

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

Case study 9 : Raincliffe and Forge Valley



Case study key facts

Total area of woodland: **63 ha**

Proportion of ash in canopy overall: **c. 45%**

Woodland structure: **high forest**

NVC: **W8**

Vulnerable ash-associated species: **9**

Alternative trees and shrubs: **present but privet should be introduced**

Management: **plant privet in gaps created by group felling**

Site and Location

Name	Raincliffe and Forge Valley
Country	England
Local Authority	Scarborough Borough Council
National Character Area	North York Moors and Cleveland Hills
Landscape context	Woodland located in steep sided gorge that runs from north to south with a main road and river in valley bottom, surrounded by arable fields and pasture.



Young stems of ash and sycamore dominate this even-aged stand which has substantial amounts of ivy in the ground flora (photo M Mackinnon).

Site Characteristics

Woodland area

63 ha

Woodland type

Lowland mixed deciduous, predominantly NVC W8 but with some small areas of oak and birch woodland (W10 and W16), and also alder / ash woodland (W7) on the valley floor.

Soil type

Primarily calcareous soils, poorly drained clays on the slopes and valley floor with free draining acidic soils over sandstones on the upper slopes along the woodland/field boundary.

Lithology

Limestones and sandstones.

Stand structure

The stand is high forest with a largely unbroken canopy of even-aged ash and sycamore which are co-dominant overall providing c. 90% cover. However distribution of these species varies, ash is more abundant on the west facing slope and sycamore on the east facing. The remaining 10% of canopy comprises oak on the upper slopes, wych elm throughout, planted beech primarily on the eastern slope and common alder on the valley floor. There are a few scattered individuals of large-leaved lime, goat willow, downy birch and planted wild cherry in the overstorey, and a few small groups of planted Sitka spruce, Norway spruce, Scots pine, and European larch. Due to large scale felling in the first half of the last century there are few large, old trees with the majority of the canopy being in the early mature phase. The understorey covers 20 – 25% of the site and primarily comprises hazel (c. 75%), holly (c. 20%) and elder (c. 5%), with a small amounts of rowan, hawthorn, field maple, blackthorn and bird cherry. Natural regeneration is constrained by heavy canopy shade, it is primarily small juvenile ash, sycamore and beech < 20 cm tall with very few saplings (> 1.3 m), and is generally restricted to the few small canopy gaps created by Dutch Elm Disease and small areas of group felling. Juveniles of hazel, holly and hawthorn are occasionally found throughout the wood. In addition regeneration is restricted on the west facing slope due to the abundance of ivy in the ground flora. There was no evidence of deer at the site.

Biodiversity interest

Designations

The site is an SSSI and an NNR which was designated as it comprises one of the best known examples of mixed deciduous woodland in northeast England.

Vulnerable species likely to be affected

Few ash associated species were identified in the database for this site: one was a moth with an obligate association, the remaining eight (1 bird, 4 bryophytes and 3 lepidoptera) were only partially associated.

Other species of conservation interest

There are a variety of interesting species at the site including the otter and pipistrelle bat (both European Protected Species), kingfisher, goshawk.

Management

Historical

Traditionally the woods were coppiced to provide charcoal for a local forge. Large scale felling occurred between 1922/45 following which substantial areas of the site were colonised by sycamore. Beech and conifer species were planted in the 1960/70's.

Current

The site has been fenced to exclude livestock. Stand management is primarily by non-intervention although there has been some planting of native species, thinning and ring-barking of sycamore, and some small scale coppicing of hazel.

Long-term vision for site

The woodland will have greater structural diversity and include all habitats and associated species that are currently present.

Factors limiting delivery of management currently planned

The current management practice of non-intervention will limit the development of an uneven aged stand (which has greater structural diversity) as there will be few opportunities for regeneration of new trees and shrubs.

Future methods of management

Potential response of ash associated species to ash dieback

All except one of the partially associated species can use 2 or more of the common, and 2-7 of the less common tree and shrub species at the site suggesting that they have the potential to survive the loss of ash. However one moth (*Apeira syringaria*) may be adversely affected as it can use only privet as an alternative and this is not present at the site. The obligate species will be lost.

Continuation of existing management with loss of ash occurring

Long-term management using minimum intervention will probably result in an increase in the abundance of sycamore and the amount of canopy shade cast. This will lead to the reduced abundance of light demanding species, especially those of small stature. However, if oak, beech and elm remain common components of the canopy most of the partially associated species for which sycamore is not an alternative will probably survive. In contrast, conditions for natural regeneration will deteriorate further reducing the already slim probability that privet will colonise naturally. If it does appear then growing conditions will be unfavourable. Consequently *Apeira syringaria* is unlikely to survive.

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

Most of the alternative tree and shrub species for the vulnerable species will benefit from the management required to introduce privet for the benefit of *Apeira syringaria*, which will also aid the improvements in structural diversity envisaged in the long-term vision. To encourage natural regeneration, and establishment of new trees and shrubs, growing conditions within the stand need to be improved. The best method would be to create canopy gaps scattered throughout the stand by group felling in areas of ash, the primary aim being to provide suitable conditions for the establishment of privet but other species intolerant of shade would benefit. Natural regeneration of privet cannot be relied upon and planting will be the most predictable method of establishment. Best practice should be followed and should include management of any competitive vegetation that develops, this will probably include actions to control the establishment and growth of sycamore seedlings. Privet is susceptible to browsing and protection from browsing may be necessary if deer appear at the site.

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

Failure to maintain suitable growing conditions due to canopy shade cast by sycamore. Long-term freedom from browsing either by deer or livestock.

Potential for use of generic methods to establish alternative species

Felling and replanting (option 4) is the only method suitable that will allow establishment of alternative trees and shrubs for all vulnerable species.