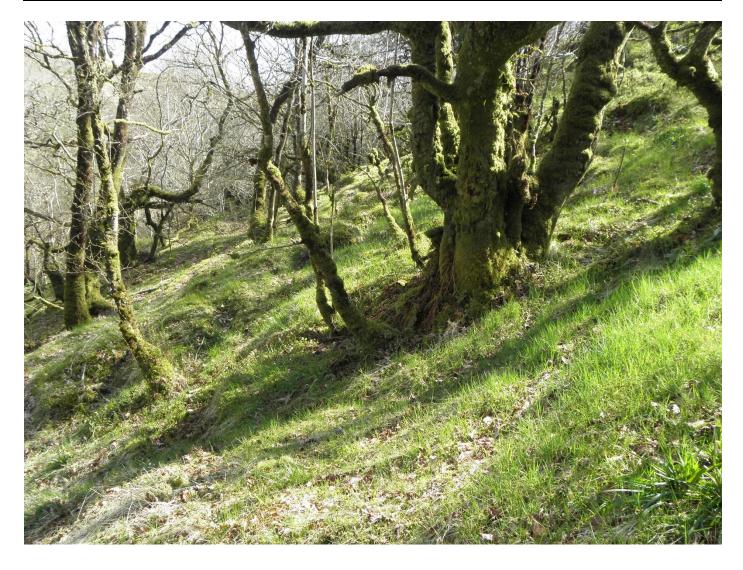**Northern Ireland Priority Habitat Guide: Oakwoods**

What is an Oakwood?

Oakwood is generally referred to as acidic woodland, found mainly in upland areas, hillsides and valley sides but can also occur in lowland areas. It is characterised by a predominance of Sessile Oak *Quercus petraea*, Pedunculate oak *Quercus robur* and Downy Birch *Betula pubescens* in the canopy, with varying amounts of Holly *Ilex aquifolium,* Rowan *Sorbus aucuparia* and Hazel *Corylus avellana* as the main understorey species. Some woods have been invaded by Beech *Fagus sylvatica*, Sycamore *Acer pseudoplatanus* and Rhododendron *Rhododendron ponticum.* The range of plants found in the ground layer varies according to the underlying soil type and degree of grazing; from Bluebell *Hyacinthoides non-scripta*, Greater Wood-rush *Luzula sylvatica* and ferns, through to grassy or moss dominated areas.

Table 1: Linking Habitat types with Annex 1, ASSI features and NI Priority Species

Northern Ireland Priority Habitat: Oakwoods		
Habitat Directive Annex 1 habitats (SAC Feature)	**ASSI features**	**NI priority species**
H91A0 Old Sessile Oak woods with *Ilex* and *Blechnum* in the British Isles	Oakwood	Red Squirrel, Bat species, Wood Warbler, Spotted Flycatcher, Song Thrush, Bullfinch, Scottish Wood Ant, Small Cow-wheat, Killarney Fern, Intermediate Wintergreen.

Definition

To qualify as the Oakwood priority habitat, the woodland must meet the following criteria:

- Woodland area greater than 0.5 ha.
- 20% or more canopy cover, or the potential to achieve this in the case of regenerating or newly planted stands of trees
- A canopy composed of 50% or more site-native trees or shrubs (or will be at canopy closure in the case of younger stands). Site-native trees are those which are native to the locality and capable of growing naturally on the site
  And/Or
- Typical acid woodland ground flora (which may be under non-native tree species such as Sycamore *Acer pseudoplatanus*).

The National Vegetation Classification (NVC) codes are useful in determining which habitat types fall within Oakwood priority habitat. NVC codes are provided in the Appendix 2.

Where are they found?

Oakwood is generally widespread in Northern Ireland on fairly acidic to less base-rich soils. It is particularly common in the Sperrins and the north-west on metamorphic rocks and in County Fermanagh on sandstone. It is also found in parts of Counties Antrim, Down and Armagh, where the soils are less base-rich, although the most acidic communities are generally absent here.

