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Woodland Creation for Biodiversity: What *needs* to be considered?

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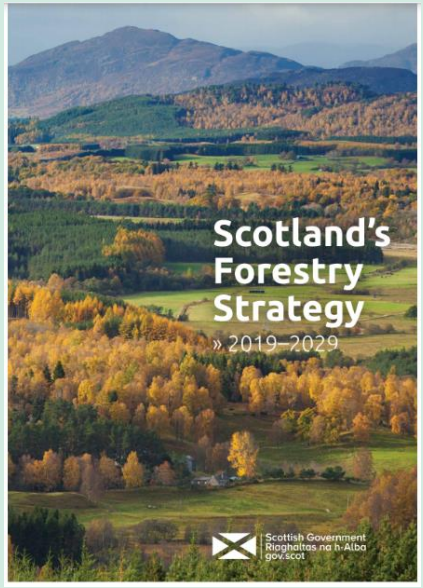
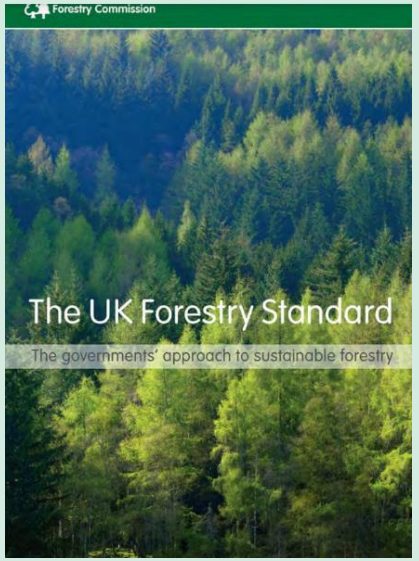
Policy Support for Improving Biodiversity

Biodiversity: *The variety of plant and animal life (species), including genetic variation within species.*



This Strategy provides an overview of contemporary Scottish forestry, and sets out a 10-year framework for action.



The United Kingdom Forestry Standard (UKFS) is the technical reference standard for sustainable forest management in the UK.

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Maximum Biodiversity

Figure 2: A diagramtic representation of the continuum of native woodland composition, from purely native to purely non-native tree species composition. Blue trees symbolise native species, green trees non-native species.

The greatest biodiversity value comes from purely native woodlands: but woods and forests composed of mixed species, delivering multiple objectives, are also valuable. Biodiversity is influenced by location, composition, structure and other related factors.

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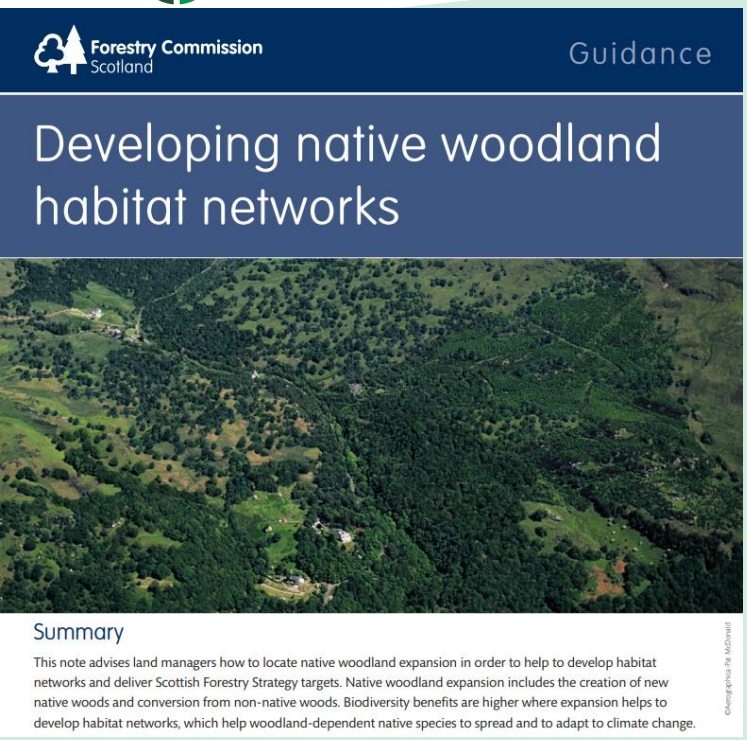
Site selection - Integration with other habitats



