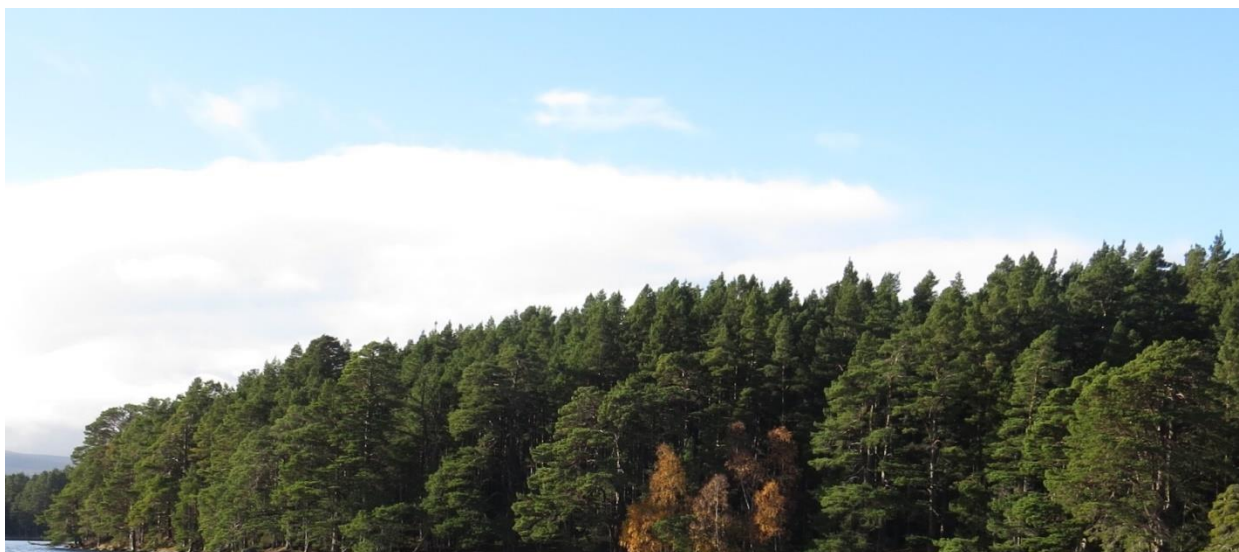

WOODLANDS



This woodland habitat statement considers a range of woodland habitats occurring in North East Scotland. These include woodland types considered important in a UK context such as lowland mixed deciduous woodland, wet woodland, upland oak woodland, upland mixed ash woods, wood pasture and parkland and native pine woodland. Habitats of particular interest in North-East Scotland are also covered, such as riparian woodland, planted pine woodland, birch woodland and scrub. Many of these woodland habitats occur in close proximity as part of a wider habitat mosaic.

Approximately 18% of the land cover in North East Scotland is wooded - but this is not spread evenly across the region, with very little woodland cover in the far north-east, up to 33% in Moray. Through Scotland's Forestry Strategy 2019–2029, the Scottish Government aims to increase the level of woodland cover across Scotland to 21% by 2032. It is expected that some of this increase will be delivered in the North East.



Importance

Woodlands vary greatly between types and locations; they provide a range of niches and opportunities due to their structural diversity and they also vary throughout the year; all of which means they support a wide range of species. Their relatively undisturbed soils (which include mycorrhizal fungi – crucial to the trees health) and ground flora can be as important as the trees themselves in providing habitat and supporting rare species. Beyond their environmental significance, they are also important to society, with strong cultural associations and economic benefits.

The available evidence shows UK woodland cover to have been much greater at points in the past than it is at the present day. However, UK woodland cover is also known to have dropped to very low levels around the time of the First World War. These trends are likely to be replicated within North East Scotland. Since the First World War, extensive planting of both native and non-native conifer species in managed commercial woodlands has increased woodland cover across the region. Commercial woodland area is now significantly larger than the areas of natural and semi-natural woodland. The National Forest Inventory provides information on overall woodland cover across the UK and the Native Woodland Survey of Scotland provides details of natural and semi-natural woodlands. Approximately 18% of the land cover in North East Scotland is wooded. This is on a par with the 19% woodland cover across Scotland as a whole and is considerably higher than the UK-wide figure of 13%.

