

ALTERNATIVE SPECIES TO ASH FOR PLANTING IN NATIVE WOODLANDS.

Background

Advice has recently been issued by FC about the action being taken to respond to the risks of infection of ash trees with the *Chalara fraxinea* fungus.

Imports and movements of ash within GB are now restricted by UK Government legislation and land managers may wish to seek alternatives to ash for planting until this situation changes.

Aim

To advise people on alternative species appropriate for various native woodland types where ash is not available or not guaranteed as disease-free.

Scope

Planting in new or existing native woodlands, where the aim is to create, maintain or restore native woodland habitats, in the following cases:

- New native woodland planting, including schemes planted under SRDP Woodland Creation or Land Managers Options.
- replanting in existing native woods
- planting in PAWS sites to restore to native woodlands
- planting to help convert non-native woods to native woods
- planting of patches of native woods in conifer forests in accordance with UKFS and Biodiversity Guidelines requirements (a minimum of 5% native broadleaved trees and shrubs%).

The guidance does not cover those woods where production of broadleaved wood/timber is the main aim, but one or more of the alternative native species listed may be suitable in many of these cases.

Alternative species in native woodland types that typically include ash

Guidance on the choice of species for new native woodland planting is set out in detail in FC Bulletin 112, (available from FC publications), which describes the species characteristic of each main woodland type that is likely to be planted. The guidance is based on the National Vegetation Classification which derived from sampling semi-natural woods and other habitats throughout GB.

The main types of native woodland in which ash is typically found in Scotland are shown in the table below. For each type the full range of trees and shrubs which are native in Scotland are listed, divided into major and minor species.



Table: Trees and shrubs native to Scotland in native woodland types where ash is typically found.
(from FC Bulletin 112 , Creating new native woodlands)

Native woodland type	W8 (Lowland mixed broadleaved woodland with dog's mercury)*1	W9 (Upland mixed broadleaved woodland with dog's mercury)*2	W10 (Lowland mixed broadleaved woodland with bluebell/wild hyacinth)*3	W7(Alder-ash woodland with yellow pimpernel)*4	W6 (Alder woodland with stinging nettle)*4
Characteristic major and minor tree and shrub species *5 (Major species in bold)	ash	ash	pedunculate oak	alder	alder
	pedunculate oak	downy birch	sessile oak	ash	grey willow
	sessile oak	rowan	silver birch	grey willow	elder
	wych elm	hazel	hazel	hazel	ash
	hazel	sessile oak	hawthorn	hawthorn	downy birch
	hawthorn	wych elm	rowan	downy birch	pedunculate oak
	downy birch	alder	holly	goat willow	holly
	silver birch	bird cherry	downy birch	pedunculate oak	goat willow
	rowan	pedunculate oak	wych elm	sessile oak	hawthorn
	holly	hawthorn	ash	rowan	guelder rose
	crab apple	elder	gean	holly	blackthorn
	gean	grey willow	crab apple	bird cherry	purple willow
	grey willow		aspen	elder	
	aspen		elder	guelder rose	
	elder		guelder rose	blackthorn	
guelder rose		blackthorn	bay willow		
blackthorn		whin/gorse			
goat willow		broom			
Typical terrain	Lowland valley slopes; mainly eastern.	Ravine and valley sides and heads; often rocky.	Valley bottoms and gentle valley slopes on lowland coastal margins; mainly eastern	Mainly valley sides and hill-slopes with flushes; streamsides.	Alluvial terraces in mature river valleys, disturbed and enriched floodplains, silting loch margins.
Soil types	Base-rich brown earths and base-rich groundwater gleys	Calcareous and basic brown earths and base-rich surface water gleys	Brown earths and base-poor ground water gleys	Base-rich gleys and flushed brown earths	Moist alluvial soils, enriched fen peats.

*1 Part of the UK priority woodland type called: **Lowland mixed deciduous woodland.**

*2 The UK priority habitat type called **upland mixed ashwoods**

*3 Part of priority habitat type **Lowland mixed deciduous woodland**. Also found locally in the lowland margins in the priority types: **upland oakwoods** and **upland birchwoods**.

*4 Part of the UK priority habitat type called **Wet woodlands**.

*5 **Major species** = Species to be planted more frequently; each should be present in at least half of individual sites (or individual patches within larger sites or planting schemes). *Collectively* they should make up over half of the eventual canopy cover.

*5 **Minor species** = Species which could feature less frequently; each should be present in less than half of individual sites (or patches in larger schemes). *Collectively* they should make up less than half of the eventual canopy cover.

Each woodland type has considerable flexibility in the mix of species that can be used. The table should be used to consider possible alternatives when ash planting is not possible or the risks are considered to be too high.

Possible addition of ash at a later stage should be considered as well as the chances of natural colonisation by ash occurring.

Example of using this guidance for adjusting plans for planting a new native woodland

A planting scheme for a new native woodland in the Scottish uplands includes various base rich areas suited to creating the W9 woodland type. In these areas the agent has identified ash as a suitable species and has planned for 30% of these areas to be ash with a mix of 4-5 other trees and shrubs including sessile oak, alder, downy birch, rowan and hazel.

The agent substitutes the ash with a mix of a slightly higher amount of the other major species, as well as adding 5-10% of three of the minor species which had not previously been included: wych elm, bird cherry and hawthorn. The overall diversity of the scheme is actually increased as a result.

How does this guidance apply to existing native woods and PAWS restoration?

The table and guidance applies equally well to existing woods as to new woods, in cases where the aim is to maintain, improve or restore native woodlands. The use of natural regeneration is often preferable where practical in these situations and ash may colonise or expand in this way.

If there is a risk of loss of currently established mature ash to Chalara infection what can I do to maintain the native woodland?

Consider diversifying the species composition, using the Table, to help spread the risks. This is also a good idea in general to help adaptation to climate change and resilience to other pests and diseases.

What about use of non-native species to Scotland like sycamore and beech?

In creating new native woods there are plenty of alternative native species as the Table shows. This type of woodland aims to expand priority habitat types and therefore beech and sycamore should not be planted in them.

In existing native woods and PAWS sites the mix of objectives and current composition and condition should guide choices. For example, in a wood where ash is already a large component now and some mature beech and sycamore are already present, these could be managed to retain them as an insurance against large scale loss of canopy and timber revenue if the ash were to rapidly succumb to Chalara. This consideration needs to be balanced with assessing the chances of increasing the spread of beech or sycamore into places where they would not be desirable.

Similar thinking may apply to a lesser degree to non-native conifers in PAWS sites or native woods, although there are none of these that directly substitute for ash on the same base rich site-types.

In any case any retention of existing non-natives should be accompanied by a strategy of adding more alternative native species for future diversity and options, based on the Table above.

What about planting of native broadleaves as a biodiversity component of conifer forests as required by the UKFS?

The table can also be used to guide species choice and there should be no need for non-native species to be used for this purpose.

Seed sources and choice of provenance

For any planting of native species the guidance in FCS guidance note ‘Seed sources for planting native trees and shrubs in Scotland’ should be followed.

<http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-6uue3l>

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