Non-native tree species can play host to native species if located close to populations

"As a general rule, try to locate areas of planting or natural colonisation of new native woodland so that they are adjoining or close to core woods in the networks.

forestry.gov.scot

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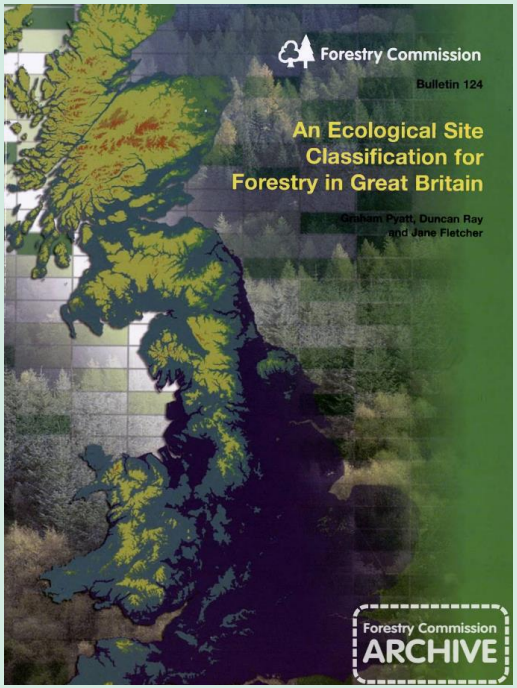
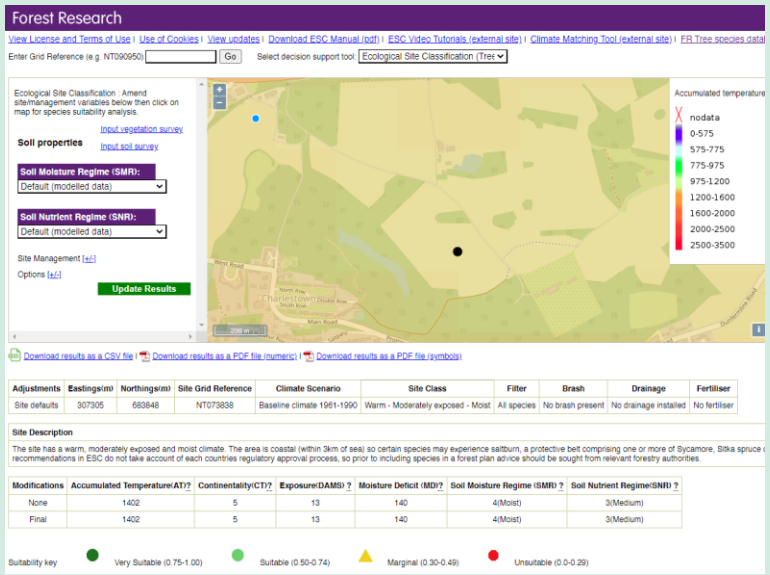
Site Selection – the '*right*' tree

ESC allows you to assess species suitability. In future will be an ability to test different scenario options of tree species, native woodlands and open space.





ESC-GIS might evaluate habitat suitability for keystone and BAP species.