There are various threats to natural and semi-natural woodlands across North East Scotland. The remaining woodlands can be small and isolated from other woodland patches, threatening their long-term survival. Further fragmentation, resulting from built development, is a threat in some areas. Damage done by high levels of browsing by deer, sheep and other animals is certainly an issue, particularly through preventing regeneration. Some woodland species and habitats depend on a certain level of skilled management, the occurrence and knowledge of which is declining. Tree disease is also a serious issue for tree species such as Ask, Oak and Wych Elm. Climate change may further increase the disease risk but also impact on woodlands more widely.

However, it is also true that the planting of native woodlands across the region greatly increased in the 1990's and early years of the 21st century, providing an increased future resource, although these woods will take many decades to reach maturity. There have also been improvements in the management of commercial forests, with the aim of providing some of the benefits of native woodland.

Woodland habitats can provide a number of benefits to society. For example, they have the potential to reduce flood risk and to purify agricultural run-off. They can also be long-term stores of carbon. They are undoubtedly popular places for recreation and important elements in our landscapes and townscapes, providing spaces which benefit communities' health and well-being.

A wide range of plants and animals are associated with woodland habitats in North East Scotland. These include higher plants, bryophytes, fungi, invertebrates, breeding birds, bats and amphibians.



Some important species associated with woodland habitats in North East Scotland

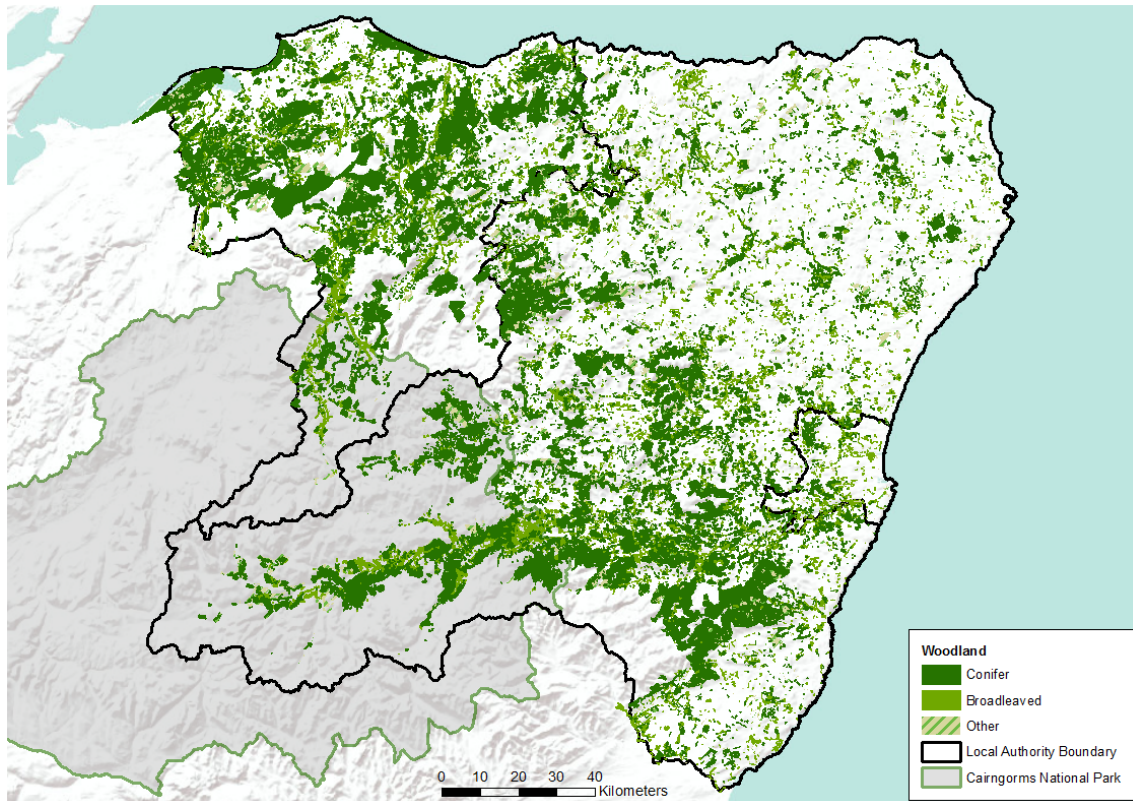
Red Squirrel	Wildcat	Pine Marten
Capercaillie	Black Grouse	Goshawk
Aspen Hoverfly	Kentish Glory	Wych Elm
Scottish Crossbill	Spotted Flycatcher	Moschatel
Bluebell	Twinflower	Three-veined Sandwort
Scottish Wood Ant	Cousin German	<i>Catoptria permutatella</i> (a micro moth)
Small Mesh-weaver	Pearl-bordered Fritillary	

