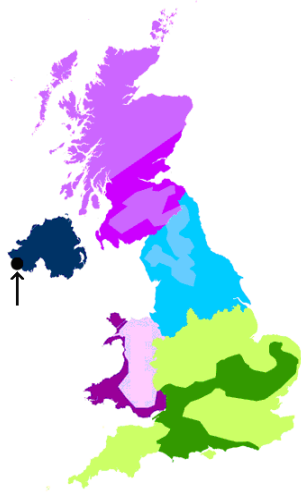


Assessing and addressing the impacts of ash dieback on UK woodlands and species of conservation importance

Case study 4 : Marble Arch



Case study key facts

Total area of woodland: **24 ha**
Proportion of ash in canopy overall: **80%**
Woodland structure: **high forest**
NVC: **W9**
Vulnerable ash-associated species: **87**
Alternative trees and shrubs: **a variety are present but the abundance of some is low**
Management: **create gaps of suitable size for natural regeneration or planting**

Site and Location

Name	Marble Arch
Country	Northern Ireland
Local Authority	Fermanagh
Landscape context	Narrow wooded gorge with river in valley bottom, which is surrounded by upland pasture.



A typical part of the stand at Marble Arch with many young pole stage ash (photo M Mackinnon).

Site Characteristics

Woodland area

24 ha.

Woodland type

Primarily ash woodland NVC W9. with a small area of NVC W17 oak / birch wood in the northwest corner.

Soil type

Generally calcareous.

Lithology

Carboniferous Limestone.

Stand structure

The canopy is largely continuous with only a few small clearings which are dominated by ash regeneration. The overstorey is predominately mature and pole stage ash providing about 80% of the canopy cover. Mature oak accounts for c. 5% of overstorey canopy, and the remaining 15% is beech and larch planted on the upper-slopes, although a few individuals are present in the valley bottom. The understorey is almost as extensive as the canopy, it is dominated by ash saplings and hazel; a small amount of holly, hawthorn and blackthorn are also present. A wide range of other species including sycamore, common alder, goat willow, bird cherry, wych elm, downy birch, yew, rowan, field maple are scattered across the site. The slopes of the site are unstable and frequent disturbance caused by falling trees and landslips provides regular opportunities for natural regeneration. Prolific regeneration of ash occurs throughout the stand and hazel is frequent, but other species such as oak, hawthorn and holly are rare and generally confined to clearings. The ground flora largely comprises mosses and ferns; bramble is widespread but does not dominate, honeysuckle is also present.

Biodiversity interest

Designations

Forms part of the Marlbank Area of Special Scientific Interest which is also an NNR. The area is designated for a variety of features including the mixed ash woodland which is a habitat with high national importance.

Vulnerable species likely to be affected

A total of 87 associated species were identified in the database almost 70 of which were lichens, 10 were bryophytes with a few fungi, birds and an invertebrate. However only 3 species are highly associated with ash and few of the partially associated species are either BAP species or have any special level of concern.

Other species of conservation interest

Red squirrel, otter (a European Protected species), the fungi *Mycena diosma* and *M. mirata*, and the lichen *Lecidea epizonthoidiza*.

Management

Historical

Beech and European larch were planted in the late 18th century for timber; they are still present and account for about 15% of the total canopy cover.

Current

Primarily managed for recreation. Management practices include: exclusion of stock by fencing; a small amount hazel coppicing to create glades for butterflies; and retention of larch to maturity and death to provide deadwood habitats. In response to the potential threat posed by Chalara removal of mature beech and sycamore, either large trees or smaller natural regeneration has ceased.

Long-term vision for site

The ash woodland to be of the same size and have the same characteristics as the current woodland.

Factors limiting delivery of management currently planned

Difficult access and terrain.

Future methods of management

Potential response of ash associated species to ash dieback

Of the 3 species highly associated with ash one is a fungus and 2 are lichens. An additional three of the partially ash associated lichen species, which are also BAP species and classified as near threatened, could also be regarded as potentially affected by ash dieback. However none of the 5 lichens may disappear from the site. All can also use two or three of the most common trees and shrubs present and 2 – 6 of the less common species as alternatives. The fungus, *Hypoxylon petriniae*, may be more threatened as it may only use sycamore and alder which are uncommon.

Continuation of existing management with loss of ash occurring

The range of common trees and shrubs present indicates that most of the vulnerable species have the potential to survive on alternative trees already growing on site. Natural thinning of the canopy as ash dies may encourage regeneration of other species including sycamore which would benefit the threatened fungus.

Management allowing for loss of ash but maximising persistence of ash associated species

The absence of browsing animals allows natural regeneration of a variety of species including those which can act as alternatives to ash such as hazel, oak, sycamore and beech. Consequently it should be possible to increase the abundance of these native and naturalised species using natural regeneration, but this may depend on the availability of seed sources. For shade tolerant species such as sycamore and beech one approach would be to fell small groups around advance regeneration with management of any competitive vegetation that develops. For more light demanding species such as oak planting in larger open areas may be a better option. Planting could be used for all species, and it may be the only option to establish alder and horse chestnut which are the other known alternatives for the threatened fungus. However use of horse chestnut must be carefully considered as it is non-native and is itself susceptible to disease. Natural regeneration will not necessarily provide the species desired and planting may be necessary if it fails. If planting is carried out then suitable locations should be chosen on which to establish the plants and management should follow best practice to ensure that they survive and grow (e.g. use good quality plants and manage vegetation).

Factors likely to constrain delivery of future management to maximise persistence of ash associated species

Poor vehicular access to the site. Topography restricts access for planting across about 20% of the site.

Potential for use of generic methods to establish alternative species The minimum intervention options 1 and 2 are broadly similar to existing management and would probably allow the regeneration of sycamore, beech and other species although this is likely to be unpredictable. However these options are probably inappropriate in a site managed primarily for recreation. Option 5 which thins out dead trees may be more appropriate and provide a similar result. Felling with natural regeneration promoted

(option 6) may also succeed especially for light demanding trees but option 4 which uses replanting is likely to be more successful. The effectiveness of option 3, where there are no interventions after felling is likely to be unpredictable.