.2 At Plot level:

Coppice stools are mapped and coppice stem records are recorded against each relevant 'parent' stool under the stool record. Multiple stems can be cloned and attached to a single stool. (See Ch13? for examples).



Individual measurable stems are included in the count for deciding between circular plots or points.

If the centre of the stool is within the plot perimeter then all stems are included in the plot, even those that lean outside.

The same applies to the Young Tree Transect and plots.

Only one Height Tree of the same storey can be selected per stool. If the software auto-assign function selects two within the same stool, change one of the stems back to a Normal Tree and manually select a replacement using 3rd Nearest rule.

If a coppice stem is selected as a Height Tree, it should be tagged with biotape if there are several of the same DBH (for QA).

When doing crown heights and widths, measure just the foliage belonging to the selected Height stem.

17.5 Re Measure Variations.

You are required to make your own assessment of the presence and nature of coppice at the square. You will also be supplied with the landuse, silviculture systems and operations that the previous surveyor observed against your coppice site. By comparing the two we can ascertain if any change has occurred since the last survey.

The chapters on sectioning, stories and component group allocation take you through what to do if your assessment is different to the previous surveyors if this cannot be accounted for by real change. There is no significant difference in treating coppice as compared to any other land use and those guidelines apply equally to coppice. Two additional points would be:

1. There is little ambiguity or subjectivity in interpreting a worked coppice site if it is operated under shorter rotations.
2. Where rotations are longer discerning between abandoned coppice and worked coppice on longer rotation, becomes more of an art and there is some subtlety and subjectivity to discerning this. As a result you may find yourself disagreeing with the previous surveyor's assessment. In such instances make your best assessment and record that even if it is different to the previous surveyors. As a general guide in the majority of instances abandoned coppice would have to have been not coppiced for over 20 to 30 years, singled, converted to stored coppice and been left to 'grown on' into high forest before a high forest classification should be applied. Crown closure would clearly signify completion of this conversion.

Some surveyors can mistake naturally occurring multiple stemmed trees for coppice, close observation of the stump for evidence of cutting should clarify this, correct as appropriate.

17.5.1 Appending 'rogue' stems to coppice stools

You will occasionally come across a cluster of trees all mapped in the same area where a coppice stool sits, but the data has no coppice stool. This arises as in the first year of the first cycle, surveyors had no means to record a coppice stool and no means to append coppice stems to this. Instead they recorded the multiple coppice stems singly as multiple trees. In the 2nd cycle special provision has been made within the software to enable you to correct this. If you find a cluster of such 'orphan' stems, first create a coppice stool at the centre of the tree cluster. Assess the stool and attribute as normal within the software. Then right click on the coppice stool record and choose 'Attach existing trees as coppice stems'. The software will search for trees of the same species

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within 2m of the stool and attach these to the stool as coppice stems. If the software leaves some stems that should have been attached to the stool, go to each tree and move its location to within two metres of the stool and re run the attached utility.