A full list of important species associated with woodlands can be found in Appendix 1.

Influential factors

- Despite a Scottish Government presumption against woodland loss for development (Control of Woodland Removal Policy), losses continue
- Fragmentation of woodland is a threat to the survival of many woodland species
- A range of iconic species in the region is associated with woodland habitats
- The skills to manage semi-natural woodland habitats are being lost
- Browsing threatens woodland habitats and regeneration
- The region has a legacy of commercial woodland planting on previously important wooded and non-wooded sites, such as ancient woodland and peatlands
- Inappropriate new woodland planting can destroy existing habitats
- There is increased awareness of the benefits and value of natural and semi-natural woodlands
- Increased planting of native tree species in recent decades
- Strong targets from Scottish Government for the planting of both native and commercial woodlands
- Tree pest and disease issues are already prevalent in the region and are likely to increase with climate change and enhanced global trade/personal mobility





Woodland Habitats found in North-East Scotland

A wide range of native woodland habitats are found in North East Scotland. Their distribution across the region is shown in Table 1.

Table 1. Details of the Native Woodlands in North East Scotland

	Aberdeen City	Aberdeenshire	Moray
Area of native woodland (ha)	514	37,855	12,211
% of total woodland area	21.1	34.5	18.9
% of total land area	2.8	6.0	5.5
Area of main priority habitats (ha)			
Lowland mixed deciduous woodland	51	1,539	459
Native Pinewoods	95	16,782	4,993
Upland Birchwoods	187	8,106	3,389
Upland mixed Ashwoods	24	473	258
Upland Oakwoods	6	369	166
Wet and riparian woodland	76	2,510	1,416
Wood pasture and Parkland	Wood pasture is estimated at 100 ha and Parkland at 2,220 ha		
Native woodland scrub	0	483	63



Upland Birchwoods

Of the native deciduous woodland habitats, birch woodland covers the greatest area in NE Scotland. There are approximately 11, 682 ha of birch woodland in the areas of Aberdeen City, Aberdeenshire and Moray (including sections within the Cairngorms National Park). Both Downy Birch and Silver Birch are present. The former is more frequently dominant and occurs on wetter soils. Many woodlands contain both species and a variety of other trees, such as Rowan, Aspen, Alder, Bird Cherry and Gean.

Birch grows on soils with a higher range of fertility than pine and is found from valley bottoms up to around 650 m. It is often associated with heathland and acid grassland habitat mosaics. The Cousin German and Kentish Glory moths are associated with birch woodland, the latter mainly in open woodland with young re-growth. Birch woodlands are important for many woodland birds, including Willow Warbler.

The available data on woodland cover does indicate an increase in birch woodland in the latter half of the 20th century. This may partly reflect differences in survey criteria but could also be related to woodland grant schemes. There is certainly extensive regeneration in some areas. However, other birch woodlands in the area are moribund and lacking regeneration, due to high numbers of deer. Heavy grazing by sheep can also prevent regeneration.



