

Broadleaf Planting

This bulletin is intended to help, and support implementation of 'FEE Operations Instructions No 3 and 22'.

Background.

The 'Forests and climate change guidelines', FCIN069/77/82/086, recommend that foresters plant a range of provenance/origin as insurance against a changing climate. It is now considered safe to move trees 3 degrees north at the same altitude and to similar coastal/continental regions. NE has endorsed this approach through their document TIN053. It also now accepted that sweet chestnut, beech and sycamore are part of a spectrum of plants that should be treated as natives.

Forest Research has been consulted, and endorse the approach for FEE.

Key Facts

High forest broadleaf woodland that has been in active management since before the 1900's probably has a wide genetic structure. This is the result of planting stock having come from nurseries across the UK and Europe. This wide genetic variation means these stands have high adaptive capacity and should be able to respond to climate change through 'natural selection'. However it is probable that minor large seed associated species will have not benefited to the same degree.

- Species using wind pollination and/or use seeds that use wind for dispersal, have naturally have wide genetic variation. These are often pioneer species.
- Most existing broadleaved woodland is currently managed in a none clearfell silvicultural system. Almost no broadleaf planting currently takes place with reliance on natural regeneration for new stock.
- There has been a determined drive to return PAWS sites to native woodland. In many cases this has seen significant removal of conifers and the site has been stocked through natural regeneration with varying levels of success.
- Other than restocking, here are only limited new areas being planted with broadleaf trees, such as riparian enhancements in upland areas and amenity sites.
- The issues are more serious in the southern areas of the UK where the English channel has been a barrier to natural migration.
- Selection of provenance/origin for adaptation can be demanding and can time-consuming. It is considered appropriate that foresters make planting selection at species level and are not required to consider issues of provenance. It is the responsibility of the plant supply unit to supply the best available suitable provenance mix for planting.

When should adaptive planting take place

The ability of existing woodlands to adapt through natural processes because of their high genetic diversity is a different issue to the adaptedness of planting stock. When planting, it is the ability of those individuals being planted to survive and grow at an adequate rate in a changing climate that is the issue. There should therefore be a presumption of using adaptive stock when planting broadleaves, as outlined below:

1. FD's should carry out adaptive planting for species which have very limited seed mobility. This will initially apply to oak, beech, cherry, and sweet chestnut.
2. Adaptive stock should be used where planting is required for the successful regeneration of climax species woodland. The only exception will be where it can be demonstrated that there are over-riding issues relating to the conservation of local genetic diversity.
3. Restoration of PAWS offers a unique opportunity to introduce climate change adaptation strategies. Planting of adaptive stock climax species should be considered.
4. New planting will use adaptive stock for all species
5. Target stocking levels will be those recommended in 'Operations Instruction No 3'. Where beating up is required, adaptive stock should be used.
6. Consideration should be given to near native species where there is an opportunity to increase the productive capacity and species diversity, without compromising ecological objectives.
7. Forest districts will need to request the species and numbers of trees to be planted 3 years before they are required.
8. The FC nurseries will acquire provenances for each district using the recommendations in appendix 1.
9. Districts will use the recommended monitoring methods within FMM 4. FR will be invited to select a sample of these sites and monitor them as field trials.