Within any Oakwood, there may be pockets of base-rich woodland and / or flushed woodland which are similar to Ashwoods or Wet woodland. The diversity of these woodland communities should be maintained.

DAERA hold priority habitat and species data on the NIEA Natural Environment Map Viewer. See https://appsd.daera-ni.gov.uk/nedmapviewer/ (and link to video tutorial on how to use). Note that the Map Viewer indicates areas which hold NIEA records of habitat / species data, but does not infer the complete coverage of these environmental assets in Northern Ireland.

Why are they important to wildlife?

Oakwood is notable for its assemblages of flowering herbs and lower plants. The ferns, mosses and liverworts found in the most oceanic of these woods are particularly rich; containing rare species such as the mosses *Hylocomium umbratum* and *Leucobryum juniperoideum* and the liverwort *Anastrophyllum hellerianum*.

Notable fungi associated with Oakwoods include *Inonotus dryadeus* and *Phylloporus pelletieri*. Many also hold very diverse lichen communities. Oakwoods can host a number of priority species which are listed in Table 1.

The variety and abundance of flowering plants within semi-natural habitats provide good sources of pollen and nectar for many of our pollinating insects such as bumblebees, hoverflies, butterflies and moths. For further information on habitat management for pollinators, refer to the All-Ireland Pollinator Plan resources: www.pollinators.ie.

Pressures & Threats

The quality of Oakwood is dependent upon the following conditions: wet or waterlogged soils, low nutrient levels and appropriate levels of management. Factors which have led to the decline of Oakwoods include, but are not limited to:

- Inappropriate grazing - by both livestock and feral goats and deer can have a profound influence both on the structure, species and regeneration potential.
- Browsing and bark stripping - by feral goats and deer and other fauna such as squirrels, can lead to significant changes in the woodland structure, ground flora impoverishment, and regeneration potential.
- Invasive species - including replacement of native trees by species that are not native to Northern Ireland such as Beech *Fagus sylvatica* and alien plant species including Rhododendron *Rhododendron ponticum* , Cherry Laurel *Prunus laurocerasus*, Japanese Knotweed *Fallopia japonica*, Salmonberry *Rubus spectabilis*, Snowberry *Symphoricarpos albus* and can lead to changes in the composition of the woodland and decreased diversity of field layer respectively.
- Habitat loss and fragmentation - through development and agricultural practices leading to greater ecological isolation of existing woods. Fragmentation is exacerbated by the removal of trees in field boundaries and small patches of Oak and Downy Birch-rich woodland in fields.
- Use for sport – can lead to soil enrichment and changes in ground flora.
- Nutrient enrichment - may occur from spray drift, runoff from adjacent agricultural land and game bird rearing leading to changes in soils and ground flora.
- Disease - such as Sudden Oak Death caused by the fungus-like organism *Phytophthora ramorum* which invades susceptible trees through the bark, killing portions of the tree.
- Nitrogen deposition - excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity.
- Air pollution – derived remotely from vehicle and industry emissions could potentially cause pre-mature death of old and veteran trees.
- Climate change - potentially resulting in changes in the vegetation communities.

Favourable management of Oakwoods

These important woodlands should be protected and maintained where they occur, and should be restored where their condition has declined. Some of our most important woodland sites are protected through National and International legislation. In the wider countryside, woodlands are protected from development and increased agricultural productivity through planning policies and legislation such as the Environmental Impact Assessment Regulations.

Woodland habitat can be managed through grazing or no grazing. The choice of management method for this habitat is based on historical management and current condition.

Optimal grazing management for Oakwoods is light, extensive grazing at low stocking rates during late spring and summer months, with no winter grazing.

Ungrazed Oakwood management is used to maintain naturally ungrazed woodlands and to restore woodlands which have been subject to prolonged grazing, used for over-wintering of livestock and where there is damage to the

woodland ground flora, excessive poaching and/or little evidence of natural regeneration. Most woodland features of designated sites will be subject to the exclusion of grazing, dependant on the condition of the woodland.

Organic and inorganic fertilisers should not be applied as this would reduce species-richness and diversity with a loss of nature conservation value.