Lowland mixed deciduous woodland

Lowland mixed deciduous woodland is a broad woodland type that includes woodland growing on the full range of soil conditions, from very acidic to base-rich, and takes in most

semi-natural woodland in southern and eastern areas of Scotland. It thus complements the ranges of upland oak and upland ash types. It occurs largely within enclosed landscapes, at relatively low altitudes, although altitude is not a defining feature. In North East Scotland, dominant tree types can vary with many of the locally native tree species being represented. Non-native tree species can also be present indicating a past history of management which can include coppicing and pollarding. Lowland mixed deciduous woodlands tend to be dominated by Oak, Ash, Birch, Elm, Alder and Hazel alongside species not native to North East Scotland including Beech and Sycamore.

There is approximately 2,049 ha of Lowland mixed deciduous woodland in Aberdeen City, Aberdeenshire and Moray Council areas.

Wet woodland

Wet woodland occurs on poorly drained or seasonally wet soils, usually with Alder, Birch and Willows as the predominant tree species, but sometimes including Ash, Oak, Pine and Beech on the drier riparian areas. It is found on floodplains, as successional habitat on fens, mires and bogs (especially when partly-drained), along streams and hillside flushes, and in peaty hollows. These woodlands occur on a range of soil types, including nutrient-rich mineral and acid, nutrient-poor organic ones.

There is approximately 4,002 ha of Wet and Riparian woodland within the study area. This includes figures for parts of Cairngorms National Park which encompasses the largest expanse of wet woodland, in the Muir of Dinnet area. Most of the sites across North East Scotland are small and fragmented. Much of the habitat is linear riparian woodland.

Wet woodlands are known to support a range of nationally important and declining bryophytes and invertebrates for example, but little information is available for North East Scotland. The habitat can be important as an Otter breeding site. Reed Bunting and Sedge Warbler also nest in willow scrub.

Many wet woodlands, for example within river floodplains, have probably been lost through drainage in the past. However, this threat is now reduced as drainage is less practical/desirable in the remaining sites and a number of wet woodlands are protected through local, national or international designation.

Riparian woodland

Riparian woodland is generally described as broadleaved woodland, predominately composed of native species, lying along watercourses. It can be composed of amalgams of the broadleaved woodland types described above with wet woodland tending to be particularly well represented. As the riparian zone can be difficult to access for both machinery and browsing animals, riparian woodlands can be the main broadleaved woodland remnants in many areas. They are also very important for freshwater ecosystems, buffering them from pollution, providing inputs of nutrients, stabilising banks and providing shade to keep water temperatures down. It is increasingly being recognised that they can have societal benefits, too, in reducing flood risk and benefiting freshwater fisheries, for example.



Riparian woodland is likely to have declined in area in North East Scotland throughout the 20th century, with changes in land management practices and greater mechanisation. More recently, grants have been made available to plant riparian woodland and this has seen an increase in its extent across the region, although it will take many years for these woodlands to mature. No specific data are available for the extent of riparian woodland, as it can encompass a number of woodland types.

Oak woodland

Sessile Oak (*Quercus petraea*) tends to be the predominant species in Upland Oakwoods, although Pedunculate Oak (*Quercus robur*) can also be present. Birch is also generally present along with varying amounts of other broad-leaved tree species, such as Rowan, Alder and Holly. British and Irish oakwoods are of international importance due to their rich animal and plant communities, especially those of bryophytes.

Oakwoods are quite scarce in North East Scotland, with only 541 ha identified. The majority of stands are considered likely to have been planted. Notable oak woods in the region include Laithers, on the Deveron upstream of Turriff; Old Wood of Drum on lower Deeside; Paradise Wood by the River Don and Gight, a Scottish Wildlife Trust reserve. The latter is quite a mixed woodland, with the best concentration of oaks further upstream by the Ythan at Fetterletter. These are all in more lowland areas but there is no clear distinction between 'upland' and lowland oakwoods.

The range of ground vegetation in oakwoods varies with soil type and grazing pressure. In the examples found in North East Scotland, the ground layer is usually of grasses or heath, sometimes with Bluebells and Brambles in less-grazed areas. Important plant species include the Three-veined Sandwort and Moschatel, and also frequently northern species such as Chickweed Wintergreen. Oakwoods can also be important for Spotted Flycatcher, Song Thrush, Redstart and Wood Warbler (though this species is rather rare in the region). Many mammals are found in oakwoods, including Badger, Roe Deer and Daubenton's Bat. The slug, *Limax tenellus*, is found in old woodlands, including several oakwoods in the area.