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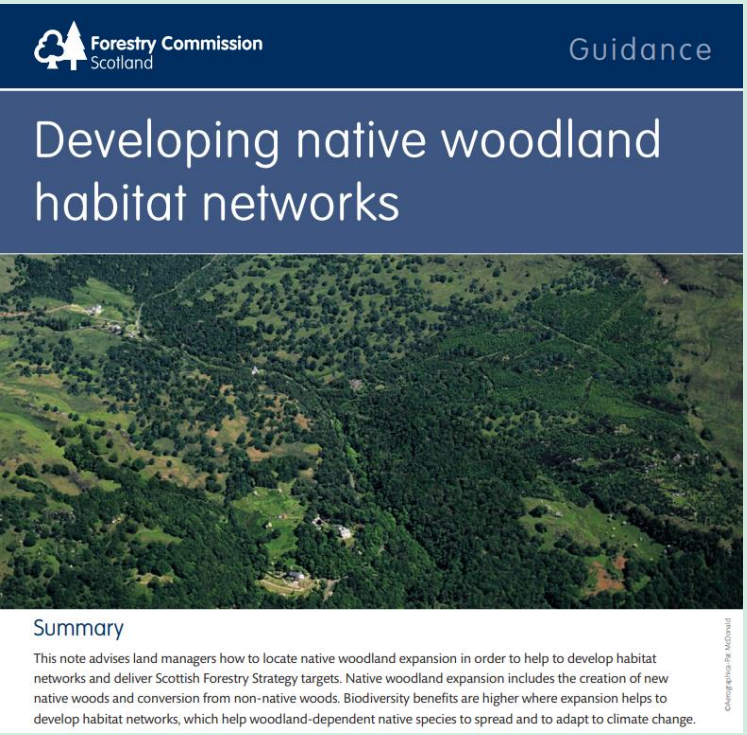
Site selection - Integration with other habitats


Forestry Commission Scotland

Guidance

Developing native woodland habitat networks

Summary

This note advises land managers how to locate native woodland expansion in order to help to develop habitat networks and deliver Scottish Forestry Strategy targets. Native woodland expansion includes the creation of new native woods and conversion from non-native woods. Biodiversity benefits are higher where expansion helps to develop habitat networks, which help woodland-dependent native species to spread and to adapt to climate change.

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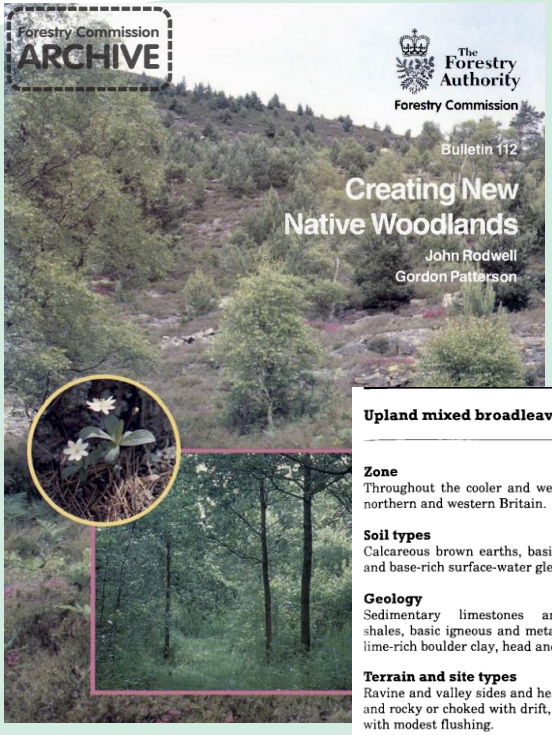
Planting of Key Species - trees



Upland mixed broadleaved woodland with dog's mercury

Zone
Throughout the cooler and wetter uplands of northern and western Britain.

Soil types
Calcareous brown earths, basic brown earths and base-rich surface-water gleys.

Geology
Sedimentary limestones and calcareous shales, basic igneous and metamorphic rocks, lime-rich boulder clay, head and downwash.

Terrain and site types
Ravine and valley sides and heads, often steep and rocky or choked with drift, and sometimes with modest flushing.

Major recommended trees
Ash
Downy birch
Rowan

Minor recommended trees
Sessile oak
Pedunculate oak (locally)
Wych elm
Alder
Holly and aspen (local)
Bird cherry

Major recommended shrubs
Hazel

Minor recommended shrubs
Hawthorn
Elder
Grey sallow

Optimal precursor vegetation
Damp grasslands and tall-herb vegetation with
False oat-grass (*Arrhenatherum elatius*)
Tufted hair-grass (*Deschampsia cespitosa*)
Cock's-foot (*Dactylis glomerata*)
Yorkshire fog (*Holcus lanatus*)
Rough meadow grass (*Poa trivialis*)
Sweet vernal grass (*Anthoxanthum odoratum*)
Common bent (*Agrostis capillaris*)
Meadowsweet (*Filipendula ulmaria*)
Water avens (*Geum rivale*)
Germander speedwell (*Veronica chamaedrys*)
Common sorrel (*Rumex acetosa*)
Bush vetch (*Vicia sepium*)
Primrose (*Primula vulgaris*)
Pignut (*Conopodium majus*)
Common dog violet (*Viola riviniana*)
Lady's mantle (*Alchemilla glabra*)
Hogweed (*Heracleum sphondylium*)