Deadwood should be retained and windblown trees should be left where they fall.

Non-native invasive species, including Bracken *Pteridium aquilinum,* Rhododendron *Rhododendron ponticum* and Laurel *Prunus laurocerasus*, and non-native invasive canopy species, including Sycamore *Acer pseudoplatanus*, Beech *Fagus sylvatica* and conifers, should be controlled. Machinery should only be used where ground conditions permit.

How do we determine the "health" or condition of Oakwoods?

The conservation status can be determined by the condition of the habitat. Favourable condition is defined by setting targets or target ranges for a series of different attributes. These are components or characteristics of the vegetation that are relatively easy to measure, but which are reliable indicators of the "health" of the habitat.

NIEA has developed Rapid Condition Assessments for several broad habitat types (grassland, moorland, woodland, coastal and wetlands). These will be made available online in the future. In the interim copies can be requested by contacting NIEA by E-mail: NIEA.EFSHigher@daera-ni.gov.uk.

Appendix 1: Oakwood Indicator species

Positive Indicators:

Betula pubescens	Downy Birch
Blechnum spicant	Hard-fern
Conopodium majus	Pignut
Corylus avellana	Hazel
Dryopteris spp.	Buckler-fern
Hyacinthoides non-scripta	Bluebell
Ilex aquifolium	Holly
Lonicera periclymenum	Honeysuckle
Luzula sylvatica	Greater Wood-rush
Oxalis acetosella	Wood Sorrel
Quercus petraea	Sessile Oak
Sorbus aucuparia	Rowan/mountain ash
Sphagnum spp.	Sphagnum species
Vaccinium myrtillus	Bilberry

Negative Indicators:

Acaena novae-zelandiae	Pirri-pirri-bur
Acer pseudoplatanus	Sycamore
Conifer spp.	Conifer species
Epilobium spp.	Willowherb species
Fagus sylvatica	Beech
Fallopia japonica	Japanese Knotweed
Galium aparine	Cleavers / Robin-run-the-hedge
Graminoid spp.	Grass dominated swards
Heracleum spp.	Hogweed species
Hyacinthoides	Spanish Bluebell
Impatiens glandulifera	Indian Balsam (Himalayan balsam)
Prunus laurocerasus	Cherry Laurel
Pteridium aquilinum	Bracken
Rhododendron spp.	Rhododendron species
Rubus spectabilis	Salmonberry
Rumex obtusifolius	Broad-leaved Dock
Symphoricarpos	Snowberry
Urtica dioica	Stinging Nettle

Appendix 2: National Vegetation Classification codes

Oakwood in Northern Ireland encompass a range of plant communities that broadly reflect a number of those communities described in the National Vegetation Classification (NVC) of Great Britain (Rodwell, 1991a) where descriptions and codes are given to associations of plants that are characteristic of particular environmental and management conditions.

Oakwood priority habitat

In Northern Ireland, most Oakwood can be assigned to two NVC community types:

W11 - *Quercus petraea – Betula pubescens – Oxalis acetosella* woodland

W17 - *Quercus petraea – Betula pubescens – Dicranum majus* woodland

W11 is the main woodland type on moderately acidic soils in the north-west of Britain and Ireland. It is intermediate in type between W9 *Fraxinus excelsior – Sorbus aucuparia – Mercurialis perennis* woodland and W17. Bluebell *Hyacinthoides non-scripta* can often be dominant and ungrazed stands can sometimes be dominated by Greater Wood-rush *Luzula sylvatica,* but the type is often marked by the absence of the more base-rich indicators of W9, rather than the presence of any particular community "character" species.

W17 is the main woodland community found on highly acidic soils in north-west Britain and Ireland. Bilberry *Vaccinium myrtillus* and Greater Woodrush *Luzula sylvatica* are usually dominant in ungrazed stands, with grasses, especially Wavy Hair-grass *Deschampsia flexuosa*, and acid-tolerant pleurocarpous mosses dominant where there is moderate to heavy grazing.

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