The factors influencing Oakwoods in the region are common to other broadleaved woodlands, for example, over grazing. Invasion of Oakwoods in western Scotland by non-native Rhododendron is a significant pressure, but it is not thought to be such a significant issue in North East Scotland, where the climate is less suitable.

Upland mixed ash woods

Ash (*Fraxinus excelsior*) is a common and widespread native tree. It can survive on soils too poor for most tree species and is quite often dominant on base-rich soils. Ash is a common component of riparian woodlands and can be found at 500 m or higher in northern and western Britain. Although frequently found in mixed broadleaved woodland and widely planted in the lowlands, Ash is rarely the dominant tree species in woodlands of the North East. There are around 755 ha across Aberdeen City, Aberdeenshire and Moray. A notable example of woodland containing ash occurs at Gight, a Scottish Wildlife Trust reserve. There is a significant disease threat to Ash woodlands, as a result of the non-native fungal disease, Ash dieback.



The bird species are similar to those of birch woodlands. The lichen, *Pannaria ignobilis*, grows on a variety of deciduous trees, but especially ash. Insects restricted to Ash include Centre-barred Sallow moth and Ash Sawfly, which has recently been recorded defoliating Ash trees in Aberdeen. Dog's mercury is common in the field layer.

Wood pasture and parkland

Wood pastures and parklands are historic man-made landscapes that typically consist of patches of wooded areas separated by grazed or mown grassland. Veteran boundary trees are remnants of this landscape and provide valuable habitat for other wildlife. In North East Scotland, parkland is generally more widespread than wood pasture and is thought to cover approximately 2,200 ha, while wood pasture covers around 100 ha.

The primary native tree species include Wych Elm, Ash, Alder, Oak, Birch, Scot's Pine and Yew, but non-native species, such as Beech and Sycamore, also provide valuable habitats. These trees are host to several important species of lichens, mosses and invertebrates, and birds and bats depend on the trees for nest and roost sites.

Several nationally important species, some of which are also rarities, are associated with veteran trees and wood pasture and parkland habitats. Of note are the lichen species Orange-fruited Elm Lichen - *Caloplaca luteoalba*, *Baccidia incompta*, Pale-edged Shield Lichen - *Parmelia subargentifera* and *Leptogium saturnium*. A number of important bird and bat species depend on the mature trees associated with this habitat, including Spotted Flycatcher, Barn Owl, pipistrelles and Daubenton's Bat. Invertebrates associated with these habitats include beetles, hoverflies, spiders and saproxylic invertebrates.

Factors currently affecting these habitats include changes in management practices, with skills being lost, a lack of knowledge of their importance, development, disease and pollution.

Native pine woodland

Self-sown woods of native Scots Pine are now rare in North East Scotland. Examples can be found at Glen Ferrick, Birse and on Breda on Donside. Much larger areas occur in mid- and upper-Deeside within the Cairngorms National Park. There are however, extensive areas of planted Scots Pine across the area – see *Planted pine woodland* section below.



Pine is able to grow on very poor, podsolised soils. While pine is dominant, pinewoods usually contain varying amounts of Birch and other broadleaved trees, with Juniper often an important element in the understorey.



Animals associated with pinewoods include birds, such as Capercaillie, Scottish Crossbill and Crested Tit, mammals include Red Squirrel and Pine Marten, wood ants *Formica aquilonia* and *F. lugubris*, hoverflies *Metasyrphus lapponicus* and *Blera fallax*, Robber Fly *Laphria flava* and the spider, *Dipoena torva*. Associated plants include Twinflower and One-flowered Wintergreen.

Native Scots pine woodlands occur only in Scotland. It is suggested that their current extent represents only 1% of their former range. Over centuries, the woodlands were cleared by people for firewood and timber and to create agricultural land. In the 20th century, many woodlands were under-planted with non-native conifer species as a commercial crop, resulting in their loss as the commercial crop grew and was harvested. In recent decades, significant efforts have been made to protect and expand remnant areas in their core Cairngorm, central and southern Highland range. On-going pressures include browsing by deer and sheep, which greatly reduces natural regeneration.