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Planting of Key Species – ground flora

NatureScot
Scotland's Nature Agency
Buidheann Nàdair na h-Alba

NatureScot Research Report 1211 - Establishing woodland plants in broadleaved woods - interim best practice guidance for conservation translocations

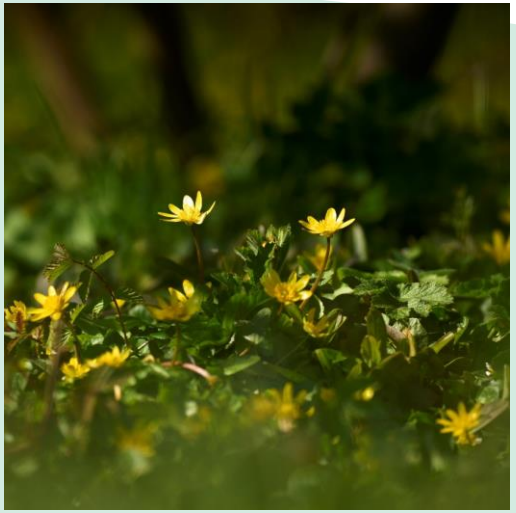
nature.scot/doc/naturescot-research-report-1211-establishing-woodland-plants-broadleaved-woods-interim-best-practice

Year of publication: 2021

Authors: Worrell, R., Holl, K., Long, D., Laverack, G., Edwards, C., Fuentes-Montemayor, E. and Crawford, C.L.

Cite as: Worrell, R., Holl, K., Long, D., Laverack, G., Edwards, C., Fuentes-Montemayor, E. and Crawford, C.L. 2021. Establishing woodland plants in broadleaved woods - interim best practice guidance for conservation translocations. Nature Scot Research Report 1211.

This report sets out interim best practice guidance on how to establish small populations of common woodland plants in broadleaved woods that can then spread naturally within the wood over time. This work can be seen in the wider context of conservation translocations in general, although the reintroduction of woodland plant species is typically local scale and non-controversial. The end point should be to develop naturalistic and attractive woodland plant communities which benefit both biodiversity and woodland amenity.



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Creation of future habitat - Niches for Species

To help protect biodiversity in the face of environmental change, there is a need to designate and manage areas of habitat for rare and threatened species.

Woodland – forest managers

For forest managers, the model can be used to predict the occurrence of protected species at the woodland scale. At this fine scale, knowledge of the potential occurrence of a particular protected species within a woodland polygon may alert the forest manager to the need for an expert survey to confirm a species' presence. Alternatively, when managers do not have the resources available for conducting specialist surveys, they could utilise the ecological information provided by the N4S model when scheduling work, paying particular attention to locations and timing so as to minimise the risk of impacting a species that could be present within the stand (e.g. avoiding particular structures or microhabitats within the woodlands). This is demonstrated in the following section by an output from the N4S model for one woodland protected species.

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Creation of future habitat - Niches for Species

Micro-habitat types

- Bare ground
- Deadwood
- Complex understorey with glades
- Glades
- Dry rock
- Wet rock
- Dry tree bark
- Wet tree bark
- Water/wet ground
- Woodland edge/scrub

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Creation of future habitat – challenges

UK Forestry Standard (UKFS).

Scotland's Forestry Strategy 2019 to 2029

NFI Woodland Ecological Condition - Forest Research

Developing Native Woodland Habitat Networks

Ecological Site Classification

Creating New Native Woodlands

Seed Sources for Planting Native Trees and Shrubs in Scotland

Establishing woodland plants in broadleaved woods - interim best practice guidance for conservation translocations

Niches for species: a multi-species model to guide woodland management