

WOODLAND MANAGEMENT MASTER CLASS

Not all aspects of planting and natural regeneration can be covered in a 20 minute period. Luckily, I have been asked to talk about only two specific areas: -

1. Natural regeneration
2. Clump Planting

Natural regeneration

Before I start on these two aspects, it is important to understand the Philosophy behind them. An Oak tree, tree shelter, tree stake plus labour costs approximately £1.60. Assuming a 150-year rotation at 4% return, (which I understand is the Forestry Commission's current estimated return on its money), means for every £1 spent on planting a tree needs to be worth £359 at maturity to achieve this 4 % return. Similar figures could be calculated for a hectare of Scots Pine. These figures show the difficulty of making forestry a sound financial investment. One way of easing this figure is not to pay planting costs, i.e. use natural regeneration. However, even natural regeneration has a maintenance cost. After finance, other reasons such as nature conservation and appearance apply. The National Trust generally encourages public access, but want to produce a quality tree economically, that also has good environmental and landscape values.

Currently, natural regeneration is seen as a system to economically and environmentally re-stock an area. It has the advantages of retaining genetic genotypes and usually requires minimal input of staff time. Until recently, regeneration was mostly seen as a way of re-stocking following a clear fell or winds blow. More recently, it is seen as a way of economically and sustainably managing a multi-structured wood.

Human nature likes to see uniformity of age and stocking but Nature does not. If we imagine an Oak wood that is 100 years old, according to Yield Class Tables, it would hold between 50-80 trees/ha. If we assume the wood would last another 210 years and wish a stocking rate of 70 trees/ha, it is apparent that the required recruitment rate is 1 tree/ha every 3 years to have an indefinitely sustainable woodland. In this context, I am talking about 1 tree every 3 years that will eventually reach the canopy. This would also allow 1 mature tree per 3 years to be sold. This level of recruitment obviously will never qualify for natural regeneration grants. However, this slow rate of recruitment does not stand easy with human nature.

Clump Planting

An alternative system the National Trust has tried is clump planting. One of the problems we have identified is that trees planted at 3-metre spacing create themselves many problems due to the spacing, particularly between the ages of about 5 and 15. These problems include being blown over, large lower branch size, continuing need for maintenance and inspection, etc. Traditionally, these factors were not a problem because 2500 - 4000 trees/ha were planted.

The National Trust has developed a system whereby trees are planted in clumps of between 20-30 trees approx. 8 metres apart. This will give somewhere between 35-50 clumps/ha. Therefore, even if only one tree per clump reaches maturity, we would have a fully stocked stand. Hopefully the intervening spaces would attract natural regeneration of extra species.

The advantages of this system are

- Very quick and easy to plant
- Spraying and maintenance is concentrated within the clump and not spread over the area.
- Particular microsites can be protected, e.g. areas prone to flooding can be left unplanted
- Particular plant species can be planted into for shading or left open for additional light.

In Nature Conservation terms, there is a huge edge effect within this type of woodland which, although ultimately it will disappear, is there for a considerable period. This is attractive to a variety of mammals, birds, moths and insects.

Advantages of this tight planting in silvicultural terms are great in that

- The trees are forced to compete at an early age for height
- Lateral branch growth is restricted
- Maintenance is made easier and cheaper as it is concentrated
- Permanent future extraction access is provided through the intervening spaces
- Conservation values are greatly increased
- The system does not cost more than conventional planting

The use of tree shelters in clump planting or natural regeneration may or may not be desirable according to site factors. Once the planting site is over about 0.5ha it is usually cheaper to fence than use tree shelters.

The National Trust has been using the clump planting system for approx 7 years on sites of 0.25ha to 4.0ha. The system is deliberately kept flexible, but quality is maintained through adequate supervision and by ensuring the required number of trees per ha is planted with the specified percentage of species.

The National Trust is looking more and more to using natural systems such as natural regeneration. The key factor with natural regeneration is to accept the species that arrive. In many East Anglian areas, this may mean a high proportion of Sycamore. Do bear in mind that currently good Sycamore is making extremely high prices and probably better prices than even medium quality Oak. The National Trust will assess what natural regeneration is likely to occur before opting for this system, and would carry out works to encourage natural regeneration by leaving particular seed source trees.

At the beginning I mentioned finance and, again, do bear in mind the on-costed effect of planted trees as to their real or projected value at maturity. We have found natural regeneration to be, where we are looking at low levels of recruitment, particularly effective in use of staff time. Where there is this low level of recruitment we have sometimes used tree shelters to identify the one tree in three to reach the canopy. This does stop animal predation and makes the tree easily defined for monitoring and weeding

Another variation on this theme is to take woodland areas that we wish to re-stock and managing our thinnings to increase/utilise the light. We can thus encourage a new generation of trees within the existing stand. The biggest requirement is to manage subsequent operations effectively to ensure what is being valued is not lost.

In Summary: -

Consider your management philosophy

Match to appropriate Forestry processes – ensuring ability to achieve desired results

Consider time / cost implications

Make timely applications for available grants where applicable

Order plants / tender work early, say late summer.

Ensure good quality stock and workmanship by good supervision

Do not stint on timely follow up maintenance.

Management of woods can be enjoyable – not just a chore !!!