Planted coniferous woodland

The planting of coniferous trees, both native and non-native, as commercial species has been extensive across the North East Scotland. The area of planted coniferous woodland now vastly outnumbers that of self-sown. Such plantations tend to be species-poor compared to the habitats they replaced and also to self-sown woodlands. However, they do have conservation value for threatened species, notably Twinflower, which is found in some older pine plantations, Scottish Crossbill, Capercaillie, Black Grouse, Goshawk, Wildcat, Pine Marten and Red Squirrel.

Management of these commercial forests now takes greater account of environmental factors than in previous decades. Conservation of threatened species is a key outcome for forest managers. Undoubtedly there are further biodiversity benefits that could be gained from revised management practices in some forests – Scottish Forestry produces a range guidance documents to help forest managers.

Scrub

North East Scotland holds many areas of dense scrub, composed primarily of Broom but also Gorse or Whin. These range in size from thick hedge banks and small field corners to large expanses often dominating whole hillsides. Its growth can threaten other valuable habitats, such as heath and grassland where grazing or management does not reduce its spread. However, the biodiversity value of scrub is often underappreciated. It is important for a range of declining bird species, including Song Thrush, Linnet, Yellowhammer,



Dunnock, Whinchat, Stonechat and Whitethroat, whilst larvae of the Broom-tip moth feed on Broom. Scrub is often part of a successional sequence, which can ultimately result in native woodland regeneration if given suitable time. It can provide important cover in habitats otherwise lacking it, such as grassland and sand dunes on the coast.

Another scrub habitat of significance in the region, although of restricted range, is Juniper scrub. Whilst Juniper can occur as an understorey species, some areas occur in which Juniper dominates, such as at some moorland-edge sites. Juniper has a range of invertebrates that are restricted to it, including Chestnut-coloured Carpet moth, which is largely restricted, within the UK, to northern Scotland.

Hedgerows

Hedgerows are known to be highly valuable features for biodiversity, particularly in agricultural landscapes. They provide many species with food, shelter and a safe means of dispersal. Mature hedgerows are not as common a landscape feature in North East Scotland as they are in many English and Welsh counties, for example. Studies in the 1980s suggested that there were 2,100 km in the region, amounting to 0.5% of the UK total. The available data do suggest their extent has declined throughout the 20th century. In recent decades, grants have been made available for the planting of hedges, resulting in the establishment of young hedges on field boundaries across the region. Such plantings bring risks with, for example, some cases of Ash Dieback in the region being identified by inspection of trees imported from overseas and then planted in hedgerows.

The management of hedgerows is crucial in ensuring their biodiversity value. The timing and methods of cutting in particular, will have a significant impact on how species use them.

Opportunities for woodland habitats

- Protect woodland from loss and fragmentation as a result of built development. Avoid including existing woodland within development sites, or at a minimum ensure links to surrounding habitats are maintained or included in the design
- Designated sites, such as Sites of Special Scientific Interest and Local Nature Conservation Sites, as well as sites identified on the Ancient Woodland Inventory, should be fully protected
- Increase habitat connectivity by joining existing woodland blocks using appropriate planting
- Improve the management of commercial woodlands for environmental benefit
- Restore habitats impacted by commercial woodland planting, such as native woodland (e.g. PAWS – plantation on ancient woodland) and peatland
- Ensure planting of new woodlands does not damage valuable habitats
- Sensitively manage existing woodlands to increase biodiversity value – open up glades and rides and employ techniques such as coppicing where appropriate
- Use iconic species such as Red Squirrel, Capercaillie, Pine Marten, Wildcat and Scottish Crossbill as a means of promoting both woodland protection and better woodland management
- Continue control of non-native Grey Squirrels, to aid conservation of Red Squirrels
- Reduce the impacts of browsing animals on woodlands – control deer and exclude deer/livestock where appropriate



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- Be vigilant for signs of tree disease and act quickly where there are outbreaks
 - Minimise the use of imported trees in planting schemes. Use local sources where possible
 - Consider the potential impacts of climate change when planting and managing woodlands – will current management practice and tree species choice be suitable as the climate changes?
 - Use woodlands as a means to mitigate and adapt to climate change – woodlands can store carbon and reduce flood risk, for example
 - Use woodlands as a means to improve human health and well-being by encouraging woodland protection and planting in areas near to settlements

Case Study

Maryculter Community Woodland

This 67 ha site is owned and managed by the Maryculter Woodlands Trust. The Trust has had a role in managing the site since 2007 and, in 2016, with support from the Scottish Land Fund, purchased the woodland from the Forestry Commission Scotland (now Scottish Forestry). Prior to this, the site was at increasing threat of development, but it is now managed for habitat restoration, sustainable use by the community and wider public and for education and awareness raising.

Management focusses primarily on re-establishing a range of natural habitats and has been informed by pollen analysis of sediment from a bog core. Work has largely focussed on removing or thinning Sitka Spruce in order to facilitate regeneration by native broadleaves, especially Birch. Money raised from timber sales has helped with repairing and extending the forest and paths for visitors. Restoration also focusses on enhancing wetland areas and expanding small area of Scot's Pine and associated heathland.

A range of biological recording activities has revealed presence of over 200 species of plants and animal species including Pine Marten, Red Squirrel, Badger, bats, raptors and newts.

For further information, see: www.maryculterwoods.com.

Resources

The main data and information sources used to compile this statement are:

- Biodiversity NE audit: https://www.researchgate.net/publication/313226542_Biodiversity_in_North-east_Scotland_an_audit_of_priority_habitats_and_species/download
- JNCC HAP archive: <http://www.jncc.gov.uk/page-5220>

Forest Research's Habitats and Rare, Priority, Protected Species (HaRPPS 2.0) decision support system

<http://www.harpps.org.uk/harppsapp/harpps2/web/welcome>



Guidance on hedgerow management:

https://www.rspb.org.uk/Images/Englishhedgerows1_tcm9-133255.pdf

Forestry and woodland strategies have been prepared for [Aberdeenshire](#) and [Moray](#).

Conservation Evidence – Forest Conservation synopsis:

<https://www.conservationevidence.com/synopsis/pdf/17>

The UK Forestry Standard is the government’s approach to sustainable forestry and sets out both legal requirements and best practice guidelines.

<https://forestry.gov.scot/sustainable-forestry/ukfs-scotland>

Scotland’s Forestry Strategy 2019 – 29, provides a 10-year framework for action to help achieve a 50-year vision for Scotland’s woodlands and forests.

<https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/>

The Scottish Government’s ‘Control of Woodland Removal’ Policy provides policy direction for decisions on woodland removal in Scotland.

<https://scotland.forestry.gov.uk/images/corporate/pdf/control-of-woodland-removal.pdf>

The National Forest Inventory provides information on overall woodland cover across the UK.

<https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/>

The Native Woodland Survey of Scotland provides details of natural and semi-natural woodlands.

<https://forestry.gov.scot/forests-environment/biodiversity/native-woodlands/native-woodland-survey-of-scotland-nwss>

The Ancient Woodland Inventory provides details of ancient woodland sites in Scotland.

<https://map.environment.gov.scot/sewebmap/>

The Forestry Grant Scheme provides grant support for the forest industry:

<https://www.ruralpayments.org/publicsite/futures/topics/all-schemes/forestry-grant-scheme/>

Scottish Forestry has a wide range of guidance on woodland creation and management.

<https://forestry.gov.scot/>

An Ecological Site Classification for Forestry in Great Britain (ESC) is a decision support tool to select appropriate species for woodland creation and restructuring schemes.

<https://www.forestresearch.gov.uk/tools-and-resources/forest-planning-and-management-services/ecological-site-classification-decision-support-system-esc-dss/>

Scottish Natural Heritage has information on our native woodland types:

<https://www.nature.scot/habitats-and-ecosystems/habitat-types/woodland-habitats>

For further information about how protection and enhancement of woodlands are supported across North East Scotland, see also Local Development Plans for Aberdeen City, Aberdeenshire and Moray Council - see Introduction for